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UMI

ORGANIZATIONAL CONFIGURATION: THEORY & STRATEGY
PERFORMANCE PARAMETERS AS INDICATORS OF SUCCESS
AND PREDICTORS OF FAILURE IN STRATEGIC MANAGEMENT

A DISSERTATION SUBMITTED TO
THE FACULTY OF WALDEN UNIVERSITY
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

ADMINISTRATION/MANAGEMENT

BY
STEPHEN JAMES TVORIK

M.B.A., University of LaVerne, 1994
M.A., University of New Mexico, 1976
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DISSERTATION APPROVAL

Organizational Configuration: Theory and Strategy. Performance Parameters as Indicators of Success and Predictors of Failure in Strategic Management

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and have found that it is complete and satisfactory in all
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review committee have been made.

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Committee Chair

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Signature

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Date

ABSTRACT

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ABSTRACT

The research perspective taken in this study views strategic management as a complex set of processes that link strategies and tactics with valuation methodologies. It examines how they positively effect organizational operations, where organizational configuration relates to strategic group theory and the attributes of core competencies. This is framed with an overarching organizational purpose as effected by internal and external influences within the sphere of influence. That conceptual framework relates social structure to organizational structure, analogous to the dynamics created through the utilization of human capital assets. These strategic groups and the organizations studied appear to succeed or fail based on visionary leadership and the value-based management principles of senior managers, synchronous with their ability to execute the principles of the strategic management model, where an organization is conjoined by organizational purpose.

The researcher has constructed a total valuation model (TVM) composed of an array of select performance indicators, certain predictors of failure, and a valuation methodology. A theoretical model of strategic change behavior, designed to turnaround performance decline is proposed. The research has analyzed, evaluated and synthesized the theoretical assumptions of configuration theorists, viewing the organization in a holistic sense. As in chaos theory, which

would have us seek to discover the shape and motion of an organization by looking for themes and patterns rather than isolated causes or events.

This study examined coalignments involving environment, internal structure, and external influences within vertical and horizontal integration. To validate operational excellence within corporate structures the research model measured the turnaround response through transitions in the cost, asset, and activity variables of a diverse group of companies over a 15-year time frame. A model was constructed that measures the creation of shareholder value to quantify the impact of value-based management principles through return on invested capital (ROIC).

ACKNOWLEDGEMENT

From my earliest days as change agent, sales agent, and marketer, statistical analysis and linear forecasting have been productive tools in my professional life, in that numbers represent real world events and act as symbolic elements within mathematical equations to represent behavior. These techniques generate insight regarding phenomena occurring within our environment and can draw causal relationships, predictive of behavioral activity. While some more important tools were the regression analysis and forecasting methods that I have used, there has never been a substitute for "common sense." My father, who was wise beyond the boundaries of formal education (his own schooling ending after just eight grades), taught me "Don't just do things right, do the right thing!" This work is dedicated to my father, in his loving memory.

This interest in things statistical and analytical has led me on a six-year quest through graduate business programs and doctoral research projects. The culmination of that journey is this research on valuation methodologies and strategic behavior. These designs are valuable tools for the executive who must benchmark, validate, analyze, and change the performance phenomena of organizations.

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I. INTRODUCTION

The Problem

To survive and prosper in the political, social, and economic climate of the coming millennium, organizations must achieve viability by aligning purpose, people, strategies, and structures. Without this convergence and adaptive evolution the combined factors of global competition, technological change, evolving markets, and increased capital needs may overcome the organization's ability to adapt to the environment. These scenarios can effect a decline in performance. This research has examined an array of measures composed of select performance indicators, and certain predictors of failure, to construct a total valuation model (TVM) and change strategy to turnaround performance decline.

The purpose of this study is to articulate a logical structure of performance management (Figure 1) as represented in a model constructed of (a) "performance benchmarks" that relate theory to current practice, (b) multivariate "performance indicators" that suggest a deductive approach relevant to strategic planning for continuous performance improvement (CPI), (c) "performance validation" predictors that represent the inductive process focusing on a posteriori examination of industry-specific configurations predictive of future performance, and (d) a

multidimensional "valuation model index" (VMI) that suggests value creation. This three-tier model is designed to be useful for trans-industry analysis of both manufacturing and service sectors.

The TVM is effective in benchmarking key performance parameters, validating operational excellence, and measuring the creation of shareholder value. The research will provide empirical support for organizational change in times of distress. Senior managers who fail to recognize and address critical environmental change and who fail to engage in concomitant organizational response are doomed to irrelevance and failure.

An organizational configuration means those commonly occurring clusters of attributes of organizational strategies, structures, and processes (Miller & Mintzberg, 1983). The key to theory and strategy in this configurational perspective is the assumption that increased understanding of organizational phenomena can be achieved by identifying a distinct internally consistent set of organizations. The role of configuration theory has figured prominently in the exploration of the determinants of performance and is perceived to be the cornerstone of strategic management (Summer et al., 1990).

Performance-related configurational studies are of two types: (a) inductive, which are industry-specific inquiries that use configurations generated from empirical procedures

as the basis for performance comparisons (Hatten & Schendel, 1977); or, (b) deductive inquiries that first sort organizations into configurations and then test theory-based predictions about their relative performance (Zajac & Shortell, 1989).

The deductive approach to understanding the link between configurations and performance has been reported in the strategic management literature (Boeker, 1991). As a research vehicle it uses a specific theoretical perspective for both defining the population of groups and predicting their relative performance. This research study has used configuration theory based on a conceptual framework that incorporates common elements of the ecological and strategic choice perspectives (Zammuto, 1988).

Total Valuation Model (TVM) Components

The TVM has three components that represent an array of measures for monitoring effective performance (see Figure 1). Those elements are (a) benchmarks for performance, (b) validation of performance trends, and (c) a valuation index of performance. The model can be used to analyze industry leaders and to develop a performance profile or as a strategic tool to analyze competitors. As a tool it is valuable in identifying strengths and opportunities while mapping weaknesses against threats where the analysis is critical if the organization is pursuing competitive

innovation or competing through collaboration.

Value Management Processes: 3-Tier Model

CEO actions:
Organizational
Behaviorial Modification

PBM

Shareholder
Accountability

Internal Environment

Senior Management Team:
Monitoring strategic direction
PV & VMM

External Environment

Board Governance:
Feedback Processes

VMI

Shareholder
Accountability
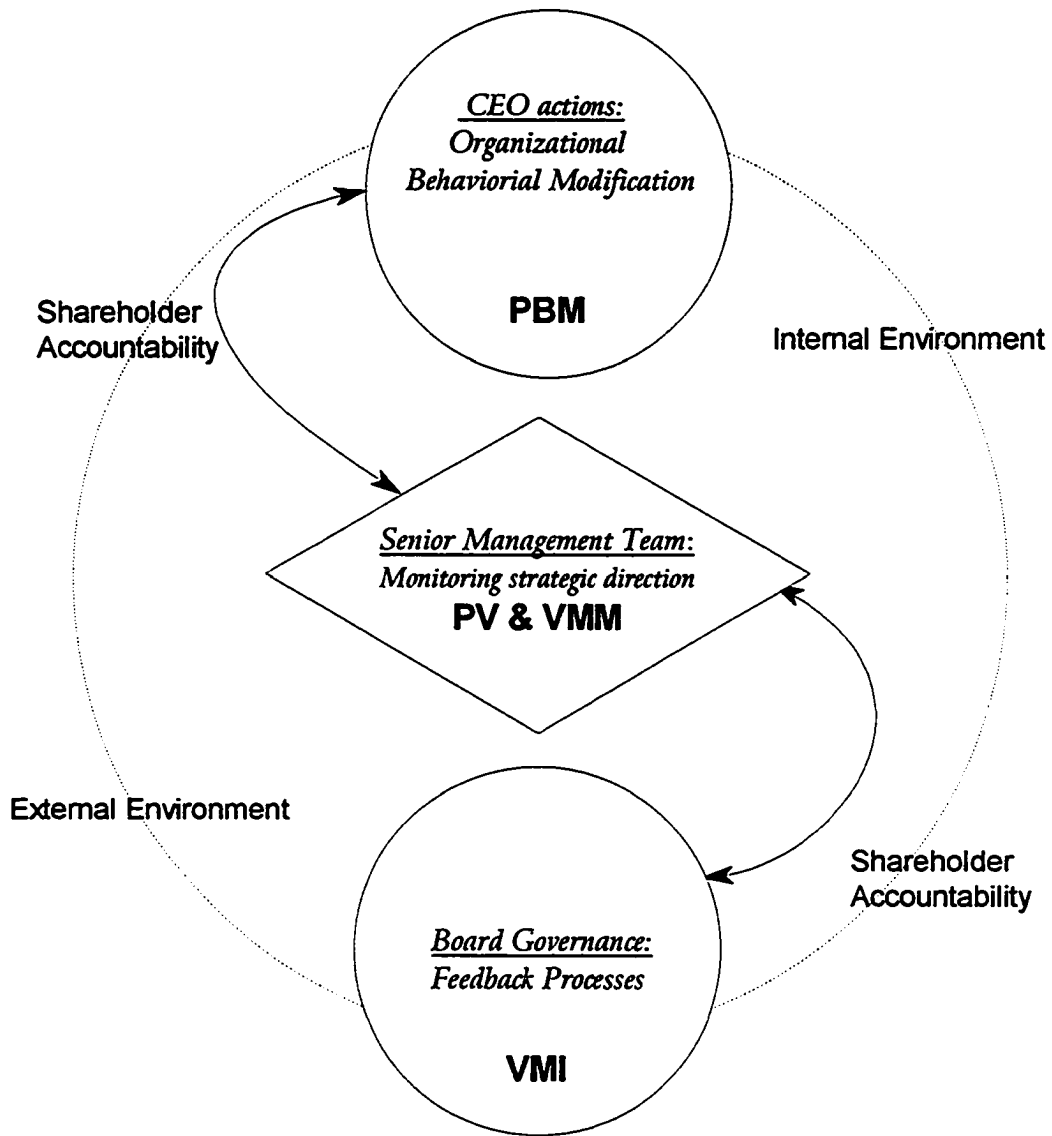
PBM = Performance Benchmark Model   PV = Performance Validation
VMI = Valuation Model Index   VMM= Value Management Model

Figure 1. Tvorik Total Valuation Model (TVM), process flow.

Performance Benchmark Model (PBM).

Continuous performance improvement goals should be compared against the industry leaders "standards of excellence" as a benchmark for which to strive. Data from a recent study by Ketchen, Thomas, and Snow (1993) suggests that as the hospital industry increased in complexity over the 1980s, those hospitals that possessed an entrepreneurial strategy displayed increasingly stronger performance. The tactic is to examine the metrics of indices for those industry overachievers and discover the patterns of success. "Those organizations that were following an innovative strategy, and those that could change to such an approach, were successful" (p. 1305). These findings are supported by the research of Hannan & Freeman (1984) that recognizes the power of the environment for dictating organizational form.

The construction of the benchmarking component of the model uses a conceptual framework of deductive inquiry to sort a strategic group, health care organizations, into two primary configurations (a) integrated delivery systems, and (b) traditional acute care organizations and to then test theory-based predictions about their relative performance. This segment of the model tests performance benchmarks of organization configuration against industry performance standards of the strategic group.

A review of 55 previously published studies as reported by Ketchcen, Thomas, and Snow (1993, p. 1282) was

used to develop a taxonomy of performance parameters that have relevance to operational excellence. From a review of these 55 studies a construct of categories was formed and a group of variables was selected (Tables 1, 2, & 3).

The Performance Benchmark Model (PBM) is composed of thirteen variables in five categories (a) capacity and utilization, (b) patient and payer mix, (c) capital structure, (d) expenses and profitability, and (e) productivity & efficiency. This research has used the same five categories as the previously cited study, as they have the consensus of an expert panel consisting of two strategic management and two health policy researchers (p. 1291). The comparative data are from HCIA a division of Deloitte Touche covering 4,500 U.S. hospitals with 52 performance parameters. This data was compared against a longitudinal proprietary database from VHA, Inc. a performance improvement company and hospital alliance of 800 U.S. not-for-profit hospitals composed of 2,500 performance measures for 1989 through 1994.

Performance Validation Model (PVM).

Measurement and evaluation are critical tasks in the management of organizations. A model of performance trend indicators should be constructed to establish baseline measurements that describe (a) the organization, (b) the strategic group the organization competes against, and (c)

the industry environment the organization operates in. This
model uses various financial ratio indicators to establish
financial baseline determinants (Altman, 1968; Tobin, 1969).
These measures will quantify the strategic direction and
economic effectiveness of a sample population of
organizations.

The research examined a cross-sectional industry
population of 132 organizations (i.e., SIC codes). Sixty of
these were identified in the UMI abstract base (1994-1995)
to represent a disparate population sample as suggested by
Robbins and Pearce (1993, p. 305). This sampling was
combined with a population of 72 organizations identified in
four previous studies (Chakravarthy, 1986; Brumagim &
Klavans, 1994; Moulton & Thomas, 1993; Clapham, 1994) to
establish a representative population sample of companies
within declining industries, who use retrenchment strategies
or who have demonstrated success at turnaround.

A valuation model index (VMI) and value management model (VMM)

These are presented as tools to measure and guide value
creation. The methodology for measuring shareholder value
is viewed as a primary performance indicator, presented as a
risk-adjusted, discounted cash flow model. This VMI
captures the dynamics of risk, operating efficiency, capital
productivity, growth, and time as they collectively effect

shareholder value, and is more complex than the traditional du Pont model of return on equity (ROE). The assumptions of the value management model (VMM) are that to maximize shareholder value, the balance sheet and income statement must be managed. The goal is to manage costs and assets, develop efficiencies, and create strategic expansion.

Strategic Groups

The study of strategic groups has been a topic of study for over 20 years. Many empirical studies have examined the existence and evolution of strategic groups in various industries dating from Hunt's 1972 study of the appliance industry and the much-cited Hatten, Schendel, & Cooper (1978) beer industry study. The underlying definition of strategic groups as utilized by these studies (Cool & Schendel, 1987), recognizes a collection of firms in an industry following the same, or a similar, strategy along the strategic dimensions (Porter, 1980). A variety of methodologies are offered to define the strategic dimensions; current thinking, however, centers around an organization's scope and resource commitments (Aaker, 1988).

Some authors suggest that the parallel concept of mobility barriers, which defines ease of movement between strategic groups, should be the primary measure of strategic group definition. These mobility barriers allow firms to either rapidly enter or leave different strategic groups.

Configurations of strategic groups have been frequently studied with an inductive approach and represent an aggregation that lies between organizations and industries. Advocates of the strategic group concept contend that organizations within an industry can be classified according to certain key characteristics including strategic orientation, focus, and action. The strategic group is considered a stable entity that reflects decisions and behavior that are long-term, capital intensive, and difficult to change (McGee & Thomas, 1986). The mobility barriers of costs expenditures and governmental regulations keep organizations from rapidly or easily switching strategies. Recent studies have shown that empirically distinct configurations exist, but empirical tests have yet to clarify the relationship between strategic group membership and performance (Barney, & Hoskisson, 1990). This research study will empirically test group membership and performance.

The conceptual framework for defining configurations of organizations and their relationship to performance can be traced to the industrial organization paradigm (Bain, 1956). An industry's structure determines the behavior of its member firms, whose collective conduct impacts performance. Economists ignored organizational conduct and looked directly at industry structure to explain performance. The reasoning was that since structure determined conduct

(strategy), which in turn affected performance, one had only to learn the industry structure to predict performance of the strategic group, (Porter, 1981, pp. 609-620). The problem thus becomes how to define the appropriate components of this model? This research will answer that question.

An organization's competitive strategy varies along two main dichotomous dimensions:

1. A method of developing competitive advantage An organization must focus on new opportunities or efficiently exploit those already available (Miles & Snow, 1978).

2. Breadth of operations This refers to a narrow focus on niche markets or expansive activities that are diversified across many segments (Porter, 1980).

As the choices are made it becomes increasingly difficult for the organization to make a substantial shift along either dimension. It is constrained by the difficulty of duplicating capabilities required to be viable in the new position (Caves & Porter, 1977). Zammuto (1988) suggests that a given industry will have four distinct and internally homogeneous configurations:

1. Entrepreneurs/Specialist They pursue new opportunities in a narrow domain.

2. Prospectors/Generalist Pursue new opportunities across a broad spectrum.

3. Defender/Specialist Efficiently exploit existing

opportunities in a narrow domain.

    4. Analyzer/Generalist - Efficiently exploit existing opportunities across a broad domain.

    The differences drawn by organizational ecologists between these strategies are based on the biological literature's logistic model of the proliferation of organisms within a niche, see McArthur & Wilson (1987) in their work, The Theory of Island Biogeography. In their theory, $dN/dt = rN(K - N)/K$, r represents the reproductive rate of the population, K is the carrying capacity of a niche, N is the number of organisms in the population, and t is a unit of time. Zammuto (1988) was the first to combine this distinction with those made by Miles and Snow (1978) with respect to root causes for competitive distinction. The empirical evidence suggests that industry conditions moderate the configurations' performance relationship, given specification of the conditions in a particular industry.

    Making sense of an organization's performance is complex and often ambiguous. It is the decision makers' analysis and interpretation that affect how strategies are formulated and implemented. According to Quinn (1980) strategies "shape the true goals of the enterprise. They delineate the broad limits within which the enterprise operates and dictate both the resources the enterprise will have accessible for its tasks and the manner in which these resources will be allocated" (p. 8).

Through multivariate and regression analysis, researchers can make predictions regarding the relative performance of organizations that fit in one of these four groups. Research has shown that innovative organizations in an Entrepreneurial or Prospector group will exhibit a higher degree of effectiveness and efficiency. Those represented in the remaining two categories of the Defender or Analyzer exhibit weaker performance when operating in a turbulent environment (Lawless & Tegarden 1991). This research will seek to validate the configuration-performance relationship.

Purpose of the Study

The purpose of this study is to articulate a logical structure of performance as represented by a "performance benchmark" (PBM) model that relates theory to current practice. This model presents multivariate "performance indicators" that suggest a deductive configuration theory approach relevant to strategic planning for continuous performance improvement (CPI). A "performance validation" model (PV) of multivariate "predictors" represent the inductive process that focuses on a posteriori examination of industry-specific configurations relative to the prediction of future performance. The structure of a multidimensional "valuation model index" (VMI) is presented that provides comparative analysis of value creation. This three-tier model is designed to be useful for trans-industry

analysis of both manufacturing and service sectors.

The development of a holistic and tactical turnaround model to correct performance decline was empirically tested. Robbins and Pearce (1992) studied cost and asset reduction strategies for 38 textile mills (SIC code 22). As they suggest, "the next step in refining the model of turnaround responses is to measure the transitions in the cost, asset, and activity variables in multiple and disparate turnaround situations" (p. 305). This research will conduct a multiple industry analysis with an expanded strategy focus on (a) leadership changes, (b) organizational change, and (c) retrenchment strategies.

The research suggests a model that will guide the creation of value maximization through balance sheet and income statement management. Strategic management is a process of theory (strategy), practice (implementation), and analysis (feedback). That approach is represented in the value management model presented in this study. The research will empirically test and validate a conceptual foundation that supports deductive strategy for performance improvement of organizations in decline. An exploratory descriptive review of the health care industry will provide a conceptual foundation for the development of comparative performance parameters and as a vehicle to demonstrate planning and analysis models.

This research has developed strategic analytical planning models based on a synthesis of qualitative methodologies with supportive quantitative tools. These models will be seen from the perspective of being a specialized form of grounded theory (Glasser & Strauss, 1967). This approach will move beyond the current structure follows strategy paradigm where systems support structures. Purpose, not strategy, is the reason an organization exists. We must move beyond strategy, structures and systems to a framework built on purpose, process, and people, anchored by core values which give meaning to work. This is a fundamental change from current doctrine (Bartlett & Ghoshal, 1994).

This research study will consider the challenge of strategic purpose interlinked to strategic implementation as articulated through the construction of models for:

1. <u>Compilation</u> (data collection),

2. <u>Analysis</u> (assessing project worth in the context of organizational decision making activity regarding uncertainty in risk analysis),

3. <u>Articulation</u> (action plan for change),

4. <u>Implementation</u> (making things happen),

5. <u>Feedback loops</u> (evaluation of experience),

6. <u>Evaluation</u> (effectiveness and efficiencies),

7. <u>Behavioral modification</u> (corrective action, both proactive and reactive).

Limitations of the Study

The structure and validity of the TVM are grounded in previous research and empirically tested against historical data from Standard & Poor's databases. Theory needs the validation of real-world practice where the underlying principles, methodologies, and techniques are well documented and validated so as to suggest a high degree of confidence in the utility of the model. The question then must address what value these tools offer. The development of analytical tools for diagnosis and evaluation must be complemented by a strategy to turn around declining performance and correct structural weaknesses.

This research focused on the empirical evidence of financial metrics and indices in identifying the strategic and tactical actions taken to correct declining performance and turnaround crisis situations. Future research should explore the analysis of behavioral dynamics of managers in these situations and match it with the quantitative data that would illuminate the logic and reasoning behind successful and failed strategies. Information developed through tools such as the "competing values framework" of Quinn and Rohrbaugh (1983) would be insightful and valuable to future research.

The Hypotheses

Organization Configuration

Strategic group performance can be comparatively measured by benchmarking best industry standards of practice and comparing the organization to such standards. The research question will explore environmental issues within the turbulent health care industry through descriptive analysis. Hypotheses one to three examine and quantify performance variances and structure in the emergent strategic group of integrated healthcare delivery systems (IDS) within VHA, an alliance of 1,200 not-for-profit hospitals and the general population of not-for-profit hospitals. The question examines if the IDS is more effective than the traditional single entity acute care organization operating within the healthcare industry.

Research Issue 1: The underlying assumption of a strategic organization configuration is that the entity is a system of processes and people united by organizational purpose. These function within a structural model validated by an analysis of superior performance parameters of industry leaders that strive to overachieve these best practices. When systems are coupled with an innovative value strategy this should result in dynamic growth and market leadership.

<u>Hypothesis 1:</u> Those VHA organizations configured as integrated health care delivery systems will be operationally more efficient than the general population of System-affiliated health care organizations.

$$Ha: \mu_{VHA\ IDS} > \mu_{Non-profit\ SAHCO}$$

<u>Hypothesis 2:</u> The VHA alliance of traditional non-profit acute care hospitals is operationally more efficient than the general population of traditional non-profit acute care hospitals of similar size.

$$Hb: \mu_{VHA} > \mu_{Non-profit\ HCO}$$

<u>Hypothesis 3:</u> The VHA non-profit traditional acute care organizations are operationally less efficient than the VHA population of acute care integrated delivery systems.

$$Hc: \mu_{VHA\ HCO} < \mu_{VHA\ IDS}$$

Validation of performance is critical in monitoring the consequences of strategic direction and management action. The research question will examine, analyze and synthesize statistical techniques for such measures. Hypothesis four will quantify the indicator values that predict decline or ascent of corporate performance.

Research Issue 2: Organizational performance can be validated by select multivariate performance indicators that can predict success or failure. A linear equation composed of financial ratios used in a multiple discriminant function analysis can be predictive of performance.

Hypothesis 4: Excellent organizations (X) will demonstrate a predictor value significantly greater than non-excellent organizations (Y).

$$Hd: \mu_{X \ Z\text{-}value} > \mu_{Y \ Z\text{-}value}$$

Leadership and Organizational renewal

The role of leadership is an essential element of corporate performance and the need to change leaders and organizational structure in times of crisis will be examined. This perspective views the CEO as responsible for establishing an organization's strategic direction while the board of directors is responsible to the shareholders for total stewardship. The research issue, along with hypotheses five through six will seek to quantify with empirical research the key actions taken by organizations to address declining performance.

Research Issue 3: Organizations in decline will need to change leadership, strategic direction, and resource allocation, to successfully adapt to the environment as demonstrated by increasing operational performance and turnaround success. The content analysis of secondary data will indicate the organizations' response to decline.

Hypothesis 5: Organizations (X) demonstrating a performance decline who replace the CEO will be more successful at organizational renewal and turnaround than those Organizations (Y) who do not.

$$Hd: \mu_{X \ +1 \ CEO} > \mu_{Y \ +0 \ CEO}$$

Restructuring and retrenchment

The literature suggests that restructuring is a common response of organizations to impending financial disaster (D'Aveni, 1989; Gowen & Leonard, 1986; Hardy, 1987). Other researchers describe restructuring and retrenchment as only a tactic of a short-term operating plan (Hofer, 1980; Schendel, Patton, & Riggs, 1976). Researchers have generally failed to operationally define restructuring as an integral tactic or to assess utility in the recovery process, although Robbins and Pearce (1992) did identify strategies and tactics that are essential to turnaround success. The logical extension of hypothesis six is to examine the relative extent to which restructuring is pursued through asset versus cost reduction.

Hypothesis 6A: The degree of organizational retrenchment is positively correlated to the measure of turnaround success.

Hypothesis 6B: The focus of organizational restructuring produces significantly different results.

Hypothesis 6C: The correlation between the degree of retrenchment and turnaround success is greater in severe turnaround situations.

Hypothesis 6D: The correlation between the degree of retrenchment and turnaround success is greater in retrenchers than non-retrenchers in turnaround situations.

These hypotheses lay the foundation for development of the valuation management model. They establish a
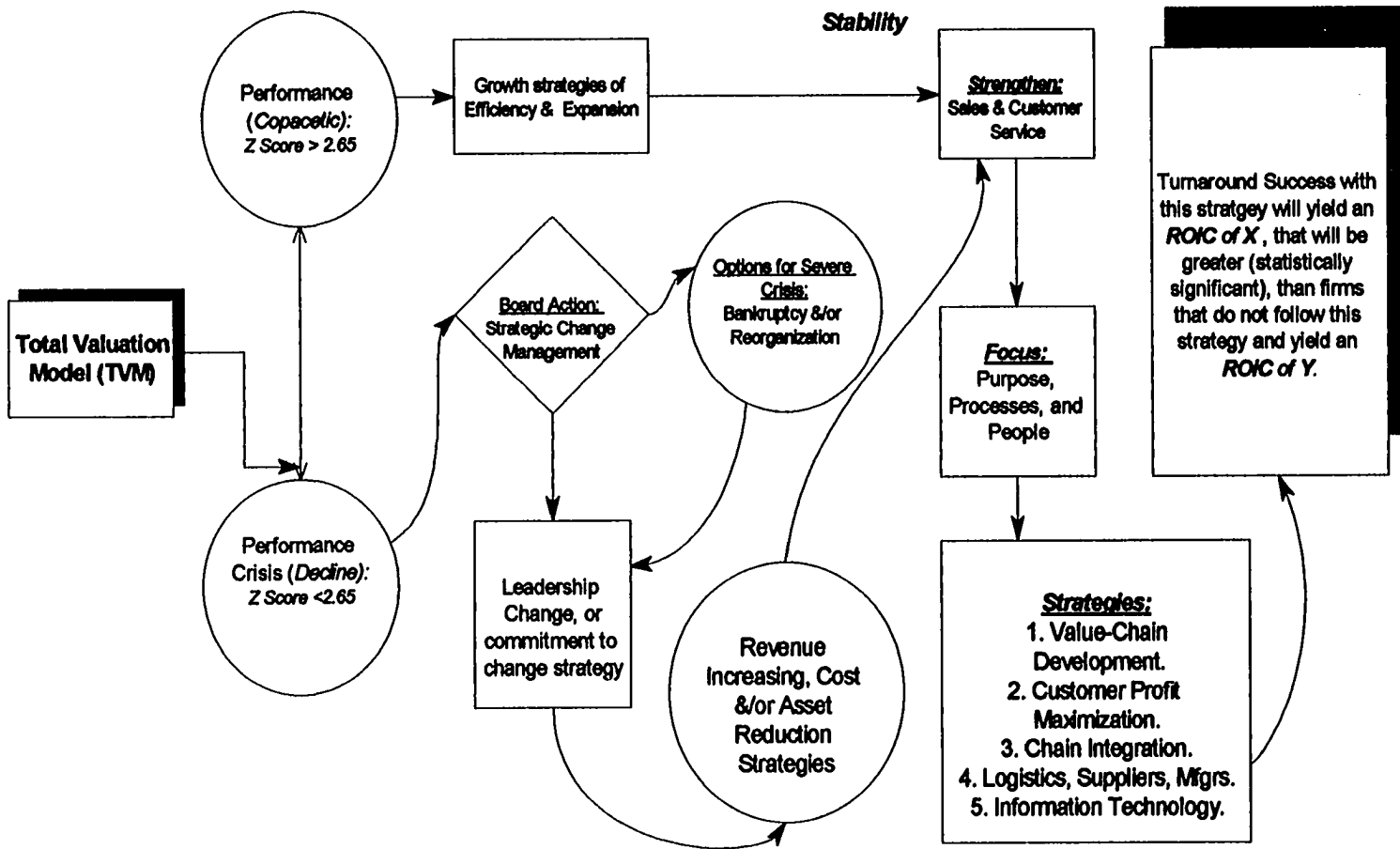
Figure 2. Strategic implications of value management.

theoretical perspective concomitant with tactical strategies for turnaround based on an objective analysis and empirical examination of historical industry data. The conceptual tactical flow of strategy initiatives is presented in Figure 2. It postulates a series of actions that suggest a high degree of confidence in the reversal of performance decline through value-chain activities that focus on return-on-invested capital (ROIC).

Hypothesis Development

Developing quantitative models of a theory is a necessary step in the theory development process where the quantitative modeling process is merely a translation exercise (Blalock, 1969). In practice the ambiguous assumptions are often identified in the modeling process. Such identification forces the model builder to develop new theory to clarify these ambiguous assumptions. The quantitative model then serves as a more precise statement of theory that can be more unambiguously falsified. When the quantitative model is not an accurate translation of the logical arguments in the theory, the model neither validly represents the theory nor adequately tests it, (Venkatraman, 1989). The critical issue is to develop a model that accurately represents the logical structure as postulated by the strategist.
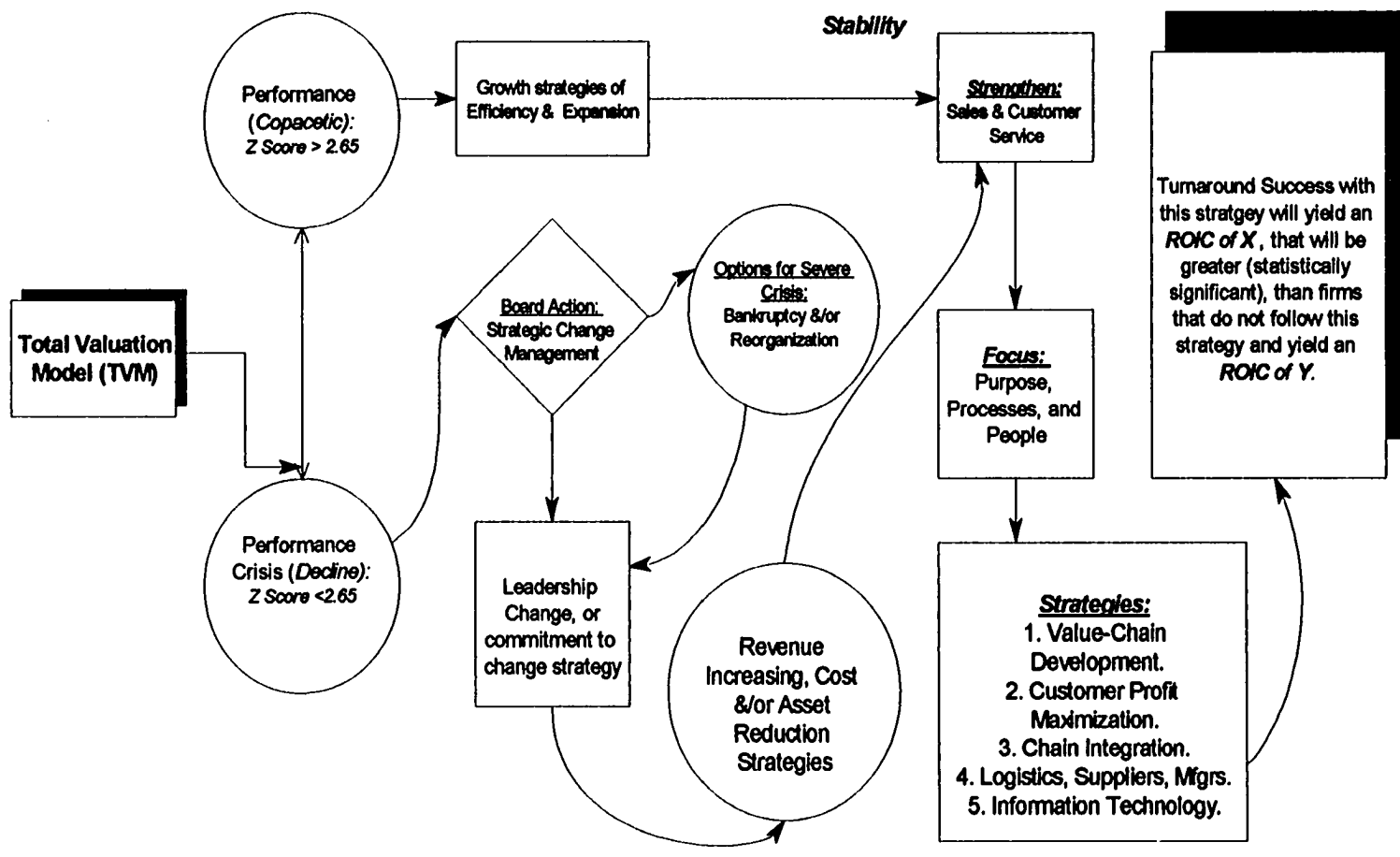
Figure 2. Strategic implications of value management.

II. LITERATURE REVIEW

Tools, Design, and Models

Doty, Glick and Huber (1993) examined the way in which organizational attributes are configured and how they contribute to effectiveness, using the Miles and Snow classification theory. "A major conclusion from the study is that fit among contextual, structural, and strategic factors is a relatively powerful predictor of organizational effectiveness" (p. 1239).

Configurational theories are developed using an ideal-type construct to represent complex synergistic effects that arise from specific configurations of organizational attributes. Researchers attempting to test configurational theories must recognize and accurately model the ideal types incorporated in configurational theories to ensure that their tests of the theories are valid. Further, future theorists should include a complete set of factors in their descriptions of ideal types. At a minimum, ideal types should be described in terms of the imperatives that drive organizations toward certain configurations (Miller, 1978).

Structure and a Theory of Action

Sociological analysis in its functionalist form has been criticized for its emphasis on justifying the stability of social systems while neglecting the forces making for breakdowns and change (Lipset, 1975). The researcher will

develop models for analysis, evaluation, feedback and the implementation of change. A model that can be used to describe and analyze organization social structure is presented in Figure 3.

A difficulty of sociological theory is in moving from a conceptual framework to a theory that provides verifiable predictions and is useful for empirical research. The utility within this model provides an innovative way to visualize potential relationships or garner insight from a global view of these spheres of influence. It is important to note that all deductions are qualitative, rather than quantitative, despite whatever mathematical computations are made in the general analysis. Deductions all stem from a combination of the logical structure of the theory and one or more empirical generalizations, which are usually qualitative and based on general experience rather than specific research.

This model represents a conceptual framework that facilitates developmental thinking and research into strategic planning models in support of purpose, processes, and people. The research suggests that theory within the sociological context of organizations will come to have the same kinds of predictions as the example above: qualitative predictions that connect changes in two or more observable variables. While systematic research plays a small role in theory formulation, it is useful in testing the hypothesis

and to describe whether it is accepted or rejected.

The design of a framework for research and analysis of results is the most important manner in which theory is used. An example is that before the theory of human capital, no one thought of estimating the rate of return to education, considered as an investment. There was no thought of estimating, nor was there a way to estimate, the value of a woman's time spent in childrearing and thus the costs expended in the home on total child care. Now that can be and has been done (Mincer & Polachek, 1974).

A theory of action must consist of more than just definitions. It should generate testable predictions that will allow it to be rejected or revised, and can provide a framework for the design of empirical research and analysis of data. Attention must be paid to the development of a logical system with specific connections to observable data.

The skills needed are problem-finding and opportunity development, whereas problem-solving restores the status-quo to normality. Maximization of opportunities is implicit in that effectiveness is more essential than efficiency. The pertinent consideration is not how to do things right, but to find the right things to do, and to then determine the appropriate allocation of resources to accomplish that task. Execution and implementation thus become critical success activities.

Feedback Loops

External Environment

Education & Religion

Social Regulations

Society Organization

Governance

Internal Environment

Social Class

Culture Values & Mores

Feedback
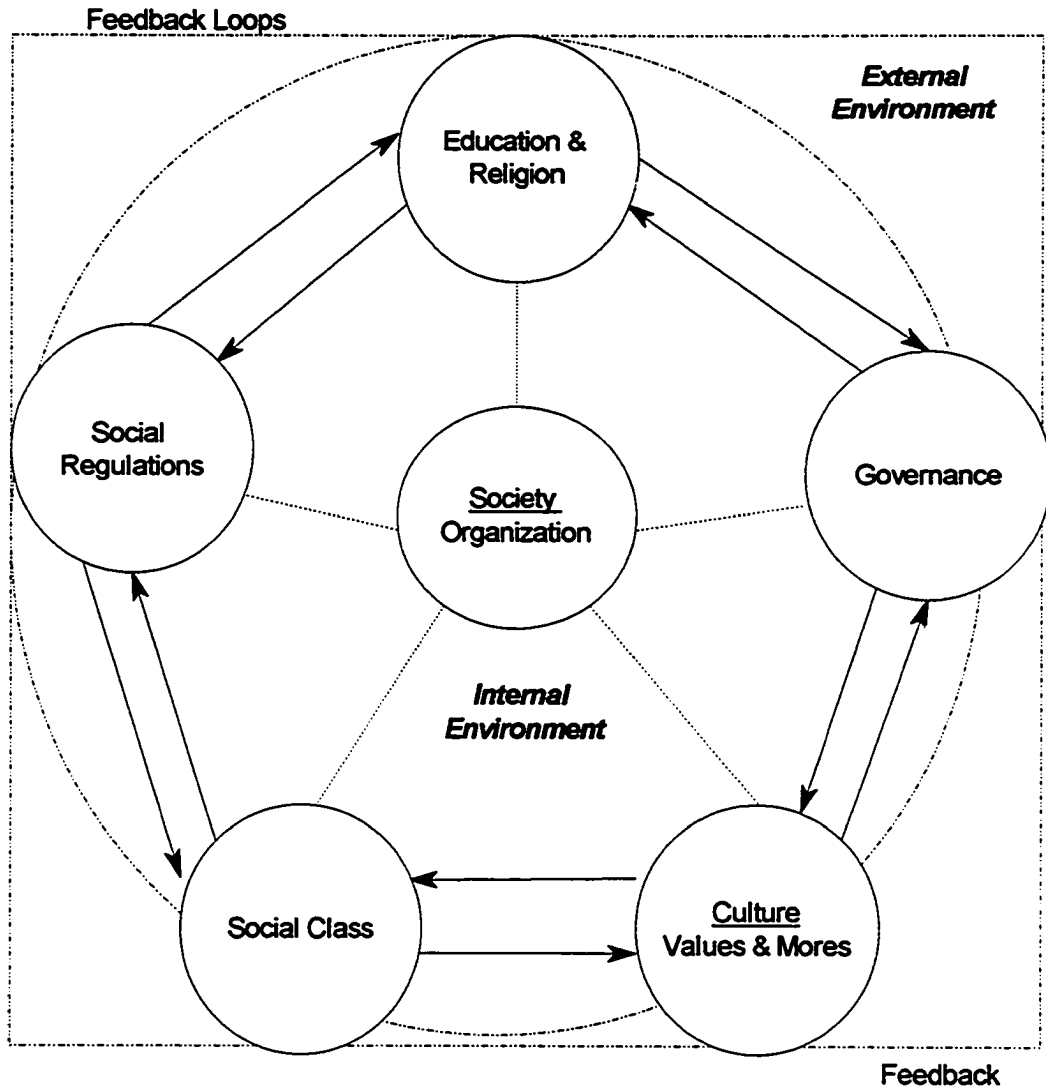
The Learning Society: Social Structure

Interactive	Feedback Loops	Inputs & Outputs
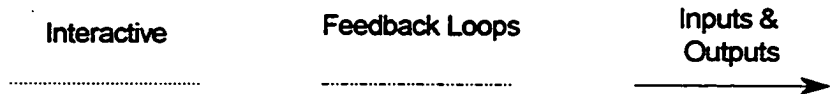
Figure 3. Social structure and spheres of influence.

Chaos theory from a systems perspective suggests organizations that thrive will have a fractal quality. A fractal is a mathematical object that can have the same level of complexity at all levels of magnification. Fractals suggest the futility of searching for finer measures of discrete parts of the system. Chaos theory would have us seek to discover the shape and motion of an organization. We must look for themes and patterns rather than isolated causes or events. The holistic systems approach is why total quality management (TQM) and continuous quality improvement (CQI) eventually proves effective. Because individuals within the system can appreciate the complex and ever-changing shape of the organization, where multiple forces work together to form and shape it (Briggs, 1992; Mandelbrot, 1983).

The normative theories proposed in organization sociological research should use the same conceptions of rational action used in economic theory. A theory of action has as its base individual preferences (subjective well-being). It becomes possible to evaluate social arrangements, social structures, or even whole social systems based on their satisfaction of preferences. An example is the principle of Pareto optimality, named for economist Vilfredo Pareto in his capacity as economist. The principle says that if one social arrangement or one policy is preferred to a second by at least one person in society,

and the second is preferred by no one to the first, a move from the second to the first is a desirable move for the society, a move toward "Pareto optimality" (Pareto, 1935).

This theory provides a starting point for normative evaluations of organizations to the degree by which they satisfy the preferences of their stakeholders. Because the theory encompasses both corporate bodies and individuals as purposive actors in society, we can evaluate organizational social systems according to the degree to which individuals' interests and the interests of corporate actors are satisfied. If, between two social systems, all individuals' interests are more fully satisfied in the first than in the second, although some corporate actors' interests are better satisfied in the second, we can say the first is more desirable to individuals' than is the second. This is a model that intellectually satisfies a way of bringing values as individuals, and our theoretical activities as researchers, closer together (Parsons, 1935).

Strategies

The researcher has examined strategic management as strategies that refer to the broad overall process of environmental forecasting and those external considerations used in implementation of tactical actions. Strategy is defined as the set of decisions and actions that result in this formulation and implementation while achieving the

organization's objective.

The nine critical tasks are:

1. Formulate purpose, philosophy, and goals.

2. Develop a company profile that reflects internal conditions and capabilities.

3. Assess the environment, both competitive and general contextual factors.

4. Analyze options by matching resources with the external environment.

5. Identify options in light of organizational purpose.

6. Select long-term objectives and grand strategies that achieve desirable options.

7. Develop annual objectives and short term strategies compatible with goals.

8. Implement strategic choices by means of budget allocation of resources in which the matching of tasks, people, structures, technologies, and reward systems is emphasized.

9. Evaluate the success of the strategic process as an input for future decision making (Pearce, J. A. & Robinson, R. B., 1991).

The basic components of the models used to analyze strategic operations are very similar. These models used by academics that do reflect such similarity are typically developed through consulting experiences and are intended for educational or business use. Those include the work of

External Environment

Feedback

Critical
Thinking
&
Theory
Development

SWOT: External &
Internal Analysis

Company Profile

People

Strategic Analysis &
Choice

Control & Evaluation

Mission Statement
Organizational Purpose

Long Term
Objectives

Grand Strategies

Systems
&
Processes

Execution
&
Implementation

Annual
Objectives

Operating
Strategies

Internal Environment

Feedback

Institutionalize the Strategy

Figure 4. The Strategic management model.

Stevenson (1976), Rogers (1975), and King & Cleland (1978).
Models recommended for use by small firms include those of
Gilmore (1971) and Steiner (1970), and these are identical
to those recommended for larger firms. A Model that
describes approaches for strategic options would contain
elements similar to those included in the researchers model
(Figure 4); see also Pryor (1964) on mergers, Steiner (1964)
on diversification, TenDam (1986) for governmental agencies.

Our postmodern society is facing rapid and turbulent
change (Bergquist, 1993). Systems and solutions that have
worked in the past no longer seem to meet the challenges of
the future. New models must be conceptualized and

ORGANIZATIONAL PURPOSE

PROCESSES

**People
{Motivation &
Reward}**

Structures   **Systems**
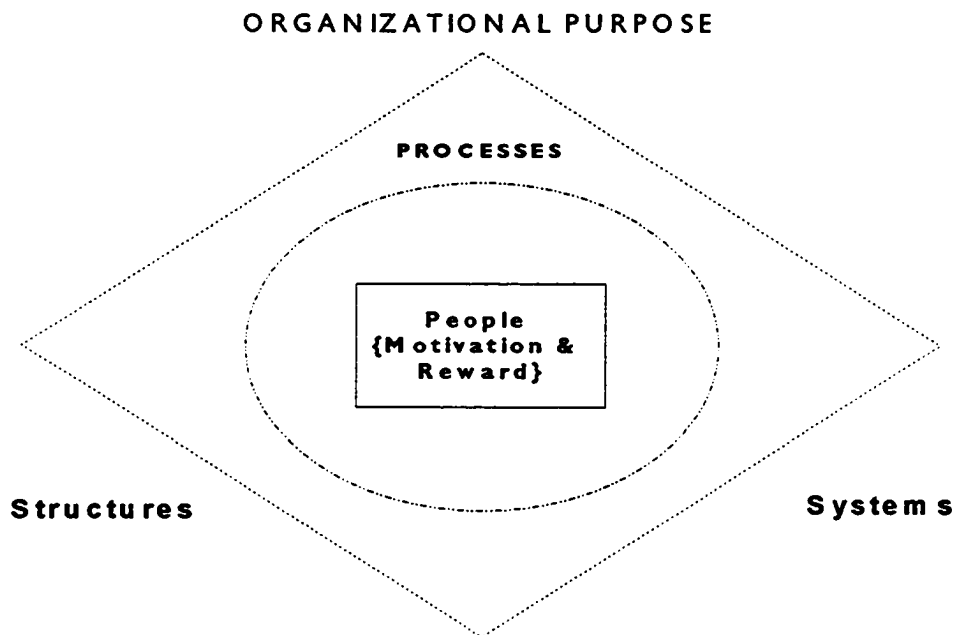
Figure 5. Organization Stratagem - Strategic & Tactical.

constructed. Globalization toward a unified world market, rapid technological change, networked information systems, and the shift to personal responsibility within the organization create a turbulent operating environment. The paradigm of purpose, process, and people is the foundation of this organizational configuration, the Organization Stratagem as shown in Figure 5. Strategic in its purpose, tactical in its operation, and guided by value-based management ideals.

The Models

This research will examine what organizational characteristics are needed for effective performance. The underlying assumptions of contingency research invoke a reductionist approach by which researchers seek to understand the behavior of a social entity by separately analyzing its constituent's parts. Organizations are treated as loosely coupled aggregates whose separate components may be adjusted or fine-tuned incrementally once weak constraints have been overcome (Meyer, Goes, & Brooks, 1993).

Configurational inquiry represents a holistic stance, where social systems are seen as tightly coupled amalgams entangled in bidirectional causal loops. There is a great deal of nonlinearity and the organization is faced with discontinuous change punctuating periods of stability. A

strategic approach will only work if it is embedded in an appropriate pattern of coherent organizational processes and structures. Chaos theorist call these patterns "strange attractors" by which organizational theorists call them configurations.

In support of the research issues a review of the current literature for recently published empirical studies focusing on the work of Mintzberg (1979) and Miles and Snow (1978) have been examined. Their research on the relationship between organizational configuration and performance has provided an intellectual foundation for the principles articulated regarding the validity of this configuration, the Organization Stratagem.

Methodologies useful in predicting effective performance based on organizational structure were reported in a series of papers presented in the Academy of Management Journal (1993). The Special Research Forum on Configurations focused on configurational approaches to organizational analysis. It focused on the history of configurational thinking, distinguishing between the contingency approach and the configurational approach, and highlighting the research of five empirical studies that comprise the special research forum.

Doty, Glick, and Huber (1993) indicated that classifying organizations by their designs and contexts, such as those of Mintzberg's (1979, 1983) typology, was not

useful for making predictions about the relative effectiveness of the organizations in this study. Mintzberg's theory identifies five ideal types of organizations: simple structure, machine bureaucracy, professional bureaucracy, divisionalized form, and adhocracy. An organization that approximates one of these ideal types is hypothesized to be more effective than other organizations, especially when its context fits the ideal type. For example, young organizations with simple but dynamic environments and simple technologies will be more effective if they rely on simple structure and internal coordination via direct supervision. These young organizations will be less effective if they rely on bureaucratic structure and internal coordination via formalization or standardization.

The empirical work seems to provide moderate support for Mile and Snow's theory, which identifies four ideal types of organization: the prospector, the analyzer, the defender, and the reactor. Several studies have concluded that organizations classified as prospectors, analyzers, and defenders are generally more effective than reactors and that the relative effectiveness of the types varies with context.

The predictive power of the composite model, with respect to each of the five individual dimensions of effectiveness, can be assessed by examining the canonical

analysis in the study. This finding suggests that Mile and Snow's theory is a good predictor of the extent to which an organization is successful in managing human resources. This supports Zahra and Pearce's (1990) observations that the managerial philosophies of an organization regarding human capital are important and should not be overlooked in future tests of the theory. A major conclusion from the study is that fit among contextual, structural, and strategic factors is a relatively powerful predictor of organizational effectiveness.

Configurational theories are developed using an ideal-type construct to represent complex synergistic effects that arise from specific configurations of organizational attributes. Researchers attempting to test configurational theories must recognize and accurately model the ideal types incorporated in configurational theories to ensure that their tests of the theories are valid. Further, future theorists should include a complete set of factors in their descriptions of ideal types. At a minimum, ideal types should be described in terms of the imperatives that drive organizations toward certain configurations (Miller, 1978).

The important implications of this research suggest that configurational theories are developed using an ideal-type construct to represent complex synergistic effects that arise from specific configurations of organizational attitudes. Fit is conceptualized as the consistency among

contextual, structural, and strategic factors, a conceptualization consistent with many organizational theories.

Equifinality is an assumption that is implicit in configuration theory that identifies multiple ideal types of an organization that maximizes fit and effectiveness. Four such models are ideal type fit, contingent ideal types fit, contingent hybrid types fit, hybrid types fit(Doty, Glick, & Huber, 1993. pp. 1201-1204). The quantitative models developed in this process are viable for testing configurational theories and may have relevance in showing complex fit and equifinality assertions associated with this research study.

These techniques analyze performance capabilities based on structure, but do not indicate what strategy would be most effective in the marketplace. The second study by Ketchen, Thomas, and Snow (1993) examined organizational configurations and performance from both an inductive and deductive approach.

> It is clear from this study and others that longitudinal designs are essential for using the configurational perspective to explain and predict performance. . .factors such as the extent of an industry's fragmentation, the nature of the industry's product-service offering, and the influence of international competition might dictate that the nature and extent of performance differences across configurations do not become apparent until well after an industry's structure has been established or major environmental jolts have been felt. As more is learned

about the specific strategies that succeed in
particular environments, the development and testing of
sophisticated theoretical models to predict appropriate
lags could help to further clarify the relationship
between organizational configurations and performance
(p. 1307).

Table 1
Constructs and Variables Used to Define Strategic Groups, Production or Operations

Construct	Variable	Representative Study	
Production or operations			
Capacity	Number of plants	Hatten & Schendel	1977
	Newness of plants	Hatten & Schendel	1977
	Average capacity	Hatten, Schendel & Cooper	1978
	Quantity of physical output	Tremblay	1985
	Capital Intensity	Hatten & Schendel	1977
	Cost efficiency	Kim & Lim	1988
	Concern for low cost	Robinson & Pearce	1988
	Total costs/total assets	Lawless & Tegarden	1991
	Inventory levels	Dess & Davis	1984
	Inventory turnover ratio	Harrigan	1985
	Age of average inventory	Harrigan	1985
	Inventory intensity	Fiegenbaum, Sudharshan & Thomas	1990
Capabilities	Length of production cycle	Dess & Davis	1984
	Operating efficiency	Dess & Davis	1984
	Product quality control	Kim & Lim	1988
	Procurement of raw materials	Dess & Davis	1984
	Ability to special manufacture	Robinson & Pearce	1988
	Technological capability	Mascarehas	1989
	Technological focus	Mascarenhas & Aaker	1989
Research & Development	Current R&D spending	Cool & Schendel	1987
	R&D capital stock	Cool & Schendel	1987
	R&D orientation	DeBondt, Sleuwaegen & Veugelers	1988
	R&D intensity	Hergert	1987
Finance	Debt	Hatten, Schendel & Cooper	1978
	Minimize outside financing	Dess & Davis	1984
	Current ratio	Figenbaum, Sudharshan & Thomas	1984
	Quick ratio	Sudharshan, Thomas & Figenbaum	1991
	Debt-to-equity ratio	Baird, Sudharshan & Thomas	1988
	Receivables	Lawless & Finch	1989
	Receivables intensity	Fiegenbaum, Sudharshan & Thomas	1990
	Cost of good sold	Lawless & Finch	1989
	Financial leverage	Fiegenbaum & Thomas	1990
Capital Investment	Mergers & acquisitions	Hatten, Schendel & Cooper	1978
	Net Investment	Primeaux	1985
	Security price movements	Ryans & Wittink	1985
	Types and amounts of Investment	Amel & Rhoades	1988
	Total net assets/sales	Hergert	1987
	Asset profile	Amel & Rhoades	1988
	New capital expenditures/assets	Lawless & Tegarden	1991

Table 2

Constructs and Variables Used to Define Strategic Groups, Marketing Variables

Marketing

Pricing	Price	Hatten & Schendel	1977
	Products in high-price market segment	Dess & Davis	1984
	Products in low-price market segments	Robinson & Pearce	1988
	Competitive pricing	Hawes & Crittenden	1984
	Marketing expenditure	Hatten, Schendel & Cooper	1978
	Advertising intensity	Oster	1982
	Agressiveness of promotion	Hawes & Crittenden	1984
	Display approach	Hawes & Crittenden	1984
	Advertising	Namiki	1988
	Innovation in marketing techniques	Robinson & Pearce	1988
	Brand identification	Namiki	1988
Scope of activity	Number of brands or products	Hatten & Schendel	1977
	Market share	Hatten & Hatten	1985
	Geographic scope	Ramsler	1982
	Serving special geographic markets	Dess & Davis	1984
	Breadth of scope	Cool & Schendel	1987
	Commitment to specific market	Cool & Schendel	1987
	Broad range of products	Dess & Davis	1984
	Developing or refining existing products	Dess & Davis	1984
	Promotion to specific markets	DeBondt, Sleuwaegen & Veugelers	1988
	New product development	Kim & Lim	1988
	Interdependence of shared markets	Baucus	1987
	Sales	Ramsler	1982
	Differentiation	Lahti	1983
	Nature of product group	Hawes & Crittenden	1984
	Types of customer served	Frazier & Howell	1983
	Emphasis on customer service	Robinson & Pearce	1988
	Product strategy	Cool & Schendel	1987
	Quality of products & services	Hawes & Crittenden	1984
	Marketing orientation	Mascarenhas	1989
Distribution	Distribution	Hatten & Schendel	1977
	Control of channels of distribution	Dess & Davis	1984
Organization & Management	Size	Porter	1978
	Degree of vertical integration	Newman	1978
	Experienced & trained personnel	Dess & Davis	1984
	Reputation within industry	DeBondt, Sleuwaegen & Veugelers	1988
	Employee productivity ratio	Harrigan	1985
	Homogeneous use of labor & capital	Baucus	1987
	Institutional function	Fombrun & Zajac	1987
	SBU sales/corporate sales	Herbert	1987
	Diversification	Dowling & Ruefli	1991
	Ownership	McNamee & McHugh	1988
	Activity	McNamee & McHugh	1988
	Specialization	McNamee & McHugh	1988
	Type of enterprise	Kumar	1990
	Relative importance of functional strategies	Nath	1988
Industry structure	Firm concentration	Hatten & Schendel	1977
	Industry advertising intensity	Hatten, Schendel & Cooper	1978
	Environmental posture	Fombrun & Zajac	1987
	Forecasting market growth	Dess & Davis	1984

Table 3
Constructs and Variables Used to Define Strategic Groups,
Marketing Variables

Sales	Sales growth	Dess & Davis	1984
	Average order size	Frazier & Howell	1983
	Sales per salesperson	Frazier & Howell	1983
	Sales per employee	Frazier & Howell	1983
	Composition of sales	Frazier & Howell	1983
	Inflation-adjusted return on sales	Cool & Schendel	1987
	After-tax return on total sales	Robinson & Pearce	1988
	Ratio of sales to total assets	Lawless & Finch	1989
	Return on sales	Lewis & Thomas	1990
	Sales per $100 market value of stock	Lawless & Finch	1989
	Incidence of new product failures	DeBondt, Sleuwaegen & Veugelers	1988
	Sales	Boeker	1991
	Combined ratio	Fiegenbaum & Thomas	1990
	Risk of combined ratio	Fiegenbaum & Thomas	1990
	Risk adjusted for combined ratio	Fiegenbaum & Thomas	1990
Equity & Investment	Return on equity	Porter	1973
	Return on net worth	Frazier & Howell	1983
	Return on investment	Lewis & Thomas	1990
	Earnings per share	Lewis & Thomas	1990
	Cash flow per share	Lewis & Thomas	1990
	Dividend yields	Lewis & Thomas	1990
	Return on capital employed	Lewis & Thomas	1990
	Weighted index of growth in price/earnings ratio	Lewis & Thomas	1990
Assets	Return on Assets	Dess & Davis	1984
	Total asset turnover	Frazier & Howell	1983
	Operating income on assets	Hatten & Hatten	1985
Margin & Profit	Price cost margin	Newman	1973
	Net profit before taxes	Frazier & Howell	1983
	Industry profit share	Hatten & Hatten	1985
	Relative profit share	Hatten & Hatten	1985
	Revenue per unit	Tremblay	1985
	Profitability	Nath	1988
	Pretax income per $100 market value stock	Lawless & Finch	1989
	Net income per $100 market value of stock	Lawless & Finch	1989
	Average profit margin	Kumar	1990
Market share	Market share	Nath	1988
	Weighted market share	Figenbaum & Thomas	1990
	Weighted segment share	Cool & Schendel	1987
	Risk of market share	Fiegenbaum & Thomas	1990
	Risk of weighted market share	Figenbaum & Thomas	1990
Overall	Respondent rating of overall success	Hawes & Crittenden	1984
	Attractiveness for affiliation	Pegels & Sekar	1989
	Occupancy rate of hospital	Nath	1988

The initial studies of strategic groups used only a few variables with later investigations offering a more comprehensive set of configurational attributes, including manufacturing, marketing, financial and industry characteristics. As shown in Tables 1 - 3, most strategic group studies are built on these early categories. The use of multiple variables requires the use of statistical methods such as cluster analysis and multiple discriminant analysis.

When taken together these studies set the agenda for much of the configurational research in strategic management by (a) offering configurations (strategic groups) as a possible means of explaining intraindustry performance variation, and (b) outlining the types of variables and decision algorithms that could be used to define industry-specific configurations. Based on the tenets of the IO paradigm, configurational links to performance were seen as determined by industry, not organizational attributes. This validated the mapping of industries in terms of unique configurations and a posteriori examination of the relative performance of configurations became a legitimate empirical task (p. 1261).

Increasing global competition, volatile technological change, shifting markets, and increasing capital needs can overcome an organization's ability to adapt to the environment and thus force a decline in performance. If

there is a single word for the environment it is volatile.
The response of the organization therefore must be one of
versatility. That is the essence of the strategic model
this research proposes, the Organization Stratagem, a value-
based learning organization that has the ability for rapid
response to changing markets.

Turnaround Processes and Strategies

There is consensus in the literature as to a broad
definition of turnaround as offered by Schendel, Patton and
Riggs (1976) who define it as a "decline and recovery in
performance" (p. 3). Bibeualt (1982) defines the concept as
a substantial and sustained positive change in performance.
Hofer (1980) suggests it as a situation where some firm
experiences a major decline in performance followed by a
marked improvement.

Strategic turnarounds involve a change in the way the
firm competes by either entering new businesses or gaining
market share in its present business. Such upturns are
focused on long-term growth and are effected through tactics
such as acquisitions, increases in marketing efforts,
increases in R&D, and/or increases in new plant and
equipment (Hofer, 1980; Hofer & Schendel, 1978). There are
also those firms who reduce certain market share to focus on
niche markets and unique capabilities.

Operating turnaround strategies are designed to improve

short-term performance through a focus on operational measures (e.g., actions to increase revenues, actions to decrease assets, actions to decrease costs, or some combination thereof) which are primarily based on efficiency gains. Hofer (1980) offers four types of operating strategies (a) revenue generating, (b) cost cutting, (c) asset reduction, and (d) some combination of these. The strategic path taken is dependent upon the distance to the break-even point. As an example, if a firm's sales are within 60% to 80% of break-even, it is suggested that the firm engage in cost cutting strategies. Asset reduction or revenue generating strategies are appropriate when sales are between 30% to 60% of break-even, the choice depends upon the long-term viability of the firm.

A second typology of principal types of turnarounds as offered by Bibeault (1982) is (a) management process, (b) economic or business cycle, (c) competitive environment, (d) product breakthrough, and (e) government-related. It is suggested that the management process turnaround type is the most common and only "real" type of change. Of the CEOs surveyed in this research, only 9% felt that decline was the result of factors outside management control (p. 25). The reasoning here is that if management decisions are the cause of decline, then management corrections would be needed to accomplish a successful organizational reorientation. The "economic or business style" turnaround is the result of

cyclical economic improvements in the industry. While the "competitive environment" turnaround type is also the result of improved environmental conditions, these improvements are not cyclical. A few companies can capitalize on "product or technology" breakthroughs. In addition, a few companies improve performance based on procurement of government contracts or a major shift in some government regulation.

Empirical Identification of Turnaround Situations

There are several methodologies for determining the phases of each stage of the turnaround process. Schendel et al. (1976) and Schendel and Patton (1976) identified turnaround firms as those that had experienced at least four years of uninterrupted decline followed by at least four years of an increase. The increase need not be continuous in net income (NI). Growth in net income was normalized by using 1951 gross national product (GNP) as the base year. Income growth as a percent of GNP growth was used in an attempt to find relative change. In their sample of 54 firms, the average decline phase (i.e., sub-GNP growth) lasted 5.2 years, with a range of 4 to 10 years. The upturn phase (i.e., greater-than-GNP growth) averaged 7.7 years, with a range of 4 to 16 years. The average rate of decline was -15% normalized income and +15% for the upturn phase.

Bibeault (1982) included 81 firms in his sample where each had at least three years of sustained decline in net

income and an upturn phase of at least years. Each firm had
severe earnings decline or had sustained losses in income of
80% or more. The author does not specify the threshold of
return necessary to determine a successful turnaround firm.

Another study of turnaround used return on investment
(ROI) as the performance criterion (Hambrick & Schecter,
1983). Firms were included in the turnaround sample if ROI
was below 10% for two years followed by two years where ROI
was at least 20%.

Financial based performance measures are necessary for
researchers to help assess the quality of a firm's
adaptation. These measures include return on equity (ROI),
return on sales (ROS), earnings per share, and net income,
which have been the dominant model in empirical strategy
research (Venkatraman & Ramanujam, 1986). Turnaround
researchers have adopted this model with the use of net
income or return on investment as the single performance
criterion variable.

The use of these criterion variables presents two major
problems for turnaround research. First, measures of
performance rooted in financial accounting include many
conceptual and practical measurement problems (Rappaport,
1986). Factors that contribute to the weakness of
accounting based financial measures of performance include
(a) the scope of accounting manipulation; (b) undervaluation
of assets; (c) single period historical measurements; (d)

distortions due to depreciation policies, inventory valuation and treatment of certain revenue and expenditure items; (e) short-term goal orientation; and (f) neglect of post period residual value (Charkravarthy, 1986; Dearden, 1969; Fisher, 1984; Fisher & McGowan, 1983; Hoshower & Crum, 1986; Kirchoff, 1977; Rappaport, 1986; Reimann, 1987, 1989). Second, the use of these measures has increased the difficulty of establishing a benchmark in downturn and upturn phases that would identify turnaround situations.

Bibeault (1982) asserts that "a stagnating or declining company seems to first need a deepened threat or shock to spur it to action. Steadily poor performance, so long as it does not develop into a crisis, seems to be tolerated" (p. 74). While crises are often suggested as necessary for turnaround activities to begin, few studies have incorporated this antecedent into the data set.

Variables Examined in Previous Research

There are a variety of methodologies and variables examined in previous turnaround research. Bibeault (1982) sent 320 firms a 50-item questionnaire, which resulted in a 25% response rate (81 firms). Change in top management to effect turnaround, reasons for decline, organizational characteristics of turnaround leaders, internal control problems, and key competitive factors were the variables examined.

Schendel and Patton (1976) used COMPUSTAT data to identify turnaround firms where 36 turnaround and 36 nonturnaround firms were matched on the basis of four-digit SIC code classifications. Matching along other variables such as size (i.e., income, total assets, total unit sales, total employees, relative market share, extent of product line, technology employed, etc.) was not reported by the authors. Their research indicates that turnaround firms benefit more from increased sales and the nonturnaround firms seem to benefit form efficiency actions.

Content analysis was conducted on secondary data sources (e.g., Moody's, The Wall Street Journal, etc.)(Schendel et al., 1976). In this study the researchers wanted to identify significant environmental events and management actions that contributed to downturn and upturn characteristics. Their findings suggested seven major categories of events that contribute to a firm's decline:

1. increasing costs,

2. demand declines,

3. declining revenues,

4. strikes,

5. increasing competitive pressures,

6. management problems, and

7. marketing problems.

They argue that the downturn phase was usually a combination of events coupled with the firm's inability to

monitor changes. The upturn phase was characterized by eight major categories of actions:

1. organization and management change,

2. marketing program changes,

3. major plant expenditures,

4. diversification - product,

5. diversification - geographic,

6. efficiency increases,

7. divestiture, and

8. vertical integration.

The authors contend that while "efficiency problems predominated as causes of downturn, . . . [the] upturn phase was brought about by proportionately more effort placed on changes in corporate strategy" (Schendel et al., p. 11).
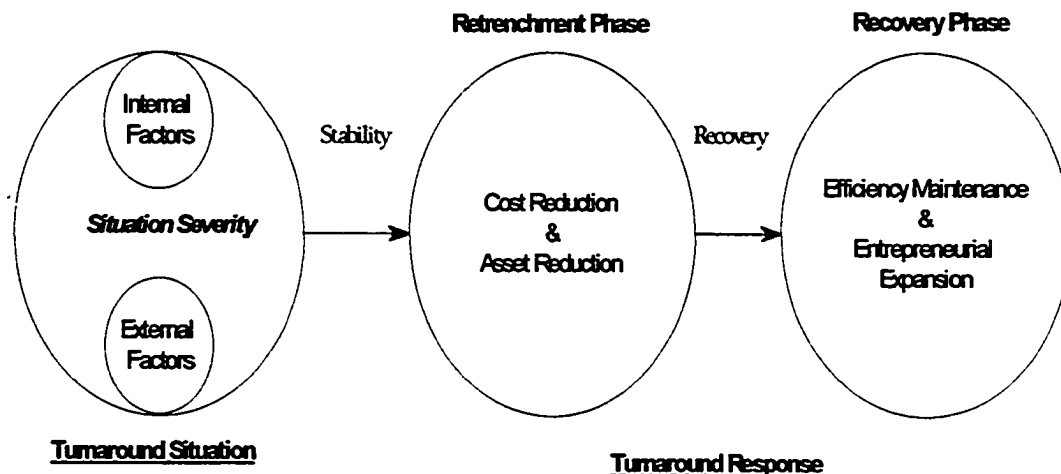
Figure 6. A model of the turnaround process.

The turnaround response referred to actions taken by a firm in response to a decline in performance over a period of time, usually defined as two successive years of declining ROI and ROS. The overall response is considered to consist of two overlapping stages; (a) the retrenchment stage, and (b) the recovery stage (Robbins & Pearce, 1993). See Figure 6 for a conceptual representation of these actions.

Retrenchment stage

The initial response to turnaround situations for many firms consists of reductions in costs and assets. The primary objective for these reductions is to stabilize the performance decline. A retrenchment response, if present, is observable as changes in income and balance sheet accounts. Objectives include (a) survival, and (b) positive cash flows. Among the Strategies are (a) liquidation, (b) divestment, (c) improve operational efficiency, (d) product elimination, and (e) layoffs.

Recovery Stage

As a firm achieves stability it begins to emphasize a set of activities that represent the implementation of the firm's long term strategy. The intensity of the recovery response relates to the degree of strategy change present in the overall recovery response. Objective are (a) long term

profitability, and (b) growth in market share. Among the Strategies to be considered are (a) market penetration, (b) reconcentration and segmentation, (c) new markets, (d) acquisitions, and (e) new products.

III. RESEARCH METHODOLOGY

Hypothesis Testing Methodology

Whenever a relationship exists between competencies within a particular organization configuration and a set of variables, it is possible to estimate by means of multiple regression the competencies an organization may be expected to demonstrate. Developing quantitative models of a theory is a necessary step in the theory development process where the quantitative modeling process is merely a translation exercise (Blalock, 1969). In practice, the ambiguous assumptions are often identified in the modeling process. Such identification forces the model builder to develop new theory to clarify these ambiguous assumptions. The modeling process clarifies and refines the logic of the model. The quantitative model then serves as a more precise statement of the theory that can be more unambiguously falsified. When the quantitative model is not an accurate translation of the logical arguments in the theory, the model neither validly represents the theory nor adequately tests it (Venkatraman, 1989). The critical issue is to develop a model that accurately represents the logical structure.

Exploratory Research Design

This research design will link qualitative techniques with quantitative analysis, see Figure 7 for a
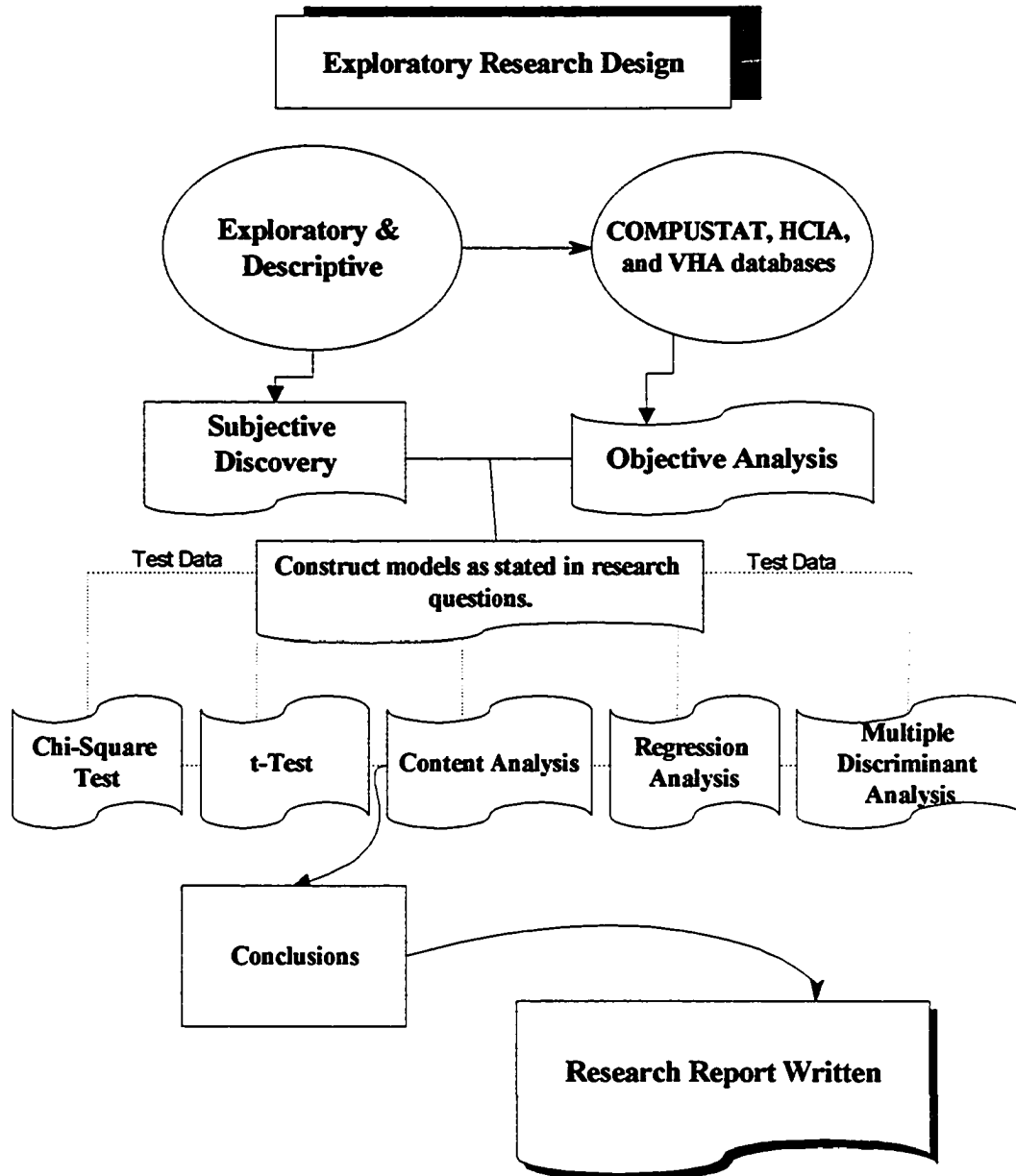
Figure 7. Research study algorithm

flow chart of the process. This research study is

exploratory in concept as it will examine methodologies and

techniques for analysis, validation, and valuation of
organization configurations. The research is descriptive in
that the literature search will examine the formation of an
emergent strategic group, the integrated delivery system,
within the health care industry.

In a descriptive approach to research the paramount
objective is to understand the meaning of an experience:

> To understand situations in their uniqueness as part
> of a particular context and the interactions there.
> This understanding is an end in itself. So that it is
> not attempting to predict what may happen in the future
> necessarily, but to understand the nature of that
> setting. What it means for participants to be in that
> setting. What their lives are like. What's going on
> for them? What their meanings are. What the world
> looks like in that particular setting, and the analysis
> to be able to communicate that faithfully to others who
> are interested in that setting. . . . The analysis
> strives for depth of understanding. (Patton, 1983)

Organizational Change Analysis

The researcher will test organizational change in
response to performance decline, and success at turnaround,
by examining performance results correlated to CEO
replacement. The data search will focus on replacement of
the CEO during the retrenchment phase in time-2, time-3, or
time-4 (year two through year four). The criteria for the
identification of change included a statement to that effect
in the supporting literature. This search process used (a)
annual reports, (b) 10k reports, (c) letters to
stockholders, (d) Standard and Poor's Register of

<u>Corporations, Directors, and Executives</u> (1980-1994), and (e)
Dun and Bradstreet's <u>Reference Book of Corporate Management</u>
(1980-1994) to confirm management changes.

The use of content analysis is a method of analysis and
observation. This research uses a straightforward approach
by examining the data for a specific key identifier, top
management change. However, it can be used to examine
multiple variables that can then be correlated to the
quantitative financial data. "Instead of observing people's
behavior directly, or asking them to respond to scales, or
interviewing them, the investigator takes the communications
that people have produced and asks questions of the
communications" (Kerlinger, 1964, p. 544).

<center><u>Sample and Data</u></center>

<u>Performance benchmark (PBM)</u>

The data used to construct the (PBM), will describe
organizations in a single industry where there is (a)
consensus with respect to the environment, (b) reliable
longitudinal data with performance measures identified in
the literature, and (c) previous research had identified the
presence of organizational configurations (Ketchen, Thomas,
& Snow, 1993). Given these requirements, the hospital
industry was chosen. Comparative performance measures will
be tested between strategic groups to analyze performance
and test the hypotheses.

Before 1983, most hospitals were reimbursed the full costs of patient care from third-party payers. The Medicare Prospective Payment System, with its Diagnosis Related Groups (DRGs), established in October 1983 and fully implemented by 1986, set predetermined and fixed payment levels for 468 groups of medical conditions known as DRGs. If the health care organization (HCO) provided care below the various price limits, they could keep the difference as profit. This legislation was a major environmental shock to the hospital industry.

Major employers faced with the prospect of higher employee benefit costs began to look at managed care programs such as health maintenance organizations (HMO), (Shortell, Morrison, & Friedman, 1990). The resultant activity caused a 12% drop in national occupancy rates and a downward shift in operating margins (Guterman & Dobson, 1986). The hospital population shrank from 7,200 to 5,200 hospitals within a six-year period. Along with consensus about the hospital environment and reliable longitudinal data, there also exists prior evidence of organizational configurations within the industry (Goes & Meyer, 1989), and differential performance between groups (Pegels & Sekar, 1989).

Data was collected for the years 1989 through 1994. The data used for non-VHA hospitals describes the general population of not-for profit community based hospitals

delivering medical acute care. This grouping contains single-entity acute care organizations as well as system-affiliated, integrated health care organizations. The data was sourced from a group of 52 performance measures using secondary data from 4,579 hospitals of 25 beds or more as contained within The Sourcebook (1995).

VHA refers to an organization that is an alliance of 1,200 not-for-profit acute care hospitals. The VHA, Inc. alliance contains both single entity acute care hospitals as well as integrated delivery systems of medical acute care and other sites of care outside the traditional hospital setting.

This emergent model of integrated systems in alignment with, or acting as, a risk-bearing entity is critical to the survival of acute care delivery entities. Hospital inpatient revenue will decline 30% by the year 2000 with the shift in business moving to the outpatient site of care environment. Physician visits will grow 5%, outpatient procedures will increase 15%, and physician office based surgeries will increase 66%. This information is based on data contained in the FTC's "Pink Sheet" as well as two data analysis companies, IMS and HCIA (Deloitte Touche) for industry analysis and projections.

This research study used information for VHA hospitals collected by VHA, which included more than 500 reporting organizations in its Data Comparison Reporting System

(DCRS). It is a national comparative data base designed to help identify ways to improve the hospital's financial and operational performance.

DCRS tracks over 2,500 financial, performance, department, and patient care unit indicators, which provide a summary of the health care organization's overall performance. This research study compared the data for the two populations of hospitals (VHA and non-VHA).

This research will test the hypotheses using the large sample test (n>30) of a hypothesis about a population mean (one-sample z-test) for data that describes the larger population of nonprofit hospitals. The z-test is a statistical procedure based upon sample data and probability theory used to decide whether the null hypothesis is a reasonable statement and should be supported, or if it is unreasonable and should be rejected.

For each type of hypothesis testing procedure, an appropriate test statistic can be calculated. This test statistic measures how close the sample value (such as a sample mean) has come to the hypothesized value (such as the population mean). The test statistic either follows a well known statistical distribution, such as the "z" or normal distribution, or a distribution specifically developed for a particular statistic, e.g., the Student's t-test.

The data describing the integrated delivery systems of nonprofit hospitals will use the Student's t-test for a

sample size that is less than thirty (n<30). The distribution of the t statistic was discovered in 1908 by William Sealy Gossett (1876-1937), the chief brewer at Arthur Guinness and Son Brewery, located in Dublin, Ireland.

Small samples were typical of Gossett's work at Guinness. So, in a now famous 1908 paper, The Probable Error of a Mean, Gossett noticed that "s" the sample standard deviation is an erratic estimator of the population standard deviation when the sample size is small. His paper presented the sampling distribution of a statistic now known as "Student t" and introduced small-sample estimation by means of the t-distribution family. His theory has proven to be fundamental to statistical inference as it exists today, not only in the subject of estimating a population parameter (confidence levels), but also in hypothesis testing.

The "predictor" population profile measures

The validation models (VMI & VMM) and testing of hypotheses four through six were constructed from data of publicly-traded firms contained in the COMPUSTAT databases. To generate valid conclusions regarding the general population of organizations (SIC codes), a valid cross-sectional sample population of such entities had to be defined and identified. The research examined sample populations from previous studies to build a disparate

grouping of organizations that faced similar operating and competitive conditions. To this group would be added similarly situated firms identified in the literature and business news. The use of financial ratios would give a common size analysis for all organizations in the study. The research design used financial variables to measure performance effects such as (a) turnaround situation severity, retrenchment, and reinvestment; and (b) the use of a longitudinal design with a 15 year time frame, with measurements at multiple points in time to capture the phases of the turnaround process. The methodology developed for this investigation was influenced by the limitations and recommendations from previous studies (Grinyer & McKiernan, 1990; Hambrick & Schecter, 1983; Moulton & Thomas, 1993; Schendel et al., 1976) on organizational turnaround.

This research examined a cross-sectional population of 60 organizations (i.e., SIC codes) identified in the UMI abstract database (1992-1995) as having successfully restructured. Previous studies (Brumagim & Klavans, 1994; Chakravarthy, 1986; Clapham, 1994; Moulton & Thomas, 1993) identified 72 firms within declining industries who used retrenchment strategies. These groups were combined to form a population sample of 132 organizations involved in turnaround and retrenchment activities. After reviewing the data a group of 97 firms were selected to form the population sample. The research used a refined model "of

turnaround responses to measure the transitions in the cost, asset, and activity variables in multiple and disparate turnaround situations," as suggested by (Robbins & Pearce, 1993, p. 305).

The next step was to identify turnaround success where firms had reversed a crisis and recreated sustainable firm value. Return on assets (ROA), return on sales (ROS), and return on invested capital (ROIC) were used to classify and measure retrenchment strategies. There were two parameters examined for inclusion in this study of tactical response to performance decline and turnaround.

1. Two successive years of increasing ROIC, ROS, and ROA followed by simultaneous declines of those same parameters.

2. Absolute simultaneous increases in ROIC and either ROS or ROA with a return to predownturn (time-1) levels of ROIC.

Venkatraman & Ramanujam (1986) measured these movements by trend analysis of ROI. This researcher suggests that ROIC better reflects the measurement of value creation. Reduction in costs are reflected in an increasing ROS% (where the reduction in costs of goods sold, SG&A, and depreciation impact ROIC). The ratio of net income to total assets measures the return on total assets after interest and taxes where the ratio is stated ROA = (net income)/(total assets). In asset retrenchment

the ROA% will increase as assets such as inventory and accounts receivable are reduced. The definition of ROIC is stated **ROIC** = (net income + interest)/(debt + equity), or stated as, **ROIC** = Return on Sales (ROS) X Capital Turnover (CT) *where* **ROS** = (CGS + SG&A + Depreciation) and **CT** = (Assets + inventory + working capital).

For this research the variables used to examine each organization are supported by previous studies (Clapham, 1994; Harrigan, 1980; Hofer, 1980; Robbins & Pearce, 1993).

1. The severity of decline (Altman Z),

2. Validate recreation of value (Market/Book value),

3. Measure downturns and upturns in performance (ROI and ROS),

4. Indicate degree of cost or asset retrenchment (ROA and ROS).

5. Overall value creation as measured by ROIC.

The points of data measurement for each organization were determined by four events: (a) the year of peak performance prior to a performance decline as measured by ROI, (b) the year of greatest value decline as measured by ROIC, (c) the year both asset and cost reductions cease as measured by the impact on ROA and ROS, and (d) the year firm achieves turnaround as reflected in a unity value, MkBk > 1, with a corresponding return to ROI at time-1.

Framing the data with these conventions allows the classification of organizations into groups of strategic

change behavior. The researcher empirically tested the impact of four key tactics.

1. Asset and cost retrenchment (ROS and ROA),

2. Cost retrenchment only (ROS),

3. Asset retrenchment only (ROA), or

4. Neither tactic used

To validate firms that reversed a decline in performance and had a successful turnaround, Tobin's Q was used to confirm a recreation of firm value (Tobin, 1969). Q value is defined as the capital market value of the firm divided by the replacement value of its assets. In identifying those firms who have turned around, the value of Q will have been restored to unity or above (Q >= 1). It is difficult for researchers to compute this ratio, so a proxy for Q will be used in this study. The ratio of market value of equity to book value of equity was found highly correlated with actual Q values (Varaiya & Kerin, 1987). Organizations included in this study have a market to book ratio greater than one (MkBk > 1) prior to the decline, exhibit a minimum steady two-year decline, and a minimum steady two-year increase. Those organizations that appear to have cyclical decline and increase patterns were rejected.

This model was used to test hypotheses four through six where these variables are also the foundation for the valuation models in Figure 25 and Figure 26. The elements

that validate performance also help to determine value creation (the paradox of statistics).

To test the absolute severity of the turnaround situation, a technique used to analyze this data set included an "indicator of failure" measurement produced by the Altman Z statistical test. Previous researchers have shown a failure in their research to include an objective measure of the performance crisis (Beaver, 1966; Hambrick & Schecter, 1983; Hofer 1981). The Z value is a resultant predictor value produced by the multiple discriminant analysis using financial ratios in the form of a multivariate linear equation.

The financial ratios used in the multiple discriminant analysis to determine the Z value and the linear equation to produce that value follow: The Altman Z value is derived from a multiple discriminant function with five independent variables.

$$Z = .012X_1 + .014X_2 + .033X_3 + .006X_4 + .0999X_5$$

where Z = discriminant score

X_1 = Working capital/total assets

X_2 = Retained earnings/total assets

X_3 = Earnings before interest and taxes/book value of total debt

X_4 = Market value of equity/book value of total debt

X_5 = Sales/total assets

The Z value identifies organizations headed for trouble (Beaver, 1966; Altman, 1968). The conceptual foundations of this analytical technique have been validated in previous research studies (Argenti, 1976; Bibeault, 1983; Chakravarthy, 1986). This technique can provide an early warning at least two to three years prior to a potential performance decline or bankruptcy. The Z value is used to identify firms that are at, near, or headed for a crisis situation. Research conducted by Chakravarthy (1986) argues that the Z factor is an excellent measure of performance with "excellent" companies displaying a significantly different Z score than "non-excellent" companies (p. 446).

This model is reported to have a 95% accuracy rate when ratios are calculated one year before bankruptcy, 79% when ratios are calculated two years before bankruptcy (Altman, 1968). At years three to five the performance indicators can suggest a performance decline. The model has shown usefulness as an indicator of performance trends.

In his research, Altman found that firms with a Z score greater than 2.99 were in no danger of going bankrupt, a Z score of less than 1.81 suggested a bankrupt candidate, scores between 2.99 and 1.81 were considered in the "zone of indifference." Altman and McGough (1974) suggest that a Z score of 2.675 is a practical cut off point.

Table 4
Variables for Performance Validation

Company Name	19/xx	19/xx	19/xx	19/xx	19/xx	19/xx
MkBk =	Market/Book (Market value of Equity to Book value of Equity)					
Z =	Altman Z value (uses five financial ratios)					
ROI =	Return on Investment					
ROIC =	Return on Invested Capital					
ROS =	Return on Sales (Cost reduction indicator)					
ROA =	Return on Assets (Asset reduction indicator)					

The reliability of the model variables in Table 4 is supported by previous studies (Clapham, 1994; Harrigan, 1980; Hofer, 1980; Robbins & Pearce, 1993) that identified these variables as measures to determine:

1. The severity of decline (Altman Z),

2. Validate recreation of value (Market/Book value),

3. Measure downturns and upturns in performance (ROI and ROS),

4. Indicate degree of cost or asset retrenchment (ROA and ROS).

5. The value created for shareholders (ROIC).

Retrenchment activities in turnaround, according to Goodman (1982) and Slatter (1984), extend from the onset of a turnaround situation until asset and cost reductions have ceased. The average retrenchment period being three years or time-3. Organizations not demonstrating asset or cost reductions at the end of two years or time-2, were classified as non-retrenchers.

and growth. The effectiveness of recovery and growth strategies can be quantified by examining the ROS and ROA metrics at time-3, time-4, and time-5. Here it is possible to suggest an entrepreneurial, return to growth recovery strategy, reflected in a greater % growth rate of ROS relative to ROA. An efficiency, operating recovery strategy reflects a greater % growth rate of ROA relative to ROS.

Valuation Model Index (VMI) and Valuation Management Model (VMM)

A methodology will be presented that will measure and guide value creation. The theory is grounded in the logic of creating a greater rate of return than the cost of capital. The model is more complex than the traditional return on investment (ROI) metric as it measures the effect of time, cash flows, and the cost of capital. The primary objective of any business is to create shareholder value, while all other objectives as they relate to the various stakeholders are secondary to that issue.

The analytical tools developed and presented in this research will aid the practitioner in the management of the enterprise, while academics will find additional opportunities for inquiry.

Organization Configuration: The Health Care Industry

The health care industry is in transition from a fee-for-service structure to a per member per month costing (or capitation). This evolving structure is that of a fully integrated health care delivery system.

> Integration has come to mean any hospital strategy
> to employ physicians, allow joint contracting between
> hospitals and physicians, and other joint hospital-
> physician effort or any combination of delivery
> capabilities and insurance risk assumptions. (VHA Inc.
> 1994, p. 15)

In this respect integration is about coordinating and managing the health needs of people across sectors of care and over the life of a patient. This research will examine the organization configuration and create performance benchmarks for a strategic group. That group is the integrated delivery system (IDS), a vertically and to some extent, horizontally integrated network of health care services operating within the health care environment.

The research question will center on the operational effectiveness of this emerging configuration compared against the larger population of traditional single entity acute care organizations. Hypotheses one to three will quantitate the effectiveness of the IDS against other organizational configurations. The data examined organizations within the VHA hospital alliance to determine if they are more effective than the larger population of all other similar organizations. Select operational performance

indicators of integrated and non-integrated health care organizations were compared to determine the success of these organizational configurations. The array of measures selected was from a group of 52 performance measures using primary operational data from 4,579 hospitals of 25 beds or more as reported in The Sourcebook (1995). It compared this data to similar data from organizations within the VHA alliance of community based not-for-profit health care organizations.

A descriptive analysis has been used in this research to develop the conceptual dynamics with an overview of the industry. The emergent paradigm is presented in this manner with an emphasis on current practice and future trends. Empirical performance data has been used to support the deductive configuration theory assumptions and hypotheses presented in this research.

Major Developments Shaping the U.S. Hospital Industry

The following bullet points outline major environmental factors that are influencing the market and speeding the trend toward consolidation.

1. Continued growth in health care expenditures and increase in the number of uninsured Americans along with an aging population.

2. Local restructuring of the hospital industry. Market forces have led hospitals to merge, acquire, and rapidly

enter into other affiliation and risk-sharing agreements with other hospitals, hospital systems, physicians, physician group practices and managed care organizations. The traditional barriers to industry consolidation have not restricted merger activity or prevented the development of multi-provider networks.

3. There is continued growth in the number of integrated delivery networks and greater diversification of services. Hospitals have continued to collaborate with other non-acute providers to develop integrated delivery networks that tie together outpatient and ambulatory care, home care, and subacute care, in their markets. This has resulted in dramatic growth in the outpatient, home, and subacute care markets.

4. Hospital executives have taken the lead in developing integrated networks and are adjusting to a number of financing and delivery system changes. Hospitals must continue to reduce costs, trim inefficiencies from their operations; manage and coordinate patient care more effectively, adapt to a new age of managed care and fixed payments while understanding the cost of their operations (development of cost accounting systems).

5. The continuing development of an industry firmly grounded in integrated, cost-effective, patient and community centered care. Over the coming years hospitals must improve community health services, develop better

outcomes measurement programs, and integrate and form new partnerships with other hospitals, doctors, insurers, and employers.

6. Consumer demand with their increased knowledge of health care delivery options.

Currently, 41.2% of all hospitals belong to a health care system, according to Deloitte & Touche. Within the next five years 81% of 1,191 survey hospitals suggest they will not be operating independently.

Vertical Integration Framework

The development of an integrated delivery system is a form of vertical integration that is a common diversification strategy (Porter, 1980). The key to how broadly integrated an organization should be is dependent upon the organization's strategic needs, the industry's traits, and internal attributes. The principle competitive advantages of integration include

1. Improved marketing and technological integration.

2. Control of the organization's economic environment.

3. Product line differentiation advantages.

There are several alternate vertical integration strategies, see Figure 8. The challenge is the organization's ability to assume the responsibility for upstream or downstream services (or supplies) that would have been purchased had they not been integrated. The

organization should outsource part of the risk of vertical integration to outside parties unless the strategic objectives require full integration.

A full integration strategy may be needed to attain corporate objectives regarding marketing and technological leadership. These vertical integration strategies are modified by deciding whether (a) to increase or decrease their breadth or degree of integration through acquisition or divestiture; (b) to build or not to build capacity to maintain existing degrees of internal transfer as transaction volumes and industry demand changes; or (c) to change ownership form or control of a vertical unit.

There exists four generic vertical integration strategies that seem appropriate under various conditions. Each of these scenarios represents differing degrees of internal investment and transfers and varying degrees of bargaining power with respect to adjacent industry segments. The strategies represent differing degrees of risk aversion, desires for control, and objectives for market-share, long-term profitability, or other forms of leadership that enhance wealth maximization (Harrigan, 1983, pp. 30-37). These four strategies are described below.

Full Integration

The fully integrated organization produces all their own requirements for a particular product or service

internally. This strategy is used when (a) organizations believe they can protect proprietary processes adequately from competitive espionage by integrating; (b) components must be engineered carefully and manufactured to fit an assembly precisely; (c) firms desire to supervise all stages of quality control tightly; and (d) interconnection (or coordination) gives integration competitive costs advantages. It works best when (a) price competition is fierce enough for diseconomies to matter; (b) no significant diseconomies are incurred with imbalance; (c) capacity expansions do not cause disequilibrium; (d) the organization enjoys cost advantages due to access to scarce resources, that offset any imbalance costs; and (e) access to outside market intelligence and technological improvements is not critical.

Taper Integration

These organizations rely upon outsiders for part of their requirements. They will produce or distribute part of their requirement internally yet still purchase or sell the remainder through specialized suppliers or distributors. These outside services though may come at a premium price or delegate the organization to a low priority customer status dependent upon bargaining power. This form of integration works best when (a) organizations can add substantial value to the materials they produce or distribute; (b) raw

materials or subcontractors are abundant; and (c) underutilized capacity does not incur meaningful diseconomies where the benefits outweigh the costs.

Quasi-integration

There does not exist 100% ownership of the adjacent business unit, yet they may consume all, some, or none of the outputs or inputs of the adjacent unit. The mechanism by which organizations control adjacent units (without owning them) can be highly variegated. Certain investments, however, will not fully control the joint venture, franchisee, or other quasi-integrated unit. This is a useful strategy when the risks of either technological or capital investment are high. Quasi-integration can yield integration economies and benefits at a lower ownership stake but this may come at a higher cost of managing the relationship.

Contracting (Outsourcing)

This approach is best used in highly volatile industries due to low capital startup requirements and the ease of entry this form of operations allows. It is critically important to properly draft documents that delineate responsibilities since virtually every function performed by the organization can be outsourced to another provider.

Phase of Industry Development

Breadth of Integration:
Which activities in adjacent industries to undertake (function)

Volatility of Industry Structure

Depth of Integration:
How many stages for each function undertaken (extent)

Generic Vertical Integration Strategies

Degree of internal Integration:
Full, Taper, Quasi, Contract

Strategic Objectives, Abilities, & Capabilities to Achieve

Form of Integration:
Wholly-Owned, Joint-Ventured, Franchise, Minority Posititon, etc.

Organizations Bargaining Power

Figure 8. Predictive variables in vertical integration strategies.

This strategy allows for the rapid formation of operating units that can be opportunistic in the market through rapid response and an ability to add or shed components as demanded by the marketplace. With a limited

investment of capital, the critical success factor is an innovative and creative approach to operations.

The phase of industry development relates to the perceived riskiness of demand conditions. These will change as an industry develops an infrastructure and as certain patterns of competition show greater success than others. Stable conditions favor higher degrees of internal integration while risky environments make joint ventures a more attractive option. In the early stages of industry formation integration activity is low. A high degree of successful integration occurs when the organization possesses

1. Monopoly conditions with respect to upstream or downstream industries.

2. Opportunities to limit competitive incursions by raising entry/mobility barriers.

3. Opportunities for cost advantages using technologies subject to integration economies.

4. Conditions of increasing concentration, and structural traits that reduce volatility.

A volatile industry structure creates less integration since this configuration reduces the mobility of the organization to respond to competitive threats. In turbulent industries where competitors must change tactics rapidly, a highly vertically integrated posture could reduce the organization's maneuverability. Under this scenario the

strategic tactic of outsourcing would be a viable strategy.

When an organization has bargaining power it can dictate prices, terms, and shipping schedules to suppliers and distributors. Contract terms that force suppliers to pay freight on their shipments and finance their inventories can be imposed. This power also will influence styling and promotional policies of downstream firms. The ability to extract information regarding market data and customers' preferences from distributors' sales representative is a strong leverage component. If an organization possesses bargaining power it will not need to be as highly integrated as competitors who cannot influence upstream or downstream industry participants.

Corporate strategy objectives must review integration policies to determine acceptable risk/return performance indicators. Levels of acceptable cash flows from the various business units must be determined. A plan to maximize synergies available from sharing resources must be formulated. The "Organizational Development" leadership must develop a strategic plan to retain mission critical personnel and other intangible assets through opportunities that arise from integration.

The business unit is likely to define objectives as (a) near-term profit maximization, (b) market-share targets, or (c) technology leadership objectives or other specialized niche positions. These should be reconciled with the

corporate objectives, competitive thrusts and leadership positions that are better suited to higher degrees of integration than are the business units pursuing one of the generic strategies of cost leadership, focus, and differentiation. The concept of differentiation is a strategy objective best controlled through the type of attention to inputs and distribution (including production) that an integrated posture provides.

The strategic integration development of the organization must consider the industry structure and demand characteristics of the vertical chain and the characteristics of the organization being studied. One must recognize the patterns that match strategy alternatives with the determinant variables.

This researcher suggests that the health care organization structure be designed with vertical integration of upstream and downstream operations with a horizontal integration strategy to broaden geographic coverage. This will maximize opportunity in the perspective operating environment.

The underlying assumption of this organizational configuration is that the entity is a system of processes and people united by organizational purpose. This strategic group is functioning within a structure based on an analysis of superior performance parameters of industry leaders. Analyze the successful strategies of market leaders and

devise a strategy that is innovative and focuses on a value discipline. Customers want more of those things they value. These specific value disciplines are (Treacy & Wiersema, 1995, pp. 88-98).

1. Operational Excellence
2. Product Leadership
3. Customer Intimacy

This strategy of integration is the foundation of the evolving health care environment.

Industry Overview

Economists and industry watchers agree that the current cost containment atmosphere in Washington will contribute to a slowdown in the double-digit annual growth rate of health care costs. The target is to rein in Medicare and Medicaid annual increases of 10% and reduce them to 7% for Medicare and 4% for Medicaid by the year 2002. This will greatly affect hospitals, physicians, nursing homes, and home health agencies (Zaldivar, in press, pp. E-1 & E-9).

Federal, state, and local governments accounted for 44% of the $884 billion the United States spent on health care in 1993. Government makes extraordinarily high payment distributions for Medicare and Medicaid. Depending on its service area, an HMO's capitated payments from HCFA can be more than $600 per month, far higher than the commercial HMO rate of $80 to $100. The highest payment is in the Bronx,

New York, where the HMO receives $678.90 per Medicare recipient per month. The lowest payment is $177.32 is for Fall River, South Dakota, according to Susan E. Palsbo, manager for Coopers & Lybrand's national health care practice in Washington, D.C. (cited in Wang, 1995).

Medicare and Medicaid alone made up 41% of spending on hospital care, 28% of spending on physicians' services, 61% of payment to nursing homes, and 54% of spending on home health services. The result of this will be a 14% reduction in government spending on Medicare programs over those seven years and a 18% reduction for Medicaid.

Alternate Care Market (ACM) data were collected by a telephone survey of 973 alternate care facilities conducted from December 1994 through January 1995 (IMS America, 1995). The survey objective was to collect information regarding key indicators influencing the medical/surgical supplies to the non-hospital market.

The market is considered to have seven segments which are broken down in Table 5:

1. Diagnostic Imaging Centers,

2. Dialysis Centers,

3. Freestanding Ambulatory Care Centers,

4. Freestanding Surgery Centers,

5. Home Health Agencies,

6. Nursing Homes, and

7. Physician Offices.

Table 5
Market Segments and Growth Projections

	1995% Growth	Rx (billions)	Med-Surg (billions $)	1994 Combined	1995 Projected	1996 Projected	
Acute Care	9.20%	$15.45	$20.95	$ 36.40	$ 39.75	$ 43.41	
NH + HH	16.50%	$2.59	$2.54	$5.13	$5.98	$6.96	
Phys Clinic	12.00%	$3.33	$3.57	$ 6.90	$ 7.73	$ 8.66	
Retail	16.30%	$40.99	$3.99	$ 44.98	$ 52.31	$ 60.84	
Totals		$62.36	$31.05	$ 93.41	$ 105.76	$ 119.86	
% Rx	67%	= share of total market					
% Med-Surg	33%	= share of total market					Source: IMS Data, 1995

	1995 % Growth	Number of	Med-Surg (millions $)	Critical Product Offerings	
Diagnostic Imaging	13.50%	1,856	$426.40	X-ray	
Freestanding Surgery	9.00%	1,727	$442.00	IV solutions, Gowns/drapes, Gloves,	
Ambulatory Care	12.00%	3,374	$300.30	Vaccines, Injectables, Paper & Gloves	
Home Health Agencies	14.50%	11,422	$1,494.00	Wound & Skin care, Urologics	
Dialysis	11.90%	1,020	$559.14	IV Solutions, Blood filters	
Nursing Home	16.50%	14,976	$1,052.10	Wound care, urologics, IV solutions, Pharmaceuticals	
Physician Office	12.00%	387,900	$3,572.00	Gloves, Paper products, Injectables, Plasma Products,	
Totals	12.77%		$7,845.94	Billion	

In 1993, medical/surgical supply purchases in all
market segments (hospital and alternate care) totaled $25.8
billion while pharmaceutical purchases totaled $36.7
billion. That breaks out to 41.3% of the total for
medical/surgical supplies and 58.7% for pharmaceutical
products. The physician office market was the largest
segment of the alternate care market, representing 48.6% for
all such expenditures. Between 1993 and 1994 the alternate
site market grew by over 16%, while hospital market growth
was trending down to 9.2%. In 1993, 4% of alternate site
medical supplies were purchased from the hospital by 1995,
that number is up to 5.3%. In 1993 there were 339,845

physicians in office-based practices.

Solo and group practices (three or more physicians) represented 92.3% of all such medical supply purchases in 1993. Solo practitioners spent the most accounting for approximately 48% of all supplies purchased in 1993 (on average $10,500 per physician per practice), yet their purchases declined 9% by 1995. Physician groups spent 43.9% in 1993 however, that figure rose to 46% in 1995. From a geographic perspective the South accounted for 44.1% of all physician supply sales in 1995, the Midwest was 27.6%, the West 19% and the East represented 9.3% (Figure 9).
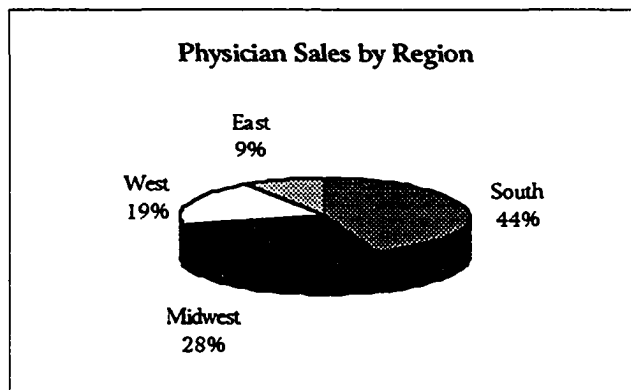
Figure 9. Purchases of supplies by geographic region.

Of the 393 physicians surveyed, 59.5% reported an affiliation with an Integrated Delivery System (IDS). Over one third (33.8%) did not have an affiliation with a system and 6.7% did not know. Over half of the respondents who are

affiliated with an IDS were members of 3 to 10 systems with 15% belonging to 11 or more.

Under this scenario the cost-conscious managed-care plans will thrive. As most of the nation's hospitals move from a fee-for-service structure to that of a managed care environment, there are several core capabilities that must be developed by these emerging integrated network (Jacobs, 1990, pp. 215-219).

1. Physician relationships and practice management issues are critical. Tactics and strategies must be developed to attract physicians to the network as reported in Physician Relations Advisor (1993).

2. Contracting. The ability to evaluate and negotiate different types of contracts from PPOs to full-risk is critical. An expert system for accessing, analyzing and forecasting the impact of these contracts and relationships must be developed (Johnson, 1991, pp. 26-30).

3. Managing Risks. The incentives between hospital, provider, and physician must be aligned with significant behavioral changes to drive efficiencies. The system must develop an internal infrastructure where providers assume and manage levels of risks (Grossman, 1990, pp. 24-31).

4. Transaction (HMO) systems. Data management is mission critical if the organization is to manage risk and utilization. A delivery system must build the capabilities to track data and change clinical processes (Kaplan, 1990,

pp. 20-24).

5. Identify and Develop Physician Leadership. The role
of the physician in key governance and organizational areas
to help build physician networks and manage care (Schneller,
1991, pp. 43-55).

6. Managing Costs. The traditional focus of health
care providers has been to maximize reimbursements.
Organizations must institute cost accounting and find out
what the true cost of service is. Managing costs will
require financial and operational skills along with
information systems to measure effectiveness.

Integration Variations: Hospital to Physician

According to a recent survey by Deloitte & Touche
(1995), 66% of 1,191 hospital respondents believe that it is
necessary for an acute care hospital to develop some form of
a physician-hospital organization (PHO). These PHOs combine
physician, hospitals, and other medical services into a
single entity that contract with third-party payers and/or
employers to provide a full spectrum of health care services
for capitated or prenegotiated fees. Half of the nation's
3°5,000 private practice physicians who operate within
187,000 office-based practices are currently members of
group practices. Additionally, 50% of all hospitals employ
physicians or are affiliated with physician group practices,
and approximately one of five U.S. acute care hospitals is

currently involved in some type of PHO. Table 6 shows

physician practice settings by percentage.

Table 6
Physician Practice Setting Data from the American Medical
Association (1995)

Segment	1993 Number of	1995 Number of	Growth %
Total Physicians	670,336	746,466	5.68%
Family Practice	52,362	61,159	8.40%
General Practice	19,323	20,289	5.00%
Internal Medicine	110,583	127,834	7.80%
Pediatrics	46,059	52,784	7.30%
OB/Gyn	35,619	39,181	5.00%
Total Primary Care	263,946	301,246	
Office-Based Physicians	398,854	445,121	5.80%
Institution-Based Physicians	271,482	301,246	5.48%
Office Practices		194,964	5.50%
Oncology Office Practices		2,200	5.50%
			% of Phys. Population
Solo Practice Physicians		59,717	8.00%
Partnership Physicians		37,323	5.00%
Group Practice Physicians		350,839	47.00%
HMO Physicians		134,364	18.00%
Other Physicians		164,223	22.00%
Total		746,466	100.00%

The driving force for development of integrated

networks is the recognition that significant changes in

service delivery must be achieved. These are needed to

improve the overall cost effectiveness and availability of

patient care. These changes will involve aligning incentives, improving communication, reducing clinical variation, and consolidating duplicated services and technology.

As a set of relationships among health care entities, integration exists in many varied forms between providers and between providers and payers. The development of a common system of health care delivery involves joint ventures, strategic alliances, mergers, and acquisitions. The various phases of integration include managed care contracting which involves capitated payments and alignment of financial incentives along with shared risk between providers. Research suggests that at least five different forms of integration exist (Fine, 1993).

1. Hospital to Hospital

2. Physician to Hospital

3. Provider to Insurance Company

4. Physician to Physician

5. Delivery System to Purchaser

The conceptual foundation of integration is based on an economic and operational concept. Various entities of the health care delivery system have the same interest and objectives. Full integration means (a) incentives must be aligned among all entities; (b) risk must be shared and managed by all entities of the delivery system; and (c) separate revenue centers for hospitals, physicians, and

insurers are eliminated as part of the economic alignment.

Market Factors

The marketplace is increasingly defining the expectations of both health care delivery and related cost containment initiatives. Success for the provider in operational efficiency translates to effective drug and supply utilization management for the payer. This integration of health care delivery demands a proactive rather than a reactive approach to the market where incentives are aligned and risks are shared (Hurley, 1993). Recent analyses by VHA of successfully integrated systems suggest strategies that are innovative and entrepreneurial in relation to the opportunities presented. The following strategies are driving operational efficiencies (VHA, Inc., 1995, pp. 15-19):

1. Emerging payers direct patients into exclusive provider relationships.

2. Health care purchaser groups develop and employers gain market power.

3. Managed care networking occurs and a certain degree of exclusivity develops (horizontal integration).

4. Physicians consolidation into medical groups (horizontal integration).

5. Overcapacity in hospital-based care (Anderson, 1992).

The competitive and environmental factors that define the need for change are either drivers or indicators of change in the health care market. These nine market factors provide insight regarding health care expectations (Beckham, 1993, pp. 55-63).

1. HMO penetration: This is measured as the percentage of patients controlled by HMO payers versus total commercial market payers.

2. Public policies debate: The role of government is dynamic and legislation can take an extended period of time to complete the legislative process. Reform may distort the effectiveness of market dynamics.

3. Purchaser concentration and involvement: This reflects the degree to which health care purchasers have united and established the market price for health care. As buyers are consolidated, pricing strategies become established around large group pools.

4. Per employee or per member per year health care cost: As managed care penetration increases, this measure will reflect the cost efficiency of the marketplace. This cost methodology challenges the traditional commercial products.

5. Inpatient utilization rates: This measure suggests the trend of care as it moves from an inpatient basis as measured by days per 1,000 of the population to an outpatient basis.

6. Hospital capacity: This reflects the availability of inpatient capacity.

7. Physician mix: This is measured as both the number of specialty and primary care physicians per 1,000 population and the balance between specialties and primary care.

8. Network exclusivity: This reflects the degree of exclusivity for both physicians and contracts that the integrating organization has with the various payers.

9. Physician practice structure: This suggests the type of economically viable organizational structure for the particular operating environment. It can be measured by the number of primary care physicians in practice groups of five or more and by the percent of physicians in practices of twenty-five or more.

These nine market factors give quantifiable measures that produce insight to the degree that the market is expecting integration. A scenario analysis using this data would be useful in identifying the threats and opportunities for physicians, hospitals, and insurers (Cleverly & Harvey, 1992). The information contained in Table 7 shows the projected growth and market segment size for the health care industry. This data quantifies the scope of market potential and should be considered when conducting a scenario analysis. A recent study by Wade (1993) supports the consistent widespread beliefs about the effect of aging

on the health care sector, for example, that aggregate expenditures will increase as the population ages. The 1980 data shows that 11% of the elderly population accounted for 31% of all personal health care expenditures (Rice & Estes, 1984, pp. 25-49).

Medicaid Trends in the Hospital Industry

Health Maintenance Organizations (HMOs) have been making a major push to sign up the nation's poorest patients, the existing Medicaid base, (Winslow, 1995). Many revenue dollars are available for those medical delivery systems that maximize the strategic competitive advantage this market segment offers. There are risks from a population that historically consumes a higher proportionate share of the limited health care resources. The financial incentives are high if this group of patients can be trained to properly use the medical care available to them. Reimbursement from Medicaid is approximately $425 per month from federal and state payments, while corporate client organizations pay on average $110 per month per covered life. This current market activity is a clear signal to the acute care hospital industry. It is no longer competitively viable to just make the organization more efficient. Change must be dramatic. HMOs believe they can sharply curtail the use of high-cost emergency rooms for routine care and control surging costs through utilization, capitation, and

standardization. Better health care will be delivered to the poor while efficiently managing chronic diseases such as asthma and diabetes. "We want to provide the same services to a Medicaid person in the Bronx that we provide to a vice president at Xerox," says Jacob Getson, senior vice president for government programs at U.S. Healthcare Inc., of Blue Bell, Pa. (Winslow, 1995).

In 1994 market activity drove a 63% increase in the enrollment of Medicaid recipients into privately run HMO's. Currently there are 7.8 million Americans who are eligible for these state and federal programs receiving their medical coverage through an HMO. In 1993 this represented 14% of that eligible population. For the year ending 1994 this representative group grew to 23% of those eligible for the joint state and federal programs for the poor. At this current rate of growth, 90% to 95% of all Medicaid patients are likely to be enrolled in an HMO by 1998.

Table 7

CBO Projections Combined with GNP Data for the Medical Industry 1989-2000
(from the Statistical Abstract of the United States, 1995)

	1989	1990	1991	1992	1995	2000	1995-2000 % Change
growth rate % of GNP	2.50%	0.90%	1.50%	3.00%	3.50%	3.20%	
Gross National Product ($)	5,304.4	5,557.5	5,736.6	5,908.7	6,178.6	7,230.4	17.00%
Hospital Care (& outpatient)	232.8	257.7	285.4	313.9	425.4	654.2	53.78%
Physician's services	117.6	132.7	148.5	165.5	225.6	503.1	123.01%
Dentist's services	31.4	33.8	36.1	38.6	47.1	63.1	33.97%
Other professional services	27	30.7	34.5	38.7	51.6	75.4	46.12%
Home Health Care	5.5	6.5	7.5	8.5	12.1	18.8	55.37%
Drugs & Medical sundries	44.6	48.5	51.8	55.5	82.7	196.05	137.06%
Eyeglasses & Appliances	13.5	14.3	14.9	16.1	20	28.4	42.00%
Nursing Home Care	47.9	53.6	59.1	64.9	85.8	210.8	145.69%
Other Health Services	10.5	11.5	13.3	14.9	21.3	33.9	59.15%
Medical Facilities	20.6	22.3	23.8	25.2	29.6	39.8	34.46%
Prepayment & Administration	35.2	40.5	43.4	45.9	60.8	96.3	109.70%
Government public health	17.5	18.8	20	21.2	70.2	118.8	69.23%
Total health expenditures (in billions)	604.1	670.9	738.2	808.9	1,132	2,039	80.06%
Total health care as % of GNP	11.39%	12.07%	12.87%	13.69%	18.32%	28.20%	

"This makes sense for Medicaid recipients, for government
and for taxpayers," says Barbara A. DeBuono, New York
state's health commissioner (Winslow, 1995). To stem losses
from escalating expenses, the state plans to quadruple by
early 1997 the number of Medicaid recipients in HMOs to over
two million. This change in economic behavior is creating
havoc in the hospital market. Hundreds of beds are being
eliminated, along with the staff that supported them.
"Traditional Medicaid programs waste billions of dollars to
support an infrastructure that has been proven not to work,"
says Stephen F. Wiggins, chief executive officer of Oxford
Health Plans (Winslow, 1995) "If the government can use
market forces to stimulate this natural and necessary
evolution, that's great policy."

Under managed care these funds are moved to HMOs, which
pay for the medical care providers that span the continuum
of care from non-acute care sites through acute care
organizations. Through preventive medicine and early
detection of disease states the HMOs are reducing long-term
cost exposure.

Most at risk in the New York metro area is the city
owned Health and Hospitals Corp. (HHC), which runs 11 acute-
care hospitals and other facilities. Medicaid patients
account for 70% of its $3.8 billion annual revenue, and if
they could lose close to 30% from proposed cuts. The
strategic response to market conditions taken by Bruce

Siegel, president of HHC, has had to close 100 beds and eliminate 4,000 jobs while instituting productivity standards. The hospital's own HMO has been restructured to be more competitive and maintain its patient base.

Early performance indicators show hospital stays being reduced by 12% and that the HMO has increased in size to become number three within the New York metro area. It is adding 3,700 new members a month. "If you can't deliver care in a managed-care mode, it's not worth much anymore," says William Walsh, Bronx Municipal chief operating officer (Winslow, 1995). "The market forces don't care about our mission. We need to be able to compete." The city will eventually privatize the system and eliminate outdated facilities.

Another example of the changing forces effecting primary care can be found in a growing and emerging medical group on Brooklyn's Coney Island Avenue. With financing from Oxford Health Plans, an HMO, this medical group is now financially sound and thriving, serving 3,500 of Oxford's Medicaid enrollees. In the East New York Nelson Mandela Community Center, doctors are provided with enough cash from local HMO's to provide cost-effective medical care.

Market Stage Development

The health care market is in varying levels of

development and sophistication with four distinct market stages identified, as reported in <u>Integration: Market Forces and Critical Success Factors</u>. (1994).

1. **Stage I**: During the 1980s most of the country was in Stage I of market development. The health care delivery system was based on the old values of convenience and choice with no limits on the process of care. Solo practice and small medical groups were the norm, as characterized by the professional private practice model. Employers were beginning to worry about the cost of medical care and began to experiment with payment methods.

2. **Stage II**: Cost pressures mounted with the increase in medical cost. More employer involvement leads to managed care penetration with fee-for-service discounting. The overall per capita cost of care became the measure of principal concern. Case-based payment and risk-sharing contracts start to appear. There was a state of overcapacity in the hospital and sub-specialty physician sectors of the delivery system. The evolving response of health care providers was to form networks linked to managed care operations. Physicians sought alternate practice models with consolidation into a variety of organizations and larger specialty groups. These two stages comprise 95 % of all health care markets in the United States.

3. **Stage III**: A set of informed purchasers define the

market price for health care services.   Purchasers use
financing mechanisms to force providers to share insurance
and utilization risk.   The financial risk is shifted from
payers and insurance companies to the providers of services.
Delivery systems adopt longitudinal strategies for managing
the long term care of a population.   The total value
received for the health care purchasing dollar is questioned
and examined.   Minneapolis has evolved into Stage III.
Other urban markets should achieve this level in five to
seven years.

    4. **Stage IV**:   The purchaser/community holds the health
care delivery system accountable for cost, outcome, quality,
service and access.   In this stage the delivery system is
accountable for the health status of a population.
Incentives are aligned from the providers through the
financing mechanism all the way bask to the purchaser or
community.   Whether the purchaser is a large corporation, a
coalition of businesses, the community, or a governmental
body, informed tradeoffs are made in relation to the level
and amount of care and the cost of that care.   A certain
level of rationing will exist as demonstrated by the Oregon
Medicaid initiative started in 1993.   All provider
incentives that do not act in the best interest of the
patient or purchaser are eliminated.   This is the direction
of marketplaces such as Minneapolis and parts of California.

The current rapid market development of Stage IV in Minneapolis comes on the success of employer health cost reductions of 11% in 1993. While costs went up in 1994 on a par with inflation, the rates were still 35% below the national average. Those competing health plans that lost the business have forced the market into rapid consolidation into three huge competing managed-care plans. Elements of this model have been emulated across the U.S., prompting hospitals and health plans to restructure in a flurry of mergers, alliances and acquisitions.

A 22-member employer coalition, known as the Business Health Care Action Group contends that managed care organizations are spending millions of dollars on business rather than health care. Steve Wetzell, Executive Director, says, "We want to get employers and health plans out of the middle" of the transaction between doctors and hospitals. To that extent this employer group is negotiating for services directly with health care providers (Winslow, 1995).

These are the rumblings of a market evolving through rapid and turbulent change as power shifts between players. The key is innovation, quality, cost containment, and delivering what the customer wants. The health care industry is a rapidly changing and evolving market. Organizations must be aware of the strategic direction and capabilities needed to compete in this volatile environment.

The Primary Care Component

The delivery system must develop a strategy to attract and retain as many primary care physicians as necessary to balance capacity. The needs of medical groups will vary, as represented with the model in Figure 10 that shows the many possibilities for the physician relationships that must be developed (Stromberg, 1993). Primary care is difficult and the current private practice environment makes it hard to be successful in today's market. Today the physician takes home only 35 cents on the dollar and must deal with many complexities regarding billing, various insurance plans, and the acceptance of patients who fail to pay as reported by the American Medical Association (1989). These varied factors combine to make it difficult for a primary care
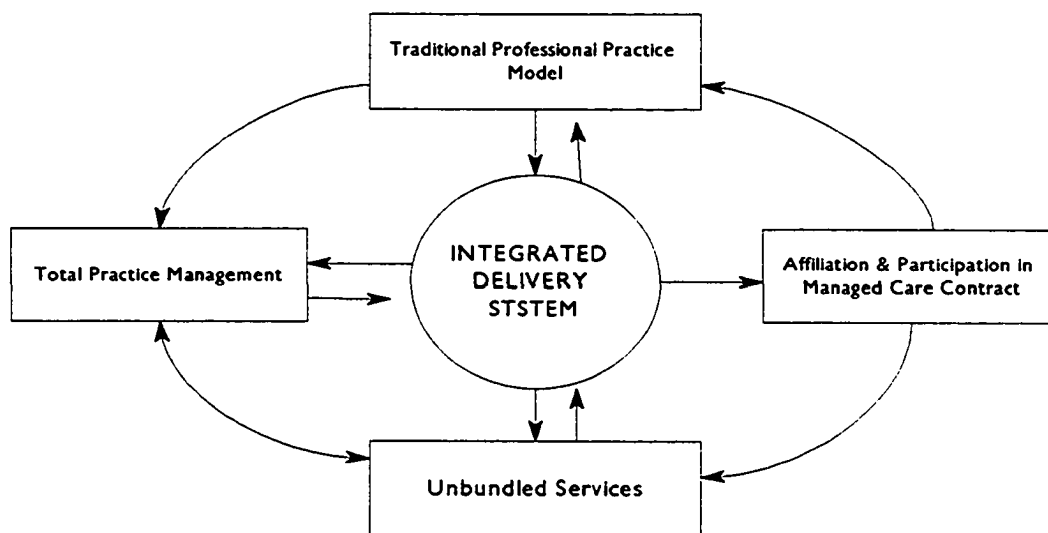
Figure 10. Model of physician relationships options.

physician to stay in private practice, yet they are the very reasons physicians are entering the new practice relationships.

The development of relationships between hospitals and medical groups is critical to balancing capacity and managing costs. Current market and environmental factors are creating opportunities to forge new relationships and ventures with physicians. The economic survival of both groups is critically tied to the covered lives of the managed care operation. There will continue to exist for a period of time a shortage of primary care physicians to meet the needs of integrated delivery systems. Therefore, a long-term strategic plan must be put in place to insure the systems ability to compete in this area (Burns, Anderson, & Shortell, 1993).

PHOs and other integrated physician-hospital structures offer the advantages of aligned incentives and risk sharing to those involved. The integration of physicians into delivery networks allows hospitals to benefit from the relationship by balancing capacity and increasing market share. This translates into long-term relationships with physicians and health care buyers, an expanded primary care base, and a place in the market as a strong competitor for managed care. Physicians benefit because they can reduce their medical practice costs while more effectively competing with other integrated delivery systems for prepaid

managed care contracts. Other physician benefits include gaining new revenue sources from managed care contracts and outpatient services, hospital management expertise, access to capital, and recruitment help, as reported in the executive summary from The Sourcebook (1995, p. 14).

Hospitals, HMOs and Managed Care

A recent Deloitte & Touche (1995) survey reveals that 81% of 1,191 hospital respondents said they currently participated in or have agreements with HMOs, compared with 70% in 1992, and 48% in 1986. In a survey by the Group Health Association of America (GHAA) of 50 HMO plans, 75% said they have formed or plan to form new affiliations with hospitals, physicians, PHOs, or other providers. Examples of this activity include:

1. The $2 billion merger of Minnesota health care giants Medica, an HMO with 550,000 enrollees and 5,000 physicians, and HealthSpan Health Systems Corp., a chain of 17 hospitals and clinics, 3,200 affiliated physicians, and 45 physician groups. This is the state's largest health care delivery system, Allina Health Systems.

2. The formation of Minnesota-based Health Partners, a network made up of 50 primary care and multi-specialty medical groups, 175 clinic sites, 30 hospitals, more than 900 primary care providers, and some 3,000 specialists contracted to provide care to one of the Twin Cities'

largest business coalitions, the Business Health Care Action Group.

3. Blue Cross and Blue Shield of New Jersey is working to establish its own statewide network of family and primary care clinics.

4. The impending merger between two Massachusetts-based HMO networks, Harvard Community Health Plan and Pilgrim Health Care.

5. The merger of Arkansas Blue Cross and Baptist Medical Center in Philadelphia, Arkansas.

6. The formation of two Kansas City based health networks, Mid-America Health First (made up of many hospitals and members of a longstanding PPO called Health Net) and Health Midwest (with another longstanding PPO called Preferred Health Professionals).

Hospitals and physician groups are finding alliances with managed care organizations increasingly necessary to maintain strong patient volume and a healthy market share. There is increased pressure for hospitals and physician groups to form partnerships with managed care companies that effectively merge the delivery and financing of health care. By the end of 1994, an estimated fifty million Americans were members of HMO plans, according to the GHAA. Based on current growth patterns it is estimated that 80% to 90% of all Americans will be enrolled in managed care within five years.

Diversification of Operations

There continues to be dramatic growth in the number of outpatient and ambulatory care settings owned and operated by hospitals. As a strategy, diversification complements the vertical and horizontal integration of these developing networks. These tactics when taken as a group reveal an aggressive strategic thrust within a turbulent and rapidly changing environment (Figure 12).

1. The total number of ambulatory care facilities owned and operated by hospitals increased 32% in 1993, with the number of outpatient surgery procedures performed increasing 16%, according to a survey by SMG marketing group.

2. Hospital surgeries as suggested by AHA estimates (U.S. Statistical Abstract, 1995) indicate that based on current trends 66% of all hospital based surgeries will be performed on an outpatient basis by 1996.

3. Home Health services are currently required by more than five million people. It is estimated that home health programs can reduce medical costs by 30%. The U.S. Commerce Department reports that revenues for the home health care industry achieved $22.2 billion in 1994, as compared to only $7.6 billion in 1990 (Harris & Maze, 1994).

4. Subacute care is for patients who no longer require acute care services but still need highly skilled nursing care and access to technologically advanced therapies. According to the American Health Care Association (AHCA),

According to the American Health Care Association (AHCA), there are currently between 10,000 and 15,000 subacute care beds in the U.S. (Statistical Abstract of the U.S., 1995) Revenues totaled $5 billion in 1993, and are projected to grow to $20 billion within five years. It is estimated that subacute care units can effectively treat patients for a third of the cost of traditional hospital care. This growth has spurred the creation of subacute care units by organizations such as Columbia/HCA Healthcare Corp., Community Psychiatric Centers, Ramsey Health Corp., and Premier Hospitals Alliance of New York. The Health Care Financing Administration (HCFA) questions whether this is cost-effective treatment or just a strategy to capture higher reimbursement rates (Harris & Maze, 1994, pp. 1-7)

Strategies

Strategic management refers to the broad overall process of environmental forecasting and those external considerations used in formulating and implementing tactical plans. Strategy is defined as the set of decisions and actions that result in this formulation and implementation while achieving an organization objective. The nine critical tasks involved in this process are:

1. Formulate purpose, philosophy, and goals.

2. Develop a company profile that reflects internal

conditions and capabilities.

    3. Assess the environment; both competitive and general contextual factors.

    4. Identify options in light of organizational purpose.

    5. Analyze options by matching resources with the external environment.

    6. Select long-term objectives and grand strategies that achieve desirable options.

    7. Develop annual objectives and short term strategies compatible with goals.

    8. Implement strategic choices by means of budgets and allocation of resources in which the matching of tasks, people, structures, technologies, and reward systems is emphasized.

    9. Evaluate the success of the strategic process as an input for future decision making.

    Strategy is the managers' large-scale, future-oriented plan for interacting with the environment and achieving organizational objectives. A strategy is the game plan and provides a framework for managerial decisions. The strategy reflects how, when, where, and with whom the organization competes and for what purpose. To successfully position an organization in competitive situations, managers must look beyond their own operations and consider what others are likely to do, (Pearce & Robinson, 1991).

management activities. The more sophisticated strategic
planners at companies like General Motors or Standard Oil
have instituted more complex and detailed process than
smaller organizations that rely on the entrepreneurial

**NUMEROUS
ENVIRONMENTAL
OPPORTUNITIES**

Supports a Turnaround
Oriented Strategy

Supports an
Aggressive Strategy

**CRITICAL
INTERNAL
WEAKNESSES**

**SUBSTANTIAL
INTERNAL
STRENGTHS**

Supports a
Defensive Strategy

Supports a
Diversification Strategy

**MAJOR
ENVIRONMENTAL
THREATS**
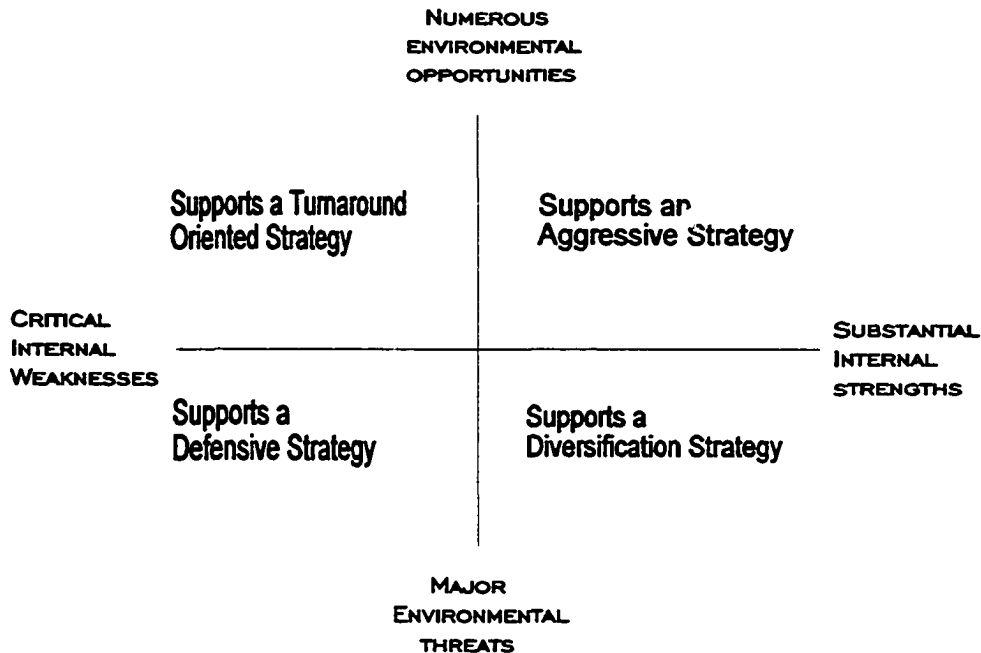
Figure 11. Environment and internal analysis diagram.

skills of a limited staff. Yet despite differences in
detail and the degree of formalization, the basic components
of the models used to analyze strategic operations are very
similar (Seiler & Said, 1983). Each organization must
evaluate itself in relation to the market and its

competition. A firm must know its limitations, capabilities, and opportunities. Once this information is analyzed, an appropriate strategy must be planned, implemented, and measured (see Figure 11).
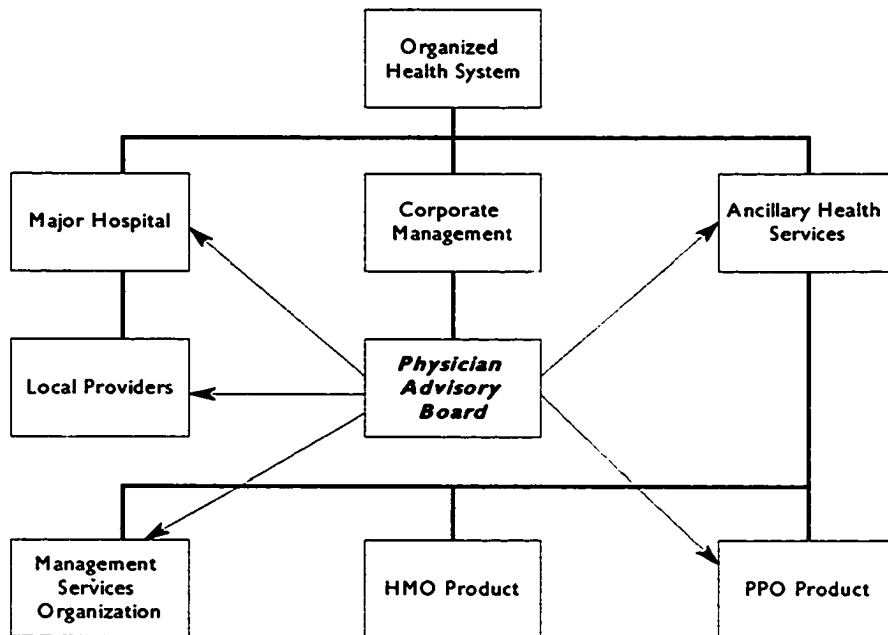
Figure 12. Governance model for integrated system.

It is important for the delivery system to set up an initial governance system that addresses total system issues (see Figure 12). One or more governing bodies and subgroups may be required to solve significant operational issues (Coddington, Moore, & Fischer, 1993). Physician involvement is critical for clinical management issues, budget allocation, strategic planning, and membership criteria. The challenge can be one of coordinating between different

governance efforts, (Beckham, 1993).

Rapid Growth
Market

Strategy Initiatives:
1. Concentrated Growth
2. Vertical Integration
3. Horizontal Integration
4. Concentric Diversification
5. Innovation
6. Joint Ventures

Strong
Competitive
Position

Grand Strategy Matrix

Developed on a foundation of Core Strategies:
(i) being the low cost producer, (ii) marketing differntials,
and, (iii) Focus: on product &/or markets.

Figure 13. Grand strategies for growth (Christensen, Berg, & Slater, 1976, pp. 16-19).

In the early 1980s the Sentara Health System in Norfolk, Virginia developed a long-range strategic plan to

transform its small hospital company into a diversified

system. It focused on (a) urgent Care, (b) long-term

RAPID MARKET GROWTH

1. Focus on market and product development

2. Vertical integration

3. Concentric diversification

4. CQI/Zero Defect

1. Refocus market development and product development.

2. Innovation

3. Horizontal integration

4. Divestiture

5. Liquidation

STRONG COMPETITIVE POSITION

WEAK COMPETITIVE POSITION

1. Concentric diversification

2. Conglomerate diversification

3. Joint Ventures

4. Innovation

5. TQM/CQI for efficiency

1. Turnaround or retrenchment w/{TQM/CQI}

2. Concentric diversification

3. Conglomerate diversification

4. Divestiture

5. Liquidation

SLOW MARKET GROWTH

Figure 14. Grand strategy alternatives.

care, (c) home care, (d) medical transport, (e) ambulatory

care, (c) home care, (d) medical transport, (e) ambulatory
care, (f) managed care, and (g) regional hospitals. Figure
13 shows the Grand Strategy Matrix for a rapid growth market
and a strong competitive position.

The behavioral considerations affecting the choice of a
Grand Strategy are determined by (a) the role of past
strategies, (b) degree of the firm's external dependence,
(c) attitudes toward risk, (d) internal political
considerations, (e) Timing, and (f) Competitive reactions.
These strategies are built on a core foundation of; (a)
being the low cost producer, (b) seizing on marketing
differentials, and (c) focus; on products and/or markets.
The data contained in Figure 14 suggests Grand Strategy
alternatives.

Core Planning Group

↓

Purpose
(Mission Statement)

↓

Vision Statement
(Core Values)

→ *Communicate*

→ *Educate*

System Strategic Priorities:
1. Develop plan for Ideal integrated system.
2. Develop system of choice for primary care physicians.
3. Develop systemwide human resource plan.
4. Develop systemwide plan for graduate medical education.
5. Align financial performance with industry standards.
6. Achieve 200,000 +vertically integrated managed care members by 1996.
7. Best in region in four strategic service lines.
8. Implement continuous improvement.
9. Differentiate system based on quality.
10. Develop plan for integrated information system.
11. Develop systemwide marketing plan.
12. Align internal stakeholders.
13. Align primary care physicians and specialists.
14. Develop systemwide plan for government relations.

Task Forces

↓

Detailed Action Plans

↓

Monthly Monitoring Meetings

↓

**New Management Process
with Broader Participation**

Figure 15. Vision development process at TMCare (Tucson, Az.)

Articulation of a vision and organizational purpose is a critical first step in the process of developing a high performance organization. Shared values among members

Patient Acquisition

Independent
Contractors:
1. Payer Choice
2. Patient Choice
3. Government
   Sponsored

Insurance Services

Management
of
Care

Clinical Management
Outcomes Management
Benefit & Cost Management

Management
of
Care

Portals of
Care

Physician
Relationships

Delivery Systems
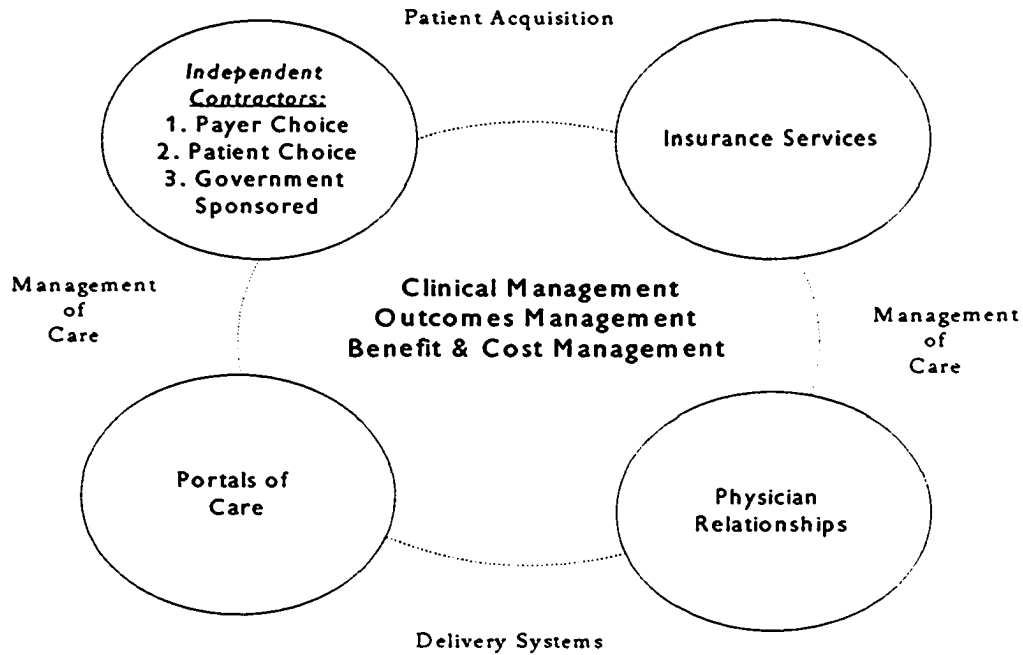
Figure 16: Sutter Health - Managed care matrix

within the group relate to cultural mores and values of the organization when it is seen as a society onto itself (see Figure 15).

The Sutter Health system as shown in Figure 16, serves northern California with 14 acute care hospitals, a network of psychiatric centers, nursing homes, and surgery centers. There are five major physician components of more than 2,000 physicians and 600 medical groups with a proprietary claim processing and management service. Another important component is the Omni Health Plan, a 100,000 member HMO serving the total Sutter area. The market has a managed care penetration rate of 70%. Sutter has over 700 contracts

with various payers. Figure 17 represents the organizational structure for AvMed-Santa Fe integrated system in Gainesville, Florida.
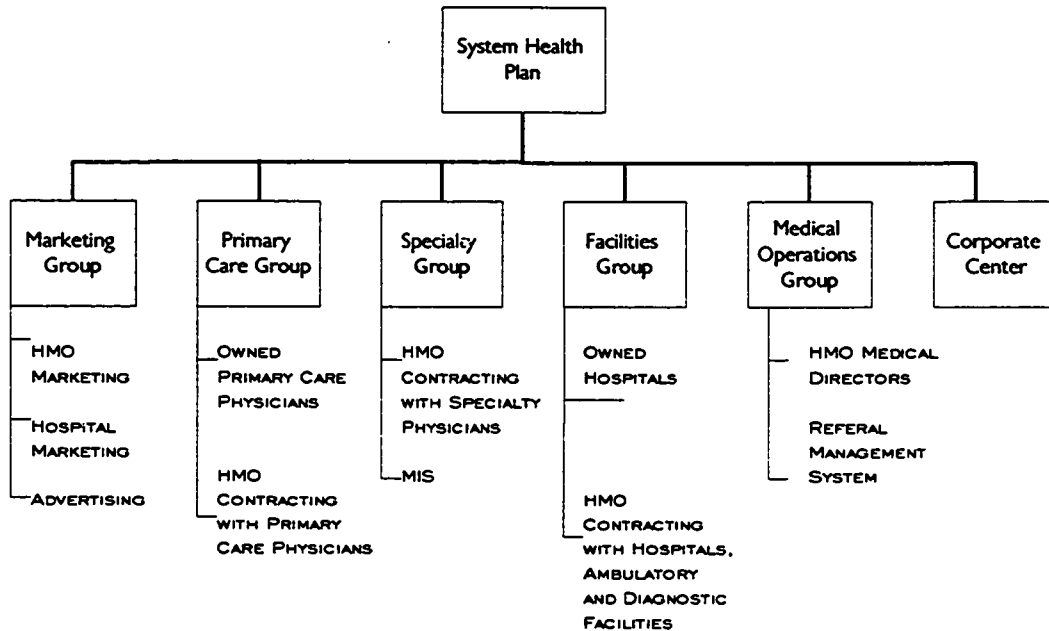
Figure 17. Organizational structure integrated system

The evolution of the health care industry is happening at a rapid pace. Influence is shifting between several groups that are positioning themselves to control various aspects of health care integration and consolidation are occurring at many levels (Figure 18).

Integrated Health Care Delivery System Components

Influencers

Diagnostic Imaging $426 M

Dialysis Centers $559 M

Nursing Homes $1.05 Billion

Government Medicare & Medicaid

Freestanding Ambulatory Care $278 M

Acute Care Site & Components aligned with: PPO/PHO HMO & MCO (Managed Care) $44.48 Billion

Physician Offices $7.73 Billion

Employer Purchasing Coalitions

Freestanding Surgery Center $443 M

Home Health Agencies $1.49 Billion

Commercial Insurance Companies

Disease State Management Activities. Pharmacy Benefit Managers

Virtual SuperCenter Integration through EDI common catalog

Acute-Care Drug Wholesaler	Non-acute care (Pharmaceutical)
Acute-Care Med-Surg Distributor	Non-acute care (Med-Surg)

Pharmaceutical & Med-Surg Manufacturers

⟶
Supply stream

┄┄┄▶
Influencers

Integrated Supply Chain Delivery System Components

Figure 18. Industry integration with pharmaceutical and med-surg purchases within the health care industry (HCIA, 1995).

Performance

If we were to check the health of a critically ill patient in the hospital, we would use many measures to determine the condition of that patent. The body temperature alone would be insufficient for diagnosis, so we would add an EKG test, blood tests, x-rays, and a whole range of other indicators. When we evaluate organizational health, it is necessary to examine a range of measures to give us a complete overview and analysis. A family of measures, as shown in Figure 17, views the organization as a whole, as a single, complex, and holistic dynamic system (Provost & Leddick, 1993, pp. 477-490). Though it is made up of many components, its members are unified by a strategic organizational purpose.

An array of values makes up this family of measures composed of components that individually may not provide useful information. However, when took as a whole these components provide information on both the magnitude and direction the organization is taking. This array should serve as an indicator of present performance and a predictor of future trends. These measures should relate to the organization from a variety of perspectives: customers, employees, business and financial, operations, and the outside environment. The job of senior management is to plan, manage, and improve the entire family of values

(relative to shareholder value in a publicly owned organization). One very specific way to develop an array of specific measures would be to use the purpose statement of the organization as a guide (Deming, 1986).

Production Viewed as a System

Family of Values
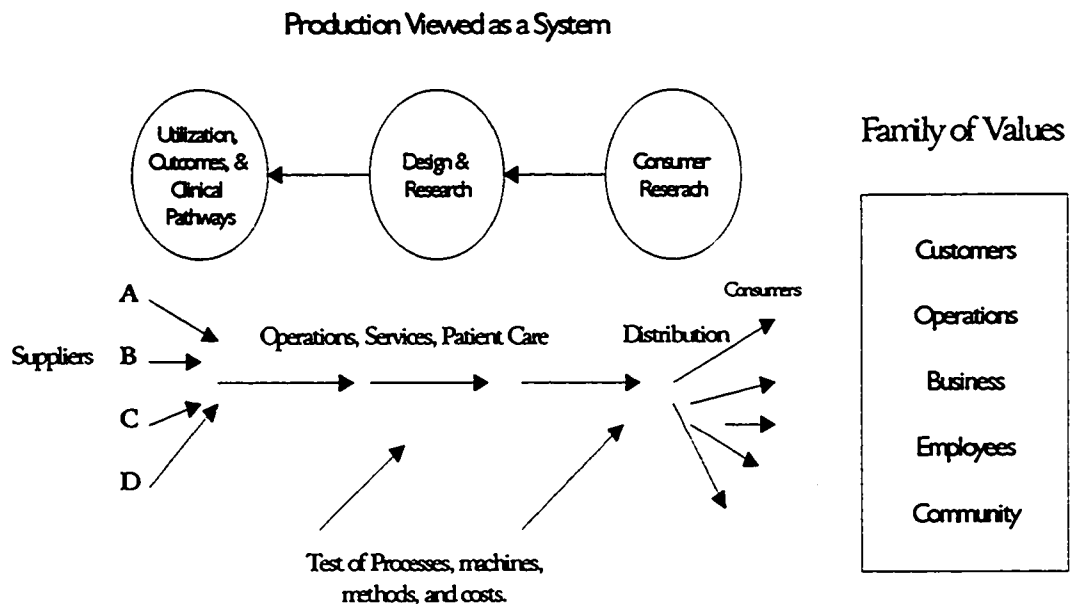
Figure 19. A family of measures of a system.

Developing an Array of Measures

Robert G. Eccles in an article published in the Harvard Business Review describes the work that must be done to manage the type of change in an organization's measurement system (Eccles, 1991. pp. 131-137). Figure 19 represents a process flow.

There are seven areas that need to be addressed:

1. What information should be in the array of measures? Determine what information is needed and the categories of measures that describe the organization in a balanced way. Using the organization's purpose statement is a good beginning.

2. How can outside resources help this effort? Industry and trade organizations may play an important role in recommending new performance measures. These various groups can identify key measures, research methods for obtaining the data, and competitive benchmarking information.

3. How are the new measures generated? To augment the traditional accounting measures we must decide how measures of quality, customer satisfaction, market share, and cycle time can be put on an equal footing. Who will gather this data, analyze it, and archive it?

4. What technology is needed to support the new measurement system? What hardware, software, and telecommunications systems need to be upgraded or installed? Can the current information systems accommodate the new demands? Can the work of gathering, organizing, and analyzing the data for the new measures be incorporated into existing jobs, or are new positions needed?

5. Do the organization's incentives need modification to support the new systems? In many organizations, compensation systems are built around

the current financial measures. Appraisal and development systems that currently make use of financial measures must be modified to include the expanded array of measures.

6. Who will lead the effort to develop the new family of measures? Since change can be attacked from many levels within the organization the top managers must take a leadership role in developing the measures to keep the effort from floundering. This executive must become the champion of these efforts.

7. Who should do the work of collecting and reporting the measures? One approach is to expand the role of the accounting department to include these new measures. Another is to create a new function in the organization one that is responsible for measurement. Since this new measurement system will represent a radical change it may be appropriate to assign this task to another department such as marketing or human resources.

The analysts at Ford Investor Services, a research firm in San Diego, created an array of five strategic measures. These are based on research that studied thirty-three different methods of predicting corporate performance via an analysis of stock performance (Michels, 1995. p. 133). The five strategic measures are:

1. Price to Earnings Ratio: The stock price is divided by earnings per share over the past four quarters, a number most newspapers publish. Low P/E ratios are attractive to

investors. The American automobile manufacturers, Ford, General Motors, and Chrysler all have low P/E multiples of seven or less.

2. Price-to-Cash-Flow Ratio: This ratio will indicate how much cash a company has to pay for dividends or to buy back stock. Top stocks averaged 16.7% total return. Value Line Investment Survey does the math work by calculating cash flow per share for hundreds of stocks, adding earning to depreciation and amortization expense and dividing the total by the number of shares outstanding. Cray Research stock sells for 3.9 times its price-to-cash-flow at $23.38, and Borg-Warner Security sells at $7.25, or 1.6 times cash flow.

3. Price Momentum: A 10-year annual return of 18.5% is the benchmark. A momentum proxy in Value Line's ranking of a stock's timeliness is based on price and earnings momentum. First Team Sports, an in-line skate manufacture, and Grist Mill, a private label cereal manufacture, are leaders in this category.

4. Earnings Trend: Top stocks in this category returned 16.4% annually. The predictor is based on a Ford formula that singles out companies whose earnings are accelerating or whose profit declines are slowing. Empi a maker of medical devices, has refocused on its core customers is a leader in this category.

5. Price Gain Past Year: The benchmark is a ten-year

total return of 18.2%. The percentage gain in a company's stock price over the previous year turns out to be an effective forecasting tool of future returns. Technology stocks are the leaders within this group with Tencor Instruments, a device maker for quality control detection in semiconductor wafers production (up 349%), and Helix Technology, a manufacture of semiconductor production machinery (up 246%). These stocks demonstrate strong performance over the previous twelve months.

Using an array of measurements helps an organization avoid shortsighted focus on single measures of success in favor a more holistic approach to performance management of the whole organization (Kaplan & Norton, 1992, pp. 71-79). Managing the organization for performance is increasingly being seen as a central managerial challenge of our transitional economy. As managers we must

1. Define what our business is and what it should be.

2. Derive clear objectives and goals from the definition of function and mission.

3. Define minimal acceptable results and make someone accountable for them.

4. Define the measurements of performance, such as customer satisfaction results.

5. Use these measurements as feedback to build self-control from results.

6. An organized audit of objectives and results to

identify those objectives that no longer serve a purpose or have proven unattainable (Drucker, 1958, p. 158)

The organizational structure should direct the vision of individuals and business units toward performance rather than process. A coherent visioning process should be directed toward results and performance of the entire enterprise. It is important that organization structure not misdirect this vision toward the wrong performance measurement. We must work for results that produce value and performance and not for the sake of the work itself, align all incentives.

Then what is the function of profit? Profit is the result of the performance of the organization in marketing, innovation, and productivity. Profit is an example of what engineers mean when they talk of the feedback that underlie all systems of automated productions. It is the self-regulation of a process by its own results. Profit is the premium for the risk of uncertainty. The economic activity of profit focuses on the future, and the one thing that is certain about the future is uncertainty, and its risks. It is through this risk taking that any business or organization earns its keep. And since business activity is economic it always attempts to bring about change. Finally, it is profit alone that supplies the capital for tomorrow's jobs, rewards the risk takers and motivates the individual in the pursuit of success.

One of the most important tools for assessing the strength of an organization within its industry segment is financial ratio analysis. These ratios show relationships between financial statements and allow for comparisons between competitors as well as trend analysis over time. Managers, investors, and creditors all employ some measure of financial analysis for their financial decision making. These tools provide managers with a measurement of how the company is doing in comparison to past years and also in comparison to the competition within the industry. Investors base their decisions to buy or sell stock on financial analysis, and creditors use this information to base lending decisions on. The four basic groups of financial ratio analysis are liquidity, leverage, activity, and profitability (Brigham & Gapenski, 1994, pp. 35-84).

These financial statements and ratios are the building blocks of strategic and operational control. Strategies are forward looking, designed to be accomplished over a timeline of several years into the future and are based on management assumptions about numerous events that have not yet occurred. The traditional approach to control compares actual results against a standard. While this method has great importance, it is inappropriate as a methodology for managing strategy and strategic change. There are two sets of questions that need to be answered:

1. Are we moving in the right direction? Are key

elements coming together? Are the operational assumptions
we used correct? Are the critical things that need to get
done being done? Do we need to make adjustments to our
strategy?

2. How is our performance? Are goals, objectives, and
schedules being met? Are costs, revenues, and cash flows
matching projections? Do we need to make operational
changes?

Strategic Controls

Strategic controls when augmented by certain
operational controls give the answers needed in a timely
manner to allow for strategic course corrections. These can
be characterized as a form of steering control. The four
types are (Schryogg & Steinmann, 1987, p. 96)

1. Premise control: A process designed to check
systematically and continuously whether the premises on
which the strategy is based are still valid.

2. Implementation control: A process designed to
assess whether the overall strategy should be changed in
light of the results associated with the incremental actions
that implement overall strategy. This includes (a)
monitoring strategic thrusts, and (b) milestone review.

3. Strategic surveillance: A process designed to
monitor a broad range of events inside and outside the
organization that are likely to affect the course of its

strategy.

4. Special alert control: This is the thorough and
often rapid reconsideration of a firm's strategy because of
a sudden unexpected event.

Operational Controls

The operational control systems guide, monitor, and
evaluate progress in meeting annual objectives. There are
four steps common to all postaction control:

1. Set standards of performance.

2. Measure actual performance.

3. Identify deviations from standards set.

4. Initiate corrective action.

Three types of operational control systems are budgets,
schedules, and key success factors. An example of critical
success factors at Lotus Corporation are shown in Table 8.
How does a venerable 102-year-old company like Westinghouse
continue its viability? An organization that was almost
sunk by declining uranium prices in the 1970s, it was
driven out of the appliance business, lost the lead in
nuclear power plants, and had major losses from low-income
housing and its mail order business. Yet it is one of only
22 companies to appear in the 1917 and 1987 Forbes list of
100 largest U.S. corporations. Its workforce is down to
117,000 from a 1974 high of 199,000 and productivity gains
have been running 6% plus a year. From 1985 to 1987 while

divestitures kept sales flat, net profit rose 22%, and
primary earnings per share shot up 45%. Westinghouse has a
simple view: If a division is profitable and performs, keep
it; if not, dump it. Managers have three basic annual
targets that provide operational control (a) 8.5% annual
growth in revenue, (b) double digit per share annual
earnings gains, and (c) an ROE of 18% to 21% as reported in
"What's a Westinghouse?" (Forbes, 1988, p. 34).

Table 8
Critical Success Factors at Lotus Corporation

Critical Success Factors	Measurable Performance Indicator
1. Product quality	A. Performance data versus specification B. Percentage of product returns C. Number of customer complaints
2. Customer service	A. Delivery cycle in days B. Percentage of orders shipped complete C. Field service delays
3. Employee morale	A. Trends in employee attitude survey B. Absenteeism versus plan C. Employee turnover trends
4. Competition	A. Number of firms competing directly B. Number of new products introduced C. Percentage of bids awarded versus the standard

Table 9
Simplified Report of Key Performance Indicators

Key Success Factors	Objective, Assumption or Budget	Forecast Performance at This Time	Current Performance	Current Deviation	Analysis
Costs Control: Ratio of indirect overhead costs to direct field and labor costs.	10%	15%	12%	+3 (ahead)	Are we moving too fast, or is there more unnecessary overhead than was originally thought?
Gross Profit	39%	40%	40%	0%	
Customer Service: Installation cycle in days.	2.5 days	3.2 days	2.7 days	+0.5 (ahead)	Can this progress be maintained?
Ratio of Service to Sales Personnel	3.2	2.7	2.1	-0.6 (behind)	Why are we behind here? How can we maintain the installation cycle progress?
Product Quality: Percentage of products returned.	1.0%	2.0%	2.1%	-0.1% (behind)	Why are behind here? What are the ramifications for other operations?
Product performance versus specifications.	100%	92%	80%	-12% (behind)	
Marketing: Monthly sales per employee.	$12,500	$11,500	$12,100	+$600 (ahead)	Good progress. Is it creating any problems to support?
Expansion of product line.	6	3	5	+2 products (ahead)	Are the products ready? Are the perfect standards met?
Employee morale in service area.					
Absenteeism rates.	2.5%	3.0%	3.0%	(on target)	
Turnover rates.	5%	10%	15%	-8% (behind)	Looks like a problem! Why are we so far behind?
Competition: New product introductions (average number).	6	3	6	-3 (behind)	Did we underestimate timing? What are the implications for our basic assumptions?

Operational control systems, as represented in Table 9, require systematic evaluation of performance against predetermined standards or targets. A critical concern is the identification and evaluation of performance deviations, with attention paid to determining the underlying reasons and strategic implications for observed deviations before management reacts.

```
┌──────────────────────┐      ◇ Critical Success ◇      ┌──────────────────────┐
│  Long Term Objectives │      ◇     Factors     ◇      │    Grand Strategies   │
└──────────────────────┘                                └──────────────────────┘

┌──────────────────────┐                                ┌──────────────────────┐
│    Annual Objectives  │ ─────────────────────────────▶│   Operating Strategy  │
└──────────────────────┘                                └──────────────────────┘
```

Capital Budgets

Income Goals

Operational Controls

Expenditure
Budgets &
Schedules

Sales Forecast

Budgeted Financial Statements: Cash Flows,
Income Statements, Balance Sheets

Strategic Controls
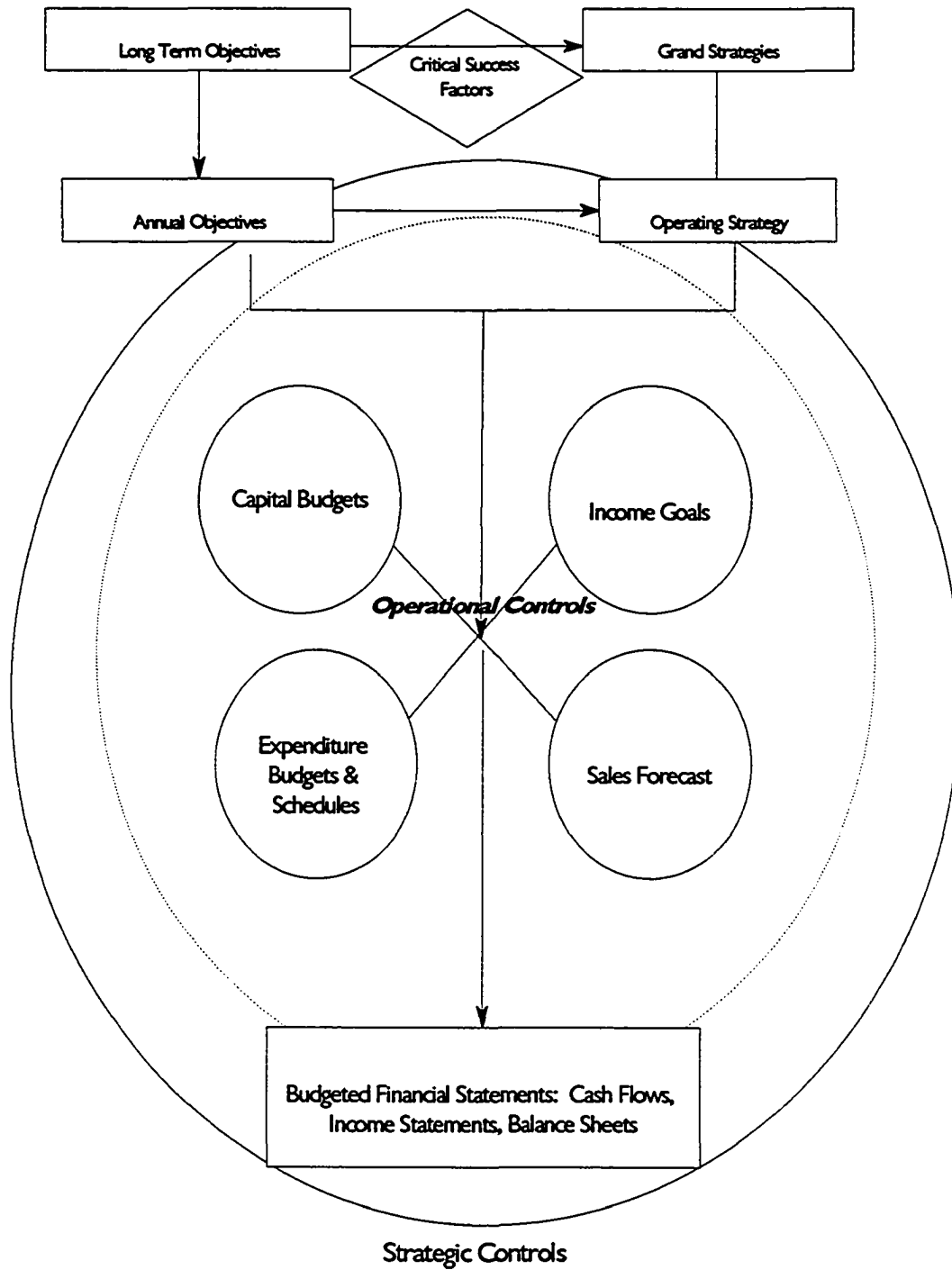
Figure 20. Evaluation and control methodology.

The flowchart in Figure 20 depicts the process for planning and forecasting within the construct of strategic and operational controls guided by the critical success factors necessary to achieve the goals and objectives of the Organization Stratagem.

The strategic planning and feedback loop in Figure 21 defines the corporate strategy system within four elements (a) strategy development of the strategic plan; (b) strategy planning; which is the translation of strategies into detailed and costed plans; (c) strategy implementation; and (d) strategic performance measurement and feedback.

Managing by strategy means that the strategy system, as we have just defined it, becomes the core of the whole corporate management process. This implies that the resource allocation process of the corporation links its organization, budgeting, reporting and control, performance measurement, and reward and management information systems. The internal communications and management development process are linked and shaped by the corporate strategy system. This has broad implications on the day-to-day management of the corporation.

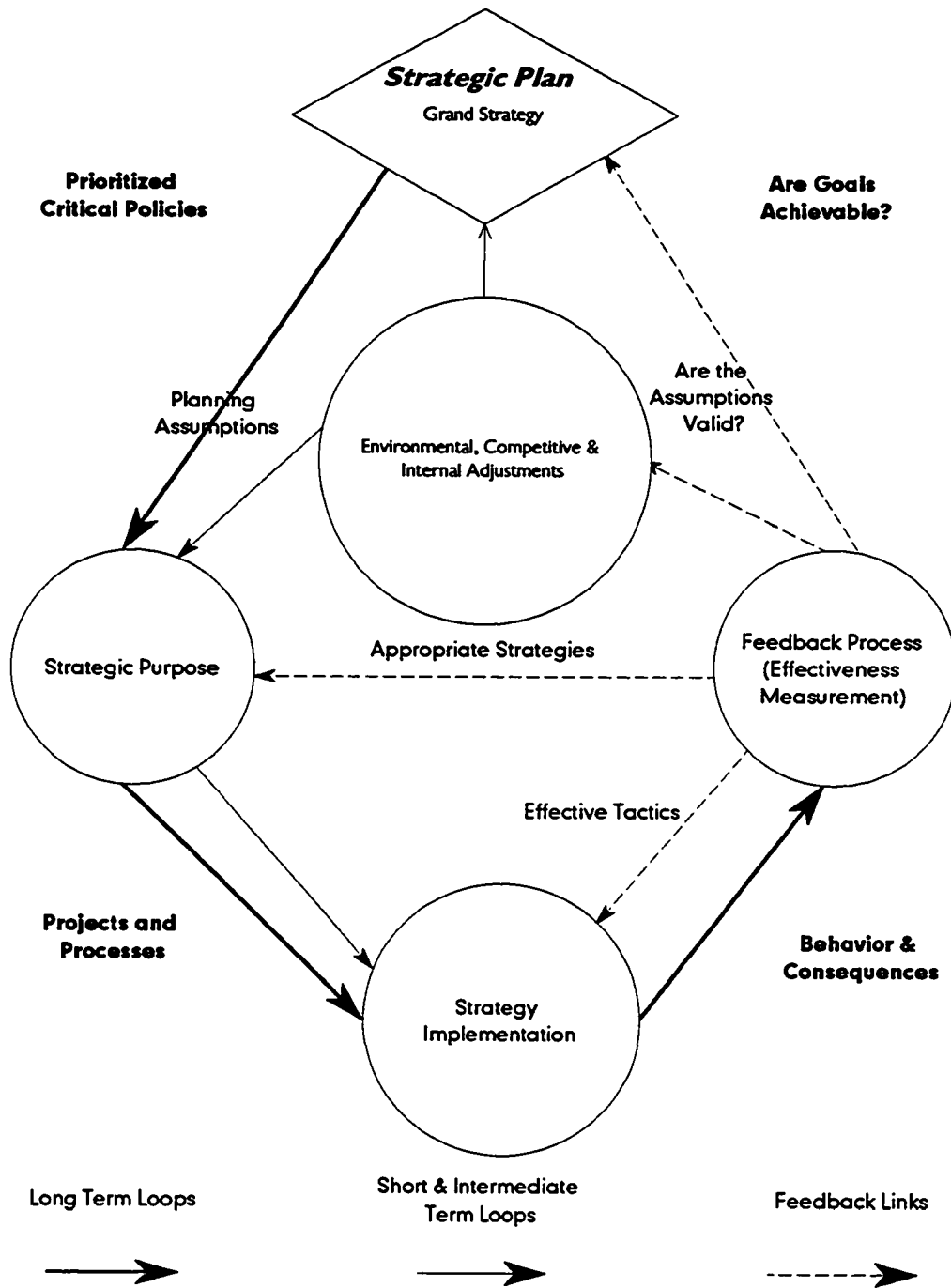**Figure 21.** Strategic planning loop.

Scenario Analysis

Scenario Analysis as depicted in Figure 22, is critical for an uncertain industry with intense competition, an organization needs a method of analyzing its environment that is more fundamental than the typical methods of scanning and trend analysis (Learned, Christensen, Andrews, & Guth, 1969). Companies confronted with major uncertainties, life-threatening competition, or sudden discontinuities may find the scenario method useful (Schnaars, 1989). The scenario method helps managers map out a wide range of possible futures, forcing them to "think outside the box" (Wack, 1985).

The method is well suited for addressing such external changes as deregulation, foreign competition, new technology, and increased environmental concerns. It exposes managers' assumptions (e.g., the government is the enemy) and knowledge gaps. Too often, organizational views about the future are myopic, short-term, or focus on only a few data points (Russo & Schoemaker, 1990). Scenarios can challenge conventional wisdom and stretch people's thinking so they better appreciate long-term threats and opportunities (Figure 22).

The basic idea in scenario construction is to identify existing trends and key uncertaintiesm combining them into a few future worlds that are internally consistent and within the realm of the possible. The first step in the planning
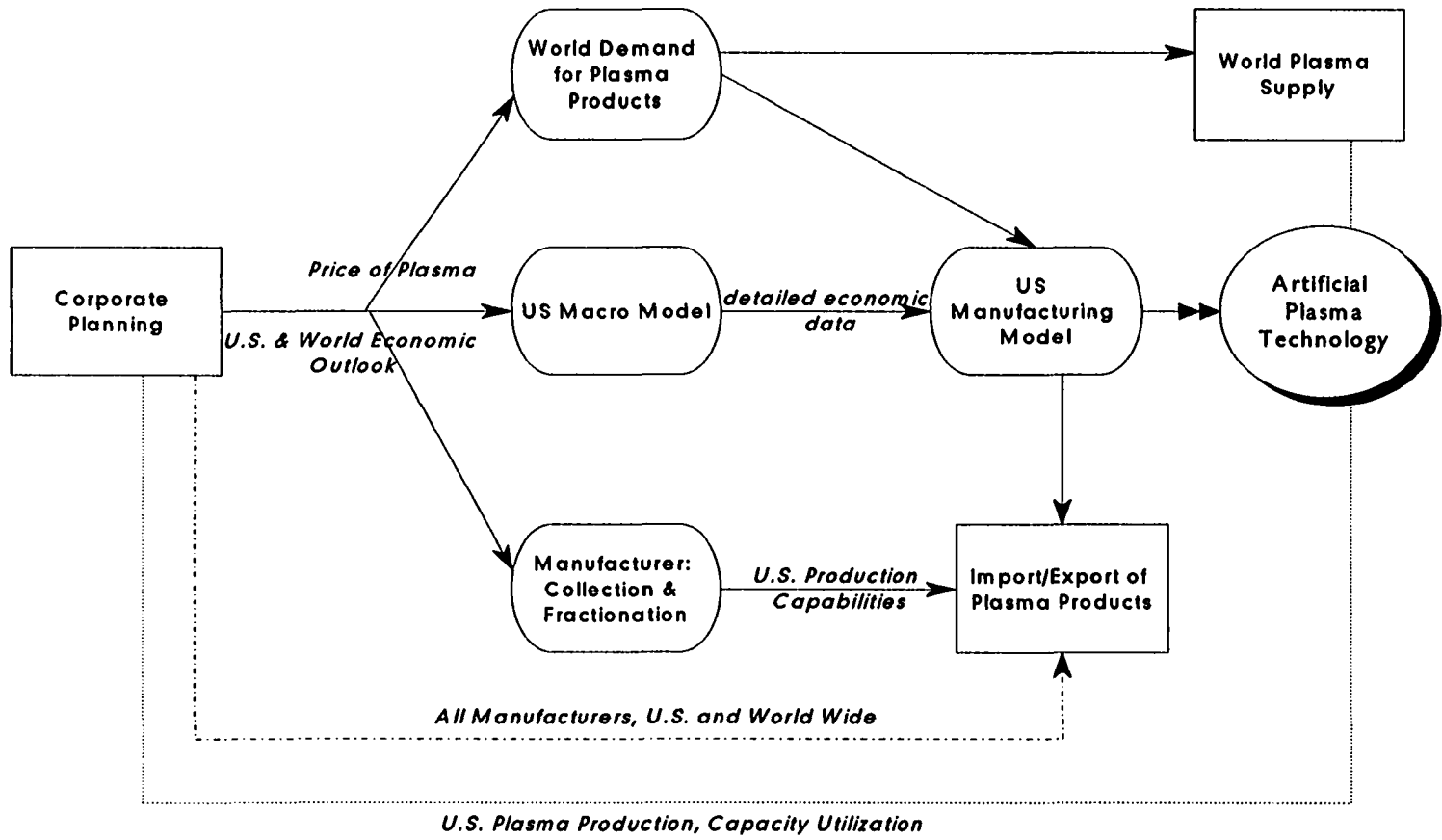
Figure 22. Scenario analysis for blood plasma products.

cycle is the development of external assumptions such as scenario analysis, which describes the outside world in which the organization competes.

Key environmental factors that are often included

1. <u>Macroeconomics</u>: GNP, inflation rate; interest rates.

2. <u>Political & Regulatory</u>: taxes; environmental; health and safety regulations.

3. <u>Donor Access</u>: liability & exposure.

4. <u>Industry:</u> Supply & Demand; prices; import/export balances; plant operating cycle is the development of external assumptions such as scenario analysis, which describes the outside world in which the organization competes.

Figure 22 represents a plasma fractionation scenario based on three models that are then used to construct a set of plasma demand, macroeconomics, and U.S. plasma production projections for each scenario

1. <u>The World Plasma Market</u>: This model uses plasma prices, GNP, inflation and inputs and provides plasma demand projections for the U.S. and Global markets.

2. <u>The U.S. Macroeconomics Model:</u> This also uses plasma prices, GNP, and inflation as inputs and projects the detailed economic data needed for subsequent steps by the corporate and operating planning group.

3. <u>The U.S. Fractionation Market</u>: This uses plasma

prices, interest rates, and inflation as inputs and calculates R & D costs and exploration expenditures at the level that maximizes the present value of R & D activities. The output is plasma and related yield production in the United States.

IV. INTERPRETATION OF DATA

Performance Benchmark Model (PBM)

Sample Data

The PBM uses comparative data from HCIA (Deloitte Touche) as a source for performance benchmarks. The comparative data describes 4,500 U.S. hospitals with 52 performance parameters. A longitudinal proprietary database from VHA, Inc. of over 800 U.S. not-for-profit hospitals composed of 2,500 performance measures for 1989 through 1994 was also used. The sample population of hospitals and integrated systems from VHA a not-for-profit hospital alliance is compared and tested against the benchmarks.

From a review of 55 previously published studies as reported by Ketchen, Thomas, and Snow (1993, p. 1282), data were used to develop a taxonomy of performance parameters that have relevance to operational excellence. From a review of these 55 studies a construct of categories was formed and a group of variables was selected, as shown in Tables 1, 2, and 3.

The Performance Benchmark Model (PBM) is composed of 13 variables in five categories (a) capacity and utilization, (b) patient and payer mix, (c) capital structure, (d) expenses and profitability, and (e) productivity & efficiency. This research has used the same five categories as the previously cited study, as they have the consensus of

an expert panel consisting of two strategic management and two health policy researchers (p. 1291).

Inductive Measures

Most of the configurational studies in strategic management have relied on inductively defined constructs and variables to measure the performance of strategic groups. A review of 55 previously published studies as reported by Kethcen, Thomas, and Snow (1993, p. 1282) was used to develop a taxonomy of performance parameters that have relevance to operational excellence. From a review of these studies a construct of categories was formed and a group of variables was selected.

In the managed care and accountable care phase of health care delivery, it is essential that the HCO control cost, deliver quality, and drive efficiencies within their systems. In this study the researcher has used five constructs crafted from the constructs and variables of those 55 research studies to develop an array of measures.

The categories include (Cleverly & Harvey, 1992):

1. capacity and utilization,

2. patient and payer mix,

3. capital structure,

4. expenses and profitability, and

5. productivity & efficiency.

These measures were selected for their relevance to performance and as suggested benchmarks as demanded by the managed care environment of the health care industry (Chilingerian, 1992). The use of comparative data to enhance the health care organization's performance in the health care marketplace is essential. These parameters are defining critical success factors and the demonstrated value demanded by the payers of covered lives (Cleverly, 1984). Definitions of Hospital Performance Measures used in this study to form a Performance Benchmark Model (PBM).

Capacity & Utilization

1. **Beds in Use**: The total number of beds in service in the inpatient acute care units of a hospital at the end of its fiscal year. Beds in service are those beds set up and staffed for use in the hospital, measuring the capacity or size of the hospital. The calculation is determined as follows.

A/B   A = Total Patient Days   B = Days in Period

2. **Occupancy Rate**: The ratio of a hospital's average daily census of inpatients in acute care beds to the average number of acute care beds in service, expressed as a percentage. The occupancy rate is a measure of the utilization of the capacity of the hospital. (Favorable values are above the median.) The calculation is determined as follows.

[Total Patient Days/(Days in Period * Beds in Use)] * 100

3. **Average Length of Stay**: The total number of acute care inpatient days in a hospital divided by the total number of acute care discharges from the hospital. A hospital's acute care average length of stay is a key indicator of utilization and clinical management, and is predictive of the average resources used by a hospital per patient discharge. (Favorable values are below the median.) The calculation is determined as follows.

A/B   A = Total Patient Days   B = Total Patient Discharges

Patient & Payer Mix

4. **Medicare Case Mix Index**: A measure of the complexity and costliness of the Medicare cases treated by an individual hospital relative to the complexity and costliness of the average Medicare patient nationwide. The Medicare case mix index is calculated using the Medicare diagnosis-related group (DRG) patient classification system, which classifies patients and assigns them DRG case weights that have been developed by the Health Care Financing Administration (HCFA) to measure relative resource consumption. It is a reasonable approximation of the complexity and costliness of all the hospitals' patients. The calculation is determined as follows.

A/B   A = CMI - Medicare   B = 100,000

Capital Structure

5. **Capital Cost Percentage**: The sum of capital-related operating costs expressed as a percentage of total operating expense. Capital costs as a percentage of operating expense is one measure of the relative amount of fixed costs at a hospital. It can serve as an indicator of the amount of risk that a hospital may face from recent changes in the reimbursement of capital costs under Medicare.
(Favorable values are below the median.)

Expenses and Profitability

6. **Operating Margin**: Is the most significant measure of profitability for a hospital. The difference between a hospital's total operating revenue and total operating expense, expressed as a percentage of its total operating revenue. The operating profit margin is a measure of a hospital's profitability with respect to its patient care services and operations. (Favorable values are above the median.) The calculation is determined as follows.

$$(\text{Operating Profit or Loss}/\text{Total Net Operating Revenue}) * 100$$

7. **Return on Total Assets % Annualized**: A profitability indicator that is a measure of total return (including non-operating revenue) on the capital invested in facility operations. (Favorable values are above the median.) The calculation is determined as follows.

$$[(\text{Net Profit or loss} *(365/\text{Days in Period}))/\text{Total Assets}] *100$$

8. **Return on Equity % Annualized:** A profitability indicator that is a measure of the amount of net income earned per dollar of equity investment. (Favorable values are above the median.) The calculation is determined as follows.

[(Net profit or Loss *(365/Days in Period))/Equity]* 100

9. **Net Charges Per Adjusted Discharge:** A profitability indicator that is a measure of revenue at net charges per discharge adjusted for the proportion of hospital outpatient business. (Favorable values are above the median.) The calculation is determined as follows.

(Net Patient Revenue * 1,000)/Adjusted Discharges

10. **Cost Per Adjusted Patient Day:** A measure of total hospital operating expense per patient day, adjusted for the proportion of hospital outpatient business. (Favorable values are below the median.) The adjusted patient day is calculated by:

Total Patient Days *(Gross Patient Charges/Total Gross Inpatient Charges)

To then determine the Cost per Adjusted Patient Day:

(Total Operating Expense * 1,000)/Adjusted Patient Days

11. **Cost Per Adjusted Discharge:** The total hospital cost per discharge, adjusted for the proportion of hospital outpatient business. To determine the adjusted discharge the calculation is determined as follows. (Favorable values would be below the median.)

Total Patient Discharges * (Gross Patient Charges/Total Gross Inpatient Charges)

The formula to determine Cost per Adjusted Discharge is

(Total Operating Expense * 1,000)/Adjusted Discharge

12. **Supply Cost Per Adjusted Discharge**: The material management indicators focus on overall hospital supply cost and materials management labor cost. This is a measure of total supply cost relative to inpatient discharges adjusted for outpatient activity. (Favorable values are below the median.) The calculation is determined as follows.

(Supply Expense * 1,000)/Adjusted Patient Discharges

Productivity and Efficiency

13. **FTE Per Adjusted Occupied Bed:** The total number of full-time equivalent personnel in a hospital divided by the hospital's adjusted average occupied bed count. Favorable values are below the median. This is a measure of hospital labor utilization adjusted for the proportion of hospital outpatient business. (Favorable values are below the median.) The calculation is determined as follows.

$$[(A+B)*C)/(D*(E/F))]/[(G/E)*(H/I)]$$

A = Total Paid Hours (1,000s)
B = Contracted Hours Worked (1,000s)
C = 1,000
D = 2,080
E = Days in Period
F = 365
G = Total Patient Days
H = Gross Patient Charges
I = Total Gross Inpatient Charges

Analysis of Data: An Array of Measures

Three primary indicators of organizational efficiency and profitability are the capital cost percentage, operating margin and the return on total assets. These are dependent variables affected by the performance of several independent variables, which act as drivers of operational efficiencies. In Table 10 the VHA Integrated Delivery System configuration is compared to the general population of system-affiliated non-profit hospitals. The interaction of these parameters have a synergistic impact on organizational effectiveness.

A review of the performance indicators would suggests that capacity and utilization are lower for the general population of non-profit system-affiliated hospitals with a payer case mix index that indicates higher acuity levels. The lower utilization parameters are a drag on the operating margin and return on total assets. These are also reflected with lower net charges per adjusted discharge, which impacts profitability.

Testing Hypothesis One

The student t-test for testing the differences between means was performed on the capital cost percentage, operating margin and return on total assets to test the hypothesis "The VHA integrated workgroup of hospitals configured as an integrated delivery system (IDS) is operationally more efficient than the general population of system affiliated hospitals."

Table 10

1993 Comparative Data: VHA - Integrated Delivery Systems vs All NP system-affiliated HCOs

1993 Hospital Performance Parameters	Average	IDS VHA-HCO Median	Std. Dev	System Affiliated NP HCO 50th Percentile
Capacity & Utilization				
Beds in Use	411.72	403.5	207.598	323
Occupancy Rate	62.99	67.05	13.5148	50.9
Average Length of Stay	5.39	5.355	1.15787	4.91
Count		8		453
Patient & Payor Mix				
Case Mix Index	1.17	1.14	0.14217	1.27
Capital Structure				
Capital Cost Percentage	10.09	8.89	3.32978	7.78
Expenses and Profitability				
Operating Margin	3.15	4.13	5.44869	3.16
Return on Total Assets % Annualized	6.69	6.915	6.15987	4.54
Return on Equity % Annualized	10.23	11.305	15.8825	n/a
Net Charges Per Adjusted Discharge	6822.61	6805.24	1317.74	5064
Cost per Adjusted Patient Day	1311.02	1423.71	328.87	999.80
Cost per Adjusted Discharge	6809.38	6376.61	1480.37	4909
Supply Cost per Adjusted Discharge	1010.06	905.67	284.21	1690.66
Productivity & Efficiency				
FTE per Adjusted Occupied Bed	5.61	5.68	1.06	5.08

For comparative purposes, note that data from HCIA/DeLoitte Touche ~ VHA DCRS regarding:
Operating Revenue Per Adj. Discharge = Net Charges Per Adjusted Discharge
Operating Expense per Adjusted Discharge/Average Length of Stay = Cost per adjusted Patient Day
Operating Expenser per Adjusted Discharge = Cost per Adjusted Discharge
(%Overhead Expense) X Operating Expense per Adj. Discharge = Supply Cost per Adj. Discharge

Capital Cost Percentage

The research question is stated as $\mu_{VHA\,IDS} > \mu_{NP\,SAHCO}$.

Where the null hypothesis is stated as H_0 $\mu_{VHA\,IDS} \leq \mu_{NP\,SAHCO}$, and

the alternative hypothesis is stated as $\mu_{VHA\,IDS} > \mu_{NP\,SAHCO}$.

Statistical Test: <u>One Sample t-test for difference between</u>

<u>means</u>

One-tailed test
α = .10   t $\geq$ 1.9621
n = 8 μ = 7.780

$\overline{X}$ = 10.9
s = 3.3298   critical value = $\dfrac{\overline{X} - \mu}{\dfrac{s}{\sqrt{N}}}$ = 1.4150
df = 7

Reject the null hypothesis at the .10 level of

significance because t of 1.962180 is >= the critical value

of 1.41500 Support the alternate hypothesis that capital

cost percentage is higher. The general population of

system-affiliated hospitals have a more efficient fixed cost

structure. The P value is between .050 and .025

Operating Margin and Return on Total Assets

The t-test supported the null hypothesis for both

parameters. This would indicate there is no statistical

difference between groups for these indicators. A review

of the operating margin would indicate that both groups are

equal with relative values of 3.15% and 3.16%. The return

on total assets is better for VHA at 6.69% versus 4.54%

however the statistical tests indicate there is no

statistical difference (a large standard deviation is a

significant factor).

Capacity & Utilization, Expenses & Profitability, Productivity & Efficiency

These parameters were tested using the student t-test.

These performance indicators proved to be statistically

significant. However in the overall analysis both strategic

groups are similar in their general performance.

Analysis

Conclusions are based on the assumption that all

indicators are interrelated and holistic in the sense that

they are components of a larger system. In that light the

VHA Integrated Delivery System model is similar in

operationally efficiency to the general population of

system-affiliated non-profit hospitals.

Table 11

1993 Performance Data: VHA Health Care Organizations vs All Non-Profit Health Care Organizations

1993 Hospital Performance Parameters	Average	VHA-HCO Median	Std. Dev	NP-HCO 50th Percentile
Capacity & Utilization				
Beds in Use	295.45	264	179.984	305
Occupancy Rate	61.3	62.3	13.34	65.05
Average Length of Stay	6.05	5.82	2.2312	5.63
Count		417		493
Patient & Payor Mix				
Case Mix Index	1.1	1.08	0.177797	1.25
Capital Structure				
Capital Cost Percentage	9.35	9.14	2.98612	8.26
Expenses and Profitability				
Operating Margin	3.65	3.95	7.70393	3.55
Return on Total Assets % Annualized	8.13	6.76	21.1462	4.33
Return on Equity % Annualized	10.26	10.175	21.4164	n/a
Net Charges Per Adjusted Discharge	6009.5	5707.43	2168.00	6117
Cost per Adjusted Patient Day	1053.01	979.35	1404.51	1049.56
Cost per Adjusted Discharge	5978.32	5675.4	2234.83	5909
Supply Cost per Adjusted Discharge	958.36	885.32	442.43	1580.85
Productivity & Efficiency				
FTE per Adjusted Occupied Bed	5.12	5.04	0.99472	5.13

For comparative purposes, note that data from HCIA/DeLoitte Touche ~ VHA DCRS regarding:

Operating Revenue Per Adj. Discharge = Net Charges Per Adjusted Discharge

Operating Expense per Adjusted Discharge/Average Length of Stay = Cost per adjusted Patient Day

Operating Expenser per Adjusted Discharge = Cost per Adjusted Discharge

(%Overhead Expenses) X Operating Expense per Adj. Discharge = Supply Cost per Adj. Discharge

Three primary indicators of organizational efficiency and profitability are the capital cost percentage, operating margin and the return on total assets. These are dependent variables affected by the performance of several independent variables, which act as drivers of operational efficiencies. The interaction of these parameters have a synergistic impact on organizational effectiveness. In Table 11 on page 143 the alliance of VHA non-profit health care organizations (HCOs) are compared to the general population of non-profit hospitals.

A review of the performance indicators would suggests that capacity and utilization are marginally lower for the VHA HCOs with a payer case mix index that indicates lower acuity levels. Certain costs are lower and FTEs are essentially the same. Overall both strategic groups are similar in operational performance.

Testing Hypothesis Two

The z-test for testing the differences between means was performed on the capital cost percentage, the operating margin, and return on total assets to test the hypothesis that "The VHA alliance of non-profit health care organizations are operationally more efficient than the general population of non-profit health care organizations of similar size."

Return on Total Assets:

The research question is stated as $\mu_{VHA\ HCO} > \mu_{NP\ HCO}$.
Where the null hypothesis is H_0 $\mu_{VHA\ HCO} \leq \mu_{NP\ HCO}$, and the
alternative Hypothesis is stated as $\mu_{VHA\ HCO} > \mu_{NP\ HCO}$.
Statistical Test: <u>One Sample z-test for difference between
means</u>

One-tailed test
α = .10 $z \geq$ 1.282
n = 417 μ = 4.33
$\overline{X}$ = 8.13
s = 21.1462   critical value = $\dfrac{\overline{X} - \mu}{\dfrac{s}{\sqrt{N}}}$ = 3.669605

Reject the null hypothesis at the .10 level of
significance because z of 3.669605 is >= the critical value
of 1.2820 Support the alternate hypothesis that the return
on total assets is higher. The alliance of VHA non-profit
hospitals have a higher ROTA% than the general population of
non-profit hospitals. The P value is 0.000124

Operating Margin & Capital Cost Structure

The z-test supported the null hypothesis for both
parameters. This would indicate there is no statistical
difference between groups for these performance indicators.
Both strategic groups are similar in their performance.

Capacity & Utilization, Expenses & Profitability, Productivity & Efficiency

The parameters were tested using the z-test. This hypothesis testing proved there is no statistical significance in the overall performance of the VHA health care organization compared to the general population of non-profit hospitals.

Analysis

The researcher views the multivariate parameters as interrelated and holistic measures. In the sense that they are components of a larger system and when taken together display patterns of phenomena. The test of hypothesis two suggests that both organizational configurations are similar in performance. When a population sample of single entity hospitals from the VHA hospital alliance is compared to a population sample of the general population of similar not-for-profit hospitals, we find no significant difference in their financial performance when viewed in total.

Table 12

1994 Comparative Data: VHA Integrated Delivery Systems vs
VHA Traditional Single Entity Health Care Organizations

1994		IDS VHA-HCO			VHA HCO	
Hospital Performance Parameters	Average	Median	Std. Dev	Average	Median	Std. Dev
1. Capacity & Utilization						
2. Beds in Use	286.64	273.5	231.605	282.43	257	171.162
3. Occupancy Rate	57.65	63.725	15.5185	59.14	60.33	14.03
4. Average Length of Stay	5.29	4.8595	1.60462	6.05	5.82	2.2312
Count		11			408	
Patient & Payor Mix						
5. Case Mix Index	1.15	1.1	0.15574	1.1	1.07	0.17821
Capital Structure						
6. Capital Cost Percentage	9.19	8.49	2.87061	9.43	9.2	2.77089
Expenses and Profitability						
7. Operating Margin	4.44	5.355	8.08744	3.74	3.92	6.20316
8. Return on Total Assets % Annualized	10.06	9.27	8.18447	7.69	6.64	25.9727
9. Return on Equity % Annualized	21.8	14.79	19.1352	9.08	9.63	30.482
10. Net Charges Per Adjusted Discharge	6785.22	6408.17	1351.11	6000.77	5713.97	2479.12
11. Cost per Adjusted Patient Day	1326.38	1426.09	422.39	1068.95	1033.45	332.16
12. Cost per Adjusted Discharge	6679.84	6148.26	1756.21	5957.46	5645.18	2522.96
13. Supply Cost per Adjusted Discharge	969.03	903.38	250.54	964.32	896.66	427.72
Productivity & Efficiency						
13. FTE per Adjusted Occupied Bed	5.31	5.68	1.06	5.36	5.095	4.83238

Testing Hypothesis Three

The z-test for testing the differences between means
was performed on the operating margin, return on total
assets, and return on equity (Table 12) to test the
hypothesis "The single entity non-profit hospitals of the

VHA alliance are operationally less efficient than the
Integrated Delivery Systems of the VHA alliance." The
hypothesis was tested from this perspective due to the large
sample population of 408 hospitals.

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Operating Margin:

The research question is stated as $\mu_{VHA\ HCO} < \mu_{VHA\ IDS}$.
Where the null hypothesis follows H_0 $\mu_{VHA\ HCO} \geq \mu_{VHA\ IDS}$, and the
alternative hypothesis is $\mu_{VHA\ HCO} < \mu_{VHA\ IDS}$.
Statistical Test: <u>One Sample z-test for difference between
means</u>

One-tailed test
α = .10 $z \geq$ -1.282
n = 408 μ = 4.44
$\overline{X}$ = 3.74
s = 6.2031   critical value = $\dfrac{\overline{X} - \mu}{\dfrac{s}{\sqrt{N}}}$ = -2.279394

Reject the null hypothesis at the .10 level of
significance because z of -2.279394 is >= the critical value
of -1.2820 Support the alternate hypothesis that the
operating margin is lower. The alliance of VHA non-profit
hospitals has a lower operating margin than the integrated
delivery system model. The P value is 0.011328

Return on Total Assets & Return on Equity

The z-test supported the null hypothesis for both
parameters. This would indicate there is a statistical

difference between groups for these performance indicators. The integrated delivery system model is more profitable than the traditional HCO structure.

Capacity & Utilization, Expenses & Profitability, Productivity & Efficiency

The parameters were tested using the z-test. This hypothesis testing proved there is statistical significance in the overall performance of the integrated delivery system model versus the traditional health care organization.

Analysis

Conclusions are based on the assumption that all indicators are interrelated and holistic in the sense that they are components of a larger system. It is essential to analyze patterns of behavior and evaluate the data pertinent to the whole rather than in fragmented and isolated events as suggested by Chaos theory regarding "complex systems" (Waldrop, 1992).

In that light the hypotheses support the organizational configuration of the Integrated Delivery System (IDS) model as a more effective and efficient than the traditional single-entity health care organization. The development of horizontally and vertically integrated systems is a viable evolutionary strategic group response to a turbulent and volatile industry environment.

Performance Validation Model (PV)

Sample Data

To test hypothesis four, only firms in a single industry, computers, were chosen (Chakravarthy, 1986). The computer industry had the highest representation of "excellent" firms (seven) among the industries studied. The seven firms tested are IBM, Hewlett Packard (HP), Digital Equipment Corporation (DEC), National Cash Register (NCR), Amdahl, Wang, and Data General. This sample of seven firms was expanded to include seven other "non-excellent" firms Burroughs, Control Data (CDC), Sperry, Honeywell, Prime Computers, Cray, and Commodore. They were chosen since they did not appear on the short list proposed by industry experts in the Peters and Waterman study. Their corporate reputations were ranked lower in the Fortune survey of January 10, 1983. Data available from COMPUSTAT was selected for the period of 1964 through 1980 to coincide with the Peters and Waterman study.

Testing Hypothesis Four

After considering the nature of the problem and the purpose of this research regarding a performance validation measure, a multiple discriminant analysis (MDA) known as the Altman Z value was chosen as the appropriate statistical technique for this component of the model. It is used to

measure the severity of the turnaround situation and was
computed for each firm over a fifteen-year timeframe. This
measure produces a performance value that is predictive of
the financial health of the organization (Walter, 1959) and
is appropriate as a comparative measure of strategic group
membership.

Peters and Waterman (1982) defined organizations that
were "excellent" based on their superior fit between the
McKinsey 7-S model (strategy, structure, systems, style,
shared-values, staff and skill) and their environment.

> **Hypothesis 4:** Excellent organizations (X) will
> demonstrate a predictor value significantly greater
> than non-excellent organizations (Y).

$$Hd: \mu_{X \ Z\text{-}value} > \mu_{Y \ Z\text{-}value}$$

They listed sixty-two firms that met benchmarks for
industry performance over a twenty-year period, 1960 - 1980;
compound asset growth, compound equity growth, ratio of
market to book value, average return on total capital,
average return on equity, and average return on sales. Data
in Table 13 lists the Z-values for the period of 1964-1980.
These firms are revisited in the population of firms
examined from 1980-1994 for testing of hypothesis six.

Table 13
Z Scores for the Years 1964 - 1980

Excellent Companies (X)	1964	1966	1970	1975	1977	1979	1980
Amadahl					6	3.47	5.13
Data General			23.82	10.35	5.05	4.39	4.12
DEC		8.58	11.62	8.56	6.07	5.04	5.35
HP	12.18	10.44	10.13	11.65	7.14	6.44	7.65
IBM	11.38	11.93	11.37	8.29	7.22	5.34	5.31
NCR	3.93	3.94	2.25	2.19	2.87	3.34	3.19
Wang			14.95	2.96	3.67	5.26	5.7
Non-Excellent Companies (Y)							
Burroughs	2.08	3.65	2.93	3.67	4.17	3.97	2.52
Commodore				1.97	2.86	4.14	8.83
Control Data	5.04	1.94	1.74	1.59	2.06	2.6	3.04
Cray Research					8.21	12.55	18.64
Honeywell	5.31	3.9	2.42	2.17	2.89	3.26	3.44
Prime Computer				3.08	4.88	4.65	9.36
Sperry	2.89	3.73	3.12	3.15	2.81	3.09	2.93
		Excellent	Non-Excellent				
	Mean	7.20675	4.237949		p<0.10		
	Median	5.85	3.12				
	Std. Dev	4.205749	3.236469				

Organizations Z Value scores

The research Question is stated as $H_1\ \mu_{X_{Z\ Value}} > \mu_{Y_{Z\ Value}}$.

Where the null hypothesis is $H_0\ \mu_{X_{Z\ Value}} \leq \mu_{Y_{Z\ Value}}$, and the alternative hypothesis is $H_A\ \mu_{X_{Z\ Value}} > \mu_{Y_{Z\ Value}}$.

Statistical Test: <u>Two sample t-test for difference between means</u>

One-tailed test
α = .10

Sample 1.   Sample 2.
n = 7   n = 7

$\overline{X}$ = 7.2067 $\overline{X}$ = 4.23790
s = 4.2057   s = 4.2057

$$s^2 = 17.68791 \qquad\qquad s^2 = 10.47428$$

$$df = 12$$

$$t \geq 1.480119$$

$$\text{critical value} = \frac{\overline{X} - \mu}{\dfrac{s}{\sqrt{N}}} = 1.3560$$

Reject the null hypothesis at the .10 level of significance because t of 1.480119 is >= the critical value of 1.41500 Support the alternate hypothesis that Z Values are greater for excellent firms and that excellent firms have greater financial strength than non-excellent firms. The P value is between .10 and .05 According to Sproull, in exploratory research an alpha (probability) value of .10 is common (1988, pg. 61).

Sample Data

To test hypothesis five the population sample is composed of the 97 companies used to test hypothesis six (see Table 17). Key word identifiers such as "top management change" or "the company's management structure was changed..." were used to ascertain CEO changes by searching the various databases and information sources. Table 14 on page 153 presents a cross tabulated form of the hypothesis, using a contingency table in which the observations are summarized and examined.

It is suggested that organizations in decline will need

to change leadership, strategic direction, and resource allocation, to successfully adapt to the environment as demonstrated by increasing operational performance and turnaround success. The content analysis of secondary data will indicate the organization's response to decline.

Testing Hypothesis Five

It is hypothesized that organizations experiencing decline who replace the CEO are more likely to succeed. A contingency analysis will be used to test this proposition. The criteria for the identification of change included a statement to that effect in the literature. The search process used annual reports, 10k reports, letters to stockholders, and Standard and Poor's Register of Corporations, Directors, and Executives to confirm changes.

> **Hypothesis 5:** Organizations (X) demonstrating a performance decline who replace the CEO will be more successful at organizational renewal and turnaround than those Organizations (Y) which do not.

$$Hd: \mu_{X \, +1 \, CEO} > \mu_{Y \, +0 \, CEO}$$

The results provide strong support for this hypothesis where the data indicates that 58.76% of organizations in decline changed the top management position of CEO where this change produced a 71.83% successful turnaround rate. In those organizations that had a performance decline and did not replace the CEO, 76.92% were unable to turnaround

the decline. The combined success rate for both groups at turnaround was 73.20% to an ROIC level of pre-decline from the baseline measurement of ROIC at Time-1.

Table 14
Contingency Analysis of CEO Change

ROIC t-Decline = >ROIC t-Turnaround			
	Non-Turnaround	Turnaround	**Total**
CEO Change	6	51	57
% of category	23.08%	**71.83%**	58.76%
% of total	6.19%	52.58%	
No CEO Change	20	20	40
% of category	76.92%	**28.17%**	41.24%
% of total	20.62%	20.62%	
Total	26	71	97
	26.80%	73.20%	100.00%

Testing Hypothesis Six

To test hypothesis six, select financial ratios from the population sample of 132 organizations were examined. After analyzing the data this population was reduced to 97 companies, Table 17. The logical extension of hypothesis six is to examine the relative extent to which restructuring is pursued through asset versus cost reduction. In this manner the effectiveness of various tactical strategies and their impact on the organization can be measured.

Hypothesis 6A: The degree of organizational retrenchment is positively correlated to the measure of turnaround success.

Hypothesis 6B: The focus of organizational restructuring produces significantly different results.

Hypothesis 6C: The correlation between the degree of retrenchment and turnaround success is greater in severe turnaround situations.

Hypothesis 6D: The correlation between the degree of retrenchment and turnaround success is greater in retrenchers than non-retrenchers in turnaround situations.

These hypotheses are the essence of strategy design development by quantifying the multiple variables of measurement. They establish a theoretical perspective and support a general strategy of tactical and functional decisions for turnaround based on an empirical examination of historical data over a 15. That general strategy is presented in Figure 2. It postulates a process flow of actions that the research supports. It suggests a high degree of confidence in the reversal of performance decline through the execution of these tactical axioms.

Analysis and Results

Retrenchment strategies were operationalized as the net reduction in costs and/or assets between time-2 and time-3. The points of data measurement for each organization was determined by four events (a) the year of peak performance

prior to a performance decline as measured by ROI, (b) the

year of greatest value decline as measured by ROIC, (c) the

year both asset and cost reductions cease as measured by the

impact on ROA and ROS, and (d) the year firm achieves

turnaround as reflected in a unity value,

MkBk >= 1, with a corresponding return to ROI at time-1.

Framing the data with these conventions allows the

classification of organizations into groups of strategic

change behavior. Through the analysis of organizations

identified in the literature and in previous studies of

turnaround and performance strategies, the researcher has

empirically tested the impact of four key tactics:

1. Asset and cost retrenchment,

2. Cost retrenchment only,

3. Asset retrenchment only, or

4. Neither tactic used.

Hypothesis 6A used a regression analysis of cost and

asset retrenchment against turnaround performance as

measured using two independent variables (ROA & ROS) and one

dependent variable of turnaround performance (ROIC),

measured as the net changes between time-2 and time-4. The

proposition for the regression procedure was that

retrenchment variables will significantly predict turnaround

performance. The statistical test used the least-square

criterion to produce estimates that are the best linear

unbiased estimates under classical assumptions (Neter & Wasserman, 1974). The model yielded an R-square of 0.60778 that indicates a significant fit between the model and the data (ROIC to ROS & ROA as shown in Table 15).

The correlation value for ROIC to ROS is .56478 while the correlation of ROIC to ROA is .77956 This indicates a strong relationship between the dependent (ROIC) and independent (ROS & ROA) variables with turnaround performance.

Hypothesis 6B tests mean performance compared in pair wise t-tests across the levels of retrenchment where organizations that initiated both cost and asset retrenchment had a significantly higher mean level of turnaround performance (21.3%) than firms that achieved no asset or cost retrenchment (2.2%). The research question is stated as H_1 $\mu_{X_{ROIC\ mean}} > \mu_{Y_{ROIC\ mean}}$. Where the null hypothesis is H_0 $\mu_{X_{ROIC\ mean}} \leq \mu_{Y_{ROIC\ mean}}$ and the alternative hypothesis is stated as H_A $\mu_{X_{ROIC\ mean}} > \mu_{Y_{ROIC\ mean}}$. Statistical Test: Two sample t-test for difference between means

One-tailed test
α = .05

Sample 1.	Sample 2.
n = 48	n = 25
$\overline{X}$ = 21.3	$\overline{X}$ = 2.2
s = 12.4	s = 30.3
s^2 = 153.76	s^2 = 918.09

df = 71

t ≥ 3.814592

$$\text{critical value} = \frac{\overline{X} - \mu}{\frac{s}{\sqrt{N}}} = 1.6450$$

Reject the null hypothesis at the .05 level of significance because t of 3.814592 is >= the critical value of 1.6450 Support the alternate hypothesis that the ROIC mean is greater for cost and asset retrenchers than for non-retrenchers. The P value = .00006

Hypotheses 6C examines severity of decline correlated to the tactical response. An Altman Z value index was used to dichotomize 58 firms into high or low severity, based on the Z value. At time-1 of decline the average Z-value was 1.238 with a mean ROIC of -4.5% Through the use of costs and asset retrenchment the average z-value at turnaround was 2.345 with a mean ROIC of 18.6%, (see Table 15). These results demonstrated a significant relationship between both cost and asset retrenchment and performance for the group of organizations with the highest severity rating. Both of these tactics are significantly associated with successful turnaround for firms in severe situations.

With regard to **Hypothesis 6D** the data suggests a positive correlation between ROIC, ROA, and ROS, as shown in Table 15. There is a high degree of correlation in determining what relationships are predictive indicators of

the various strategies for retrenchment. Retrenchers

attained an average ROIC of 19.7% compared to 2.2% for the

non-retrenchers, as shown in Table 16, which demonstrates a

significant difference in mean levels of improvement.

Table 15
Sample Population, Turnaround Measurements and
Z-values with Regression Output

Sample Population (n = 97)	Turnaround ROIC	Turnaround ROS	Turnaround ROA	Turnaround Z-Value	Decline ROIC	Decline ROS	Decline ROA	Decline Z-Value
Median	0.171	0.040	0.037	1.807	0.064	0.008	0.009	1.563
Mean	0.173	0.028	0.035	2.901	0.040	-0.011	-0.002	2.240
Std. Deviation	0.242	0.081	0.075	4.590	0.308	0.114	0.119	2.455

Regression Output: (ROIC to ROS & ROA)			Regression Output: (ROIC to ROS & ROA)		
Constant	0.08630839		Constant		0.045441
Std Err of Y Est	0.15383805		Std Err of Y Est		0.202876
R Squared	0.60778662		R Squared		0.578566
No. of Observations	97		No. of Observations		97
Degrees of Freedom	95		Degrees of Freedom		95
X Coefficient(s)	0.03582816	2.47609929	X Coefficient(s)	0.1575402	1.849206
Std Err of Coef.	0.27563934	0.2954282	Std Err of Coef.	0.2796992	0.268325
Correlation ROIC – ROS	0.56478		Correlation ROIC – ROS		0.60833
Correlation ROIC – ROA	0.77956		Correlation ROIC – ROA		0.75972

There is a positive correlation between ROIC, ROA, and

ROS relative to ROIC for groups A, B, C, and D. This

analysis would suggest there is a high degree of correlation

in determining what relationships are predictive indicators

of the various strategies for retrenchment. Table 15

examines how ROIC relates to turnaround success and what

Table 16
Analysis by Degree of Retrenchment and 2-tailed
t-test for Difference Between Means

Degree of Retrenchment		Grouping:	N	ROIC Mean:	Median	Std. Dev.
Number of observations in data set = 97		Grouping:	N	ROIC Mean:	Median	Std. Dev.
Levels = 4 Values = 1, 2, 3, 4		A	47	0.213	0.185	0.124
Severity index: Altman Z-value		B	20	0.163	0.147	0.078
Dependent Variables: ROIC		C	4	0.196	0.202	0.064
Independent Variables: ROA and ROS		D	26	0.022	0.066	0.303
2-tailed t-test for difference between means						
Alpha = .05 Reject Null t >= CV		A = Cost & Asset retrenchment: [+% on ROS & ROA]					
Df = 96 CV = 1.6450		B = Cost retrenchment only: [+% on ROS]					
P = .0006 t = 4.19732D		C = Asset retrenchment only: [+% on ROA]					
Retrenchers (n = 71) ROIC = .197		D = neither tactic used: Insignificant +/- % ROS & ROA					
Non-retrenchers (n = 26) ROIC = .022						
Accept hypothesis that the ROIC of retrenchers is >than the ROIC of non-retrenchers.						

strategy it test. ROIC is a measure of costs containment
(CGS + SGA + Dep.) and asset utilization (Assets + Inventory
+ Receivables + Working Capital) represented by a ratio that
is indicative of growth in shareholder value. As indicated
by the equation:

ROIC = ROS X CT

ROS (return on sales)   = Costs variable

CT (capital turnover)   = Asset variable

Discussion and Implications

It has been demonstrated in previous research that
retrenchment is a necessary and indispensable process in
achieving turnaround. As suggested by these previous
studies further research was suggested to examine the

principles in a broader context of cross-sectional industry population samples. This research has done that and examined the success of varying retrenchment strategies correlated to severity of decline and turnaround as representative in this study. The empirical evidence would suggest the following tactical implications of strategic management in performance decline:

1. Severe performance decline as indicated by an eroding z-value of < 2.1 will require strong costs and asset retrenchment.

2. Moderate performance decline as indicated by an eroding z-value of < 2.4 will benefit from costs control and reduction. Asset retrenchment is necessary if costs control measures are ineffective.

3. Performance growth as indicated by an increasing z-value of > 2.675 will be fueled by strategies of efficiency and expansion.

This research supports a theory of value-based management that is central to managing by the balance sheet. The critical dependent variable in this study is ROIC for it is the benchmark of value creation and a key metric for performance evaluation of corporate performance.

Table 17
Population of Organizations in Study

		Organizations and Years for Data Collection			
Alco Standard	1980-1994	General Electric	1980-1994	Prime Computer	1980-1994
Allegheny International	1980-1994	General Motors	1980-1994	Proctor & Gamble Company	1980-1994
Allied Products	1980-1994	General Signal	1980-1994	Proteon Inc.	1980-1994
Allis-Chalmers	1980-1994	General Tire & Rubber	1980-1994	Raytheon	1980-1994
AM International Inc.	1980-1994	Gulf & Western	1980-1994	Revere Copper & Brass Inc.	1980-1994
Amdahl	1980-1994	Halliburton	1980-1994	Robintech Inc.	1980-1994
Amax	1980-1994	Harsco	1980-1994	Rockwell International	1980-1994
American Brands	1980-1994	Hartmarx	1980-1994	Rollins	1980-1994
American Express	1980-1994	Hewlett Packard	1980-1994	Salant Corporation	1980-1994
American Home Products	1980-1994	Hills Stores	1980-1994	Santa Fe Railroads	1980-1994
Apple Computer	1980-1994	Household International	1980-1994	Scott Paper Company	1980-1994
Aqualon	1980-1994	IBM	1980-1994	Seagram	1980-1994
ARMCO	1980-1994	IC Industries	1980-1994	Sears Roebuck	1980-1994
Barclays	1980-1994	Interco	1980-1994	Shoney's Inc.	1980-1994
Baxter Healthcare Corporation	1980-1994	ITT	1980-1994	Southdown	1980-1994
Benetton's	1980-1994	K-Mart	1980-1994	Sperry	1980-1994
Borg-Warner	1980-1994	Leaseway Transportation	1980-1994	Standex	1980-1994
Brunswick	1980-1994	Leisure Dynamics	1980-1994	Storage Technology Corp	1980-1994
Burroughs	1980-1994	Lionel Corporation	1980-1994	Tambrands	1980-1994
Carson Pirie Scott & Co.	1980-1994	Litton Industries	1980-1994	Teledyne	1980-1994
Commodore	1980-1994	Lotus Development Corporation	1980-1994	Tenneco	1980-1994
Consolidated Food	1980-1994	LTV	1980-1994	The Limited	1980-1994
Continental Airlines	1980-1994	Manville Corporation	1980-1994	Tiffany & Company	1980-1994
Continental Plastic Containers, Inc.	1980-1994	Martin Marietta Corp.	1980-1994	Time Warner	1980-1994
Control Data	1980-1994	Mellon Bank	1980-1994	TransAmerica	1980-1994
Corning Glass Works	1980-1994	Minnesota Mining & Mfg.	1980-1994	Triarc Companies	1980-1994
Cray Research	1980-1994	Modern Handcraft Inc.	1980-1994	TRW	1980-1994
Curtiss-Wright	1980-1994	Morrison Knudson	1980-1994	Union Carbide	1980-1994
Data Access Systems Inc.	1980-1994	National Distil. & Chem.	1980-1994	United Airlines	1980-1994
Data Genera	1980-1994	National Services Ind.	1980-1994	United Dominion	1980-1994
Dell Computer	1980-1994	NCR	1980-1994	United Technologies	1980-1994
Detroit Diesel	1980-1994	NEC Technologies	1980-1994	UNR Industries Inc.	1980-1994
Digital Equipment	1980-1994	NL Industries	1980-1994	USX	1980-1994
Dime Savings Bank	1980-1994	Northrop	1980-1994	Vulcan Materials	1980-1994
Dover	1980-1994	Northwest Airlines	1980-1994	Walter (Jim)	1980-1994
Eastman Kodak	1980-1994	Norton	1980-1994	Wang	1980-1994
Easton	1980-1994	NVF	1980-1994	Warner Communications	1980-1994
Emerson Electric	1980-1994	Occidental Petroleum	1980-1994	Westinghouse	1980-1994
Federal-Mogul Corp.	1980-1994	Ogden	1980-1994	Wheeling-Pittsburgh Steel	1980-1994
Figgie International	1980-1994	Oryx Energy Company	1980-1994	Whirlpool	1980-1994
Fuqua Industries	1980-1994	Pfizer	1980-1994	Whittaker	1980-1994
GAF	1980-1994	Phoenix Steel Corporation	1980-1994	Wickes Cos Inc.	1980-1994
GATX	1980-1994	Poloron Products Inc.	1980-1994	Winnebago Industries	1980-1994
Gemini Industries	1980-1994	PPG	1980-1994	Zapata	1980-1994

Valuation Models (VMI & VMM)

This research has examined an array of measures composed of select performance indicators for validating the theoretical constructs of deductive strategy. These performance parameters are viewed as predictors of success. Additionally, we must ask what value has the CEO delivered to the organization? Or, what value has the board generated for the shareholders? Along with these predictors we must analyze what shareholder value has been created to complete the process.

This researcher proposes a methodology for measuring shareholder value, and using it as a primary performance indicator. This valuation model can be used synergistically with the traditional du Pont accounting measure of return on equity (ROE) to quantify the effectiveness of management stewardship. The methodology presented in this research is a risk-adjusted, discounted cash flow model. This valuation model is more complex than the du Pont model that is represented in Figure 23. The valuation model index in Figure 24 captures the dynamics of risk, operating efficiency, capital productivity, growth, and time as they jointly effect shareholder value. The primary objective of any business is to create shareholder value, all other objectives as they relate to the various stakeholders are secondary to that issue.

Financial management emerged in the 1900s with an

emphasis on the legal aspects of mergers. These concerns included the various types of securities that a business could issue to raise capital. During the Depression of the 1930s the emphasis shifted to bankruptcy and reorganization, corporate liquidity, and the regulation of the securities markets. In the 1950s an emphasis on the theoretical analysis of managerial decisions regarding the choice of assets and liabilities examined how to maximize the value of a business. The focus on valuation expanded in the 1990s with an inclusion of (a) inflation and its effects on the business (b) deregulation of financial institutions with the resultant trend toward large diversified financial services companies (c) the dramatic increase in the use of computers for analysis and electronic transfer of information and (d) the growth of global markets.

The du Pont model represents the traditional approach developed during the 1920s using integrated operating statements and balance sheet concepts in a series of ratios culminating in return on equity (ROE). By the 1950s this was the management paradigm, with corporate objectives including such measures as a return on investment (ROI) target (hurdle rate). Certain other areas have also been based on ROE contribution, such as capital budgeting, tactical decisions, and managers' compensation.
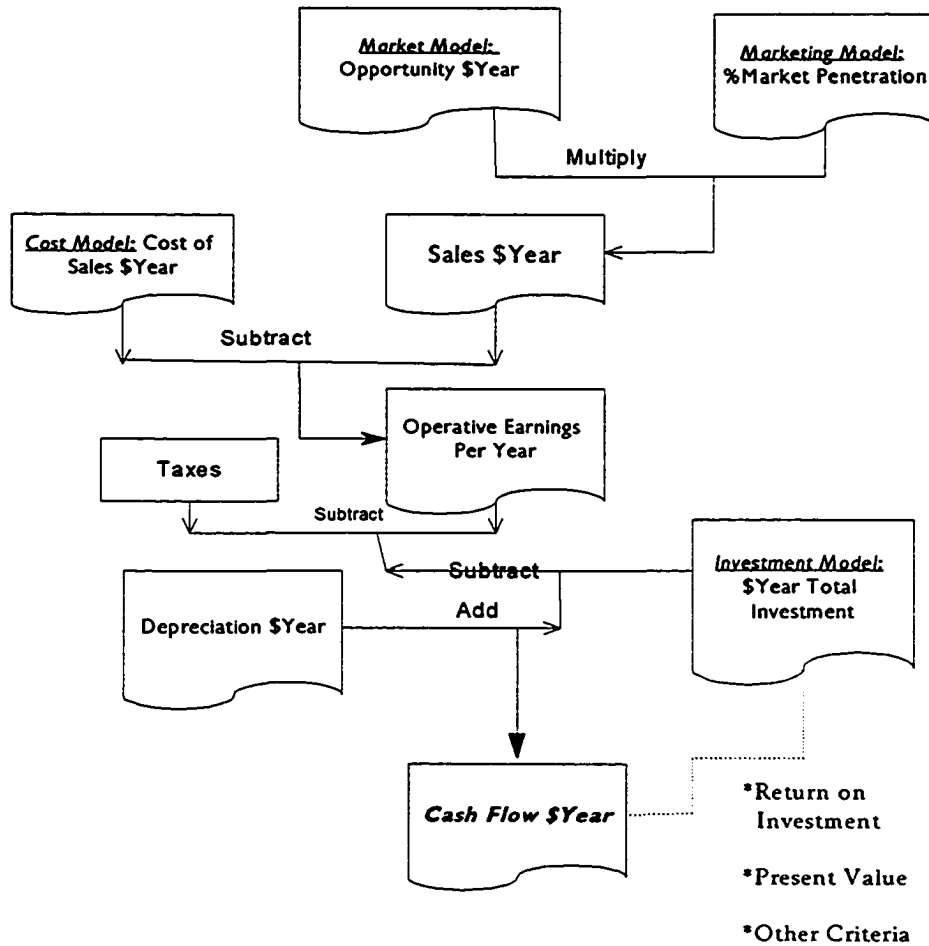
Figure 23. du Pont performance model

Note: The formula for computation of return on equity is stated as;

ROE = (Profit margin)(Total assets turnover)(Equity multiplier)

$$= \frac{\text{Net Income}}{\text{Sales}} \quad X \quad \frac{\text{Sales}}{\text{Total assets}} \quad X \quad \frac{\text{Total assets}}{\text{Common equity}}$$

This framework is based on du Pont's 1971 Venture Analysis Handbook. It was developed by working back from present value to those uncertain variables of influence.

This ratio is *attractive* because it reflects

1. A single number that reflects both operating and asset performance;

2. A ratio that facilitates comparison between various business units and with other organization; and

3. Grounded in the traditional accounting system.
The ROE measurement is weak in four areas:

1. Inventory costing policies: FIFO can inflate income during periods of inflation;

2. Depreciation policy: Depreciation affects income and investment;

3. Capitalization policy: Decisions on equipment leases affect income and investment, and;

4. Asset costing practices: Cost accounting may understate investment during periods of inflation.

Within strategic planning the primary contributor to uncertainty regarding project worth are the price and demand projections. This suggest a concentrated effort should be directed toward the development of meaningful economic analysis and forecast through methods for economic cost-effectiveness analysis of sales and market oriented variables (Hertz & Thomas, 1983). The measurement of uncertainty encountered in the assumptions of the decision analysis model need to be understood by the decision maker (Hertz & Howard, 1983). This is important with regard to

the executive's ability to structure the problem. There must be a meaningful assessment of elements such as chance events, and value measures for each of the possible input variables in the decision process. This means including a cash flow projection of net present value (NPV).

A major limitation is that ROE does not capture the reinvestment activity critical to value. The value of an investment is the future cash flow that it will generate. The time value of that cash flow, including the risk associated with not achieving those flows must be analyzed and projected.

The Valuation Model Index (VMI)

A business creates value when it meets or exceeds the cost of capital that correctly reflects its investment risk. The corresponding principle is that value is the sum of a stream of future cash flows discounted to the present. The du Pont model must be linked to a valuation model to give a complete measure of management stewardship. Valuation models appeared in the finance and economic literature during the late 1950s. Over time the cash flow model has evolved to become the favored paradigm, by the 1980s it was preferred by academics and investment analysts. This model recognizes the time preference for money and the risk of an investment.

The development of a valuation model, as presented in

Figure 24, represents a process for measuring the value impact of management stewardship. The ideal valuation model would develop a value index determined by the discount rate and the cash flows as represented by the internal rate of return. These measures relate directly to shareholder value created by the operational decisions of management.

1. Discount Rate: The relevant discount rate is the weighted average cost of capital for the business (WACC). Every organization has a target capital structure that is a mix of these components that cause its stock price (value) to be maximized. Each capital component is identified, which includes the costs of debt, preferred stock, retained earnings, and new common stock combined to form the WACC.

$$WACC = w_d k_d (1 - T) + w_{ps} k_{ps} + w_{ce}(k_s)$$

This equation is the weighted average cost of each new dollar of capital raised at the margin, it is not the average cost of all dollars previously raised. We are interested in obtaining a cost of capital for use in capital budgeting analysis, and for such a purpose a marginal *cost* is required. Here w_d ,w_{ps} , and w_{ce} are the target weights for debt, preferred stock, and common equity respectively. The cost of the debt component of the WACC would itself be an average of several items if the firm uses several types of debt for its permanent financing, while the common equity used in the calculation will be either the

cost of retained earnings, k_s, or the cost of new common

stock k_e.

The three methodologies used in estimating the
required rate of return on retained earnings include (a) the
capital asset pricing model (CAPM) (Sharp, 1964); (b) the
discounted cash flow (DCF) analysis; and (c) the bond-yield-
plus-risk premium approach (these are averaged for a
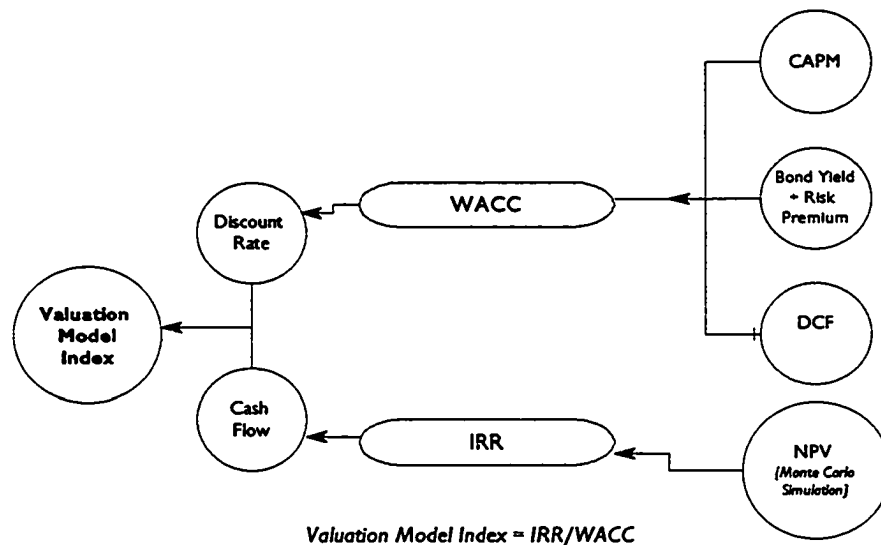consensus rate).

Valuation Model Index = IRR/WACC

Figure 24. Valuation model and determinant variables

2. Cash Flow: The internal rate of return (IRR) is
defined as the discount rate that equates the present value
of a project's expected cash inflows to the present value of
the project's expected costs. The same basic equation is
used to determine the net present value (NPV) or internal

rate of return (IRR). But in the NPV method the discount rate, k, is specified and the NPV is found, whereas in the IRR method the NPV is specified to equal zero, and the value of IRR that forces this equality is determined

A favored technique to evaluate the probability of expected cash flows over time is the use of Monte Carlo simulation technique of random number generation with probability distribution modeling for risk analysis under conditions of uncertainty. A probability distribution that describes the range of possible values for the input is substituted for its original single fixed value. With this technique, uncertain input values in the spreadsheet are specified as probability distributions, then simulations are run (usually over 3000 iterations) to generate a probability profile. (An input value is a value in a spreadsheet cell or formula which is used to generate results in the spreadsheet).

The use of simulation methods in risk analysis is one of using a structural model of the cash flows to determine confidence levels for the most probable scenarios. These models specify the set of equations required to combine the input variables into a series of probability distributions of final payoff measures. Along with the simulation modeling a primary sensitivity analysis is most often used to screen and identify those input variables that need to be specified in probabilistic form. The broader perspective of

risk analysis is that of a vehicle for examining the data surrounding a decision problem in terms of strategic thinking, as a vehicle in planning, and a tool for forecasting.

The traditional accounting system measures track the drivers of management effectiveness while the valuation model index determines what value is being created. From a tactical perspective a business unit might be charged with maintaining value or with contributing a specific incremental value. The delivery of value can be achieved by various combinations of numerical values in each of the drivers that management tries to control. Yet, only the cash-flow drivers and growth are under management's control because the discount rate applied to a business only changes as the risk-free rate changes or as the industry changes. Thus management must balance the cross-impact and mutual interdependence of pricing and operating efficiencies, capital productivity, and growth.

What value has the C.E.O. brought to the organization? This valuation model index demonstrates the value created for the shareholders that result from the management decisions of senior executives and as such it is a powerful tool for demonstrating the impact of their stewardship to the shareholders.

Valuation Management Model (VMM)

The value of any company is determined by its positive future cash flows and the development of human capital assets. This value occurs when invested capital (cash or human) generates returns that exceed the cost of that capital. The value driven organization, as depicted in Figure 25, executes decisions that balance short-term and long-term goals at the functional and tactical level. This value-based management approach aligns incentives, the organizations' strategic plans, analytical techniques, and management processes to focus on key drivers.

The performance process is driven by managing the balance sheet as well as the income statement, achieving short-term goals balanced by long-term objectives, and remembering that the dynamics of logical statistical analysis are built on the rational of emotional human individuals (Koeller, 1994). The ROIC tree in Figure 25 is the management paradigm of sustainable value that compliments the total valuation model (TVM) developed and presented in this research. Rate of return on investor's capital (ROIC) = (Net Income+Interest)/(Debt+Equity). The numerator shows the dollar returns to investors, the denominator shows the total amount of money investors have put up, and the ratio itself shows the rate of return on all investors capital.
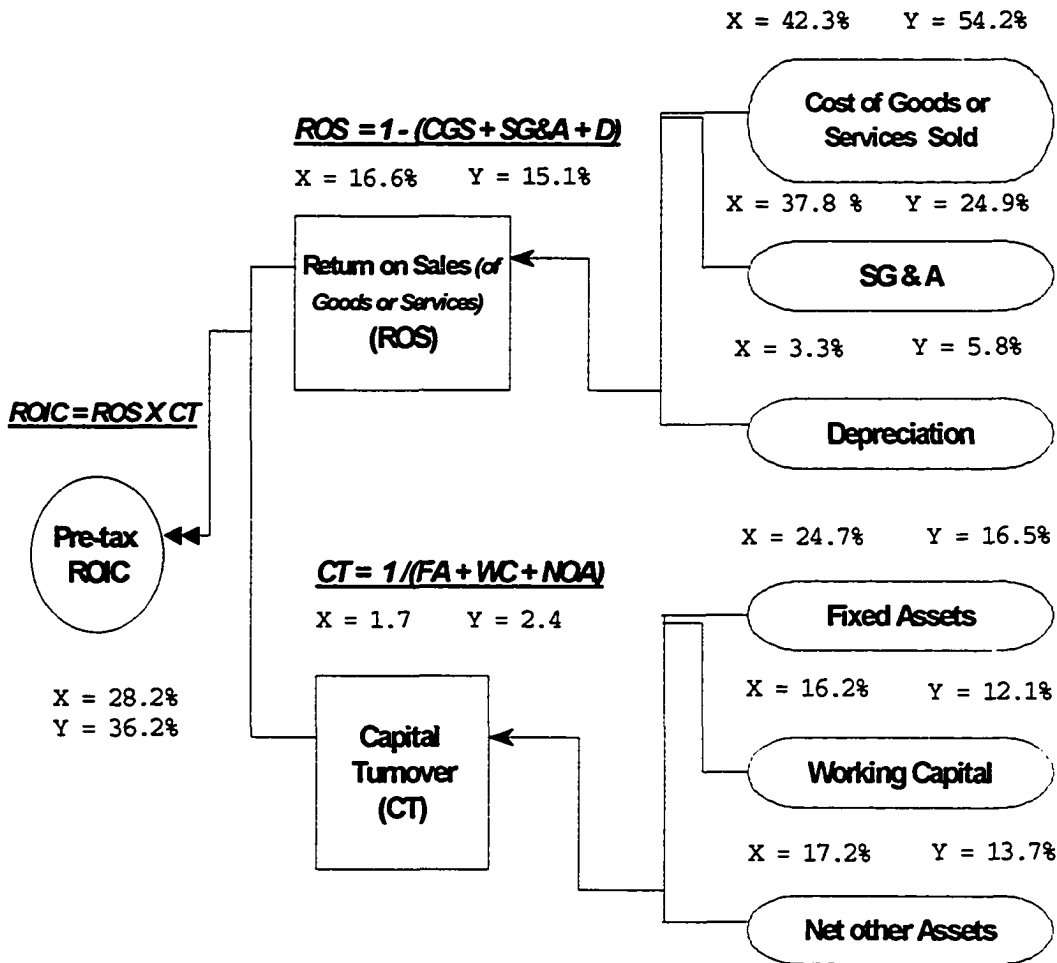
X = 42.3%   Y = 54.2%

Cost of Goods or Services Sold

X = 37.8 %   Y = 24.9%

SG&A

X = 3.3%   Y = 5.8%

Depreciation

$ROS = 1 - (CGS + SG\&A + D)$

X = 16.6%   Y = 15.1%

Return on Sales (of Goods or Services) (ROS)

$ROIC = ROS \times CT$

Pre-tax ROIC

X = 28.2%
Y = 36.2%

$CT = 1/(FA + WC + NOA)$

X = 1.7   Y = 2.4

Capital Turnover (CT)

X = 24.7%   Y = 16.5%

Fixed Assets

X = 16.2%   Y = 12.1%

Working Capital

X = 17.2%   Y = 13.7%

Net other Assets

Figure 25. ROIC tree of organization X managing by ROS, versus competitor Y who manages by the balance sheet and income statement (cost and asset management).

Once performance benchmarks are determined and the status of the organization is analyzed, a philosophical approach to management must be articulated and put in place. The RIOC tree is the conceptual foundation for a value-basedmanagement paradigm. This research has developed a

taxonomy of key drivers for performance parameters that can
be used to craft a model for any industry as well as a
valuation model to demonstrate shareholder value created by
the stewardship of senior management.

What is obsolete about the old paradigm is the concept
of management itself with an emphasis on people as machines,
using resources as if they were inexhaustible, and short
term profit taking at the expense of long-term consequences
that eventually will reduce value. When difficulty with new
change techniques are encountered executives often take
these innovations "empowerment, self directed teams, quality
management and TQM" and revert to using new approaches in
old ways. These techniques have to some extent been used to
manipulate people as objects. When companies use these
regressive cost cutting techniques and control-oriented
policies, they inhibit the high performance organization
from developing to its full potential.

Each organization must create their own culture profile
and determine where it needs to be in order to remain
competitive in the changing and evolving environment. The
analytical tools of the "competing values framework," as
reported by Quinn and Rohrbaugh (1983), would serve well as
a technique for discovery and understanding. The new models
proposed and developed in this research move toward
flexibility and rapid deployment of resources with an

external-internal focus that encompasses all shareholders
and stakeholders. Along with the development of global
competition comes the values of cooperation, co-creation,
and the contributions of everyone within the organization as
the future is defined and developed.

V. CONCLUSIONS

The research perspective of this study views Strategic Management as a complex set of processes that link strategies and tactics with valuation methodologies that positively impact the organization. Where organizational configuration relates to strategic groups with dynamics created through the utilization of human capital assets and the attributes of core competencies with an overarching organizational purpose as effected by internal and external influences within the sphere of influence (Figure 3). Various strategic groups and the organizations that succeed or fail do so based on visionary leadership and the value-based management principles of senior managers, concurrent with their ability to execute the principles of strategic management as depicted by the strategic management model.

Market factors create opportunities as organizations succeed or fail in adapting to environmental evolution. When the existing structures and current operating solutions lose their effectiveness within a turbulent and volatile global environment, a new dynamic response must be engendered. The development of integrated healthcare systems (Figure 26) through various integration strategies is a response to industry consolidation and evolutionary change as new organizational configurations develop in response to the external environment. This research has

demonstrated through hypotheses one through three that the emergent model of a vertically integrated delivery system of healthcare is an effective and viable alternative to the traditional segmented single entity acute-care delivery vehicle.

Standardization   *Clinical Outcomes*

Clinics, Surgery
Centers, Home
Health, Home
Infusion, etc.

Acute Care
Hospital

Physician Offices
& Medical
Groups

Managed Care Organizations

Covered Lives   *Utilization*

Shared Risk   **Aligned Incentives**

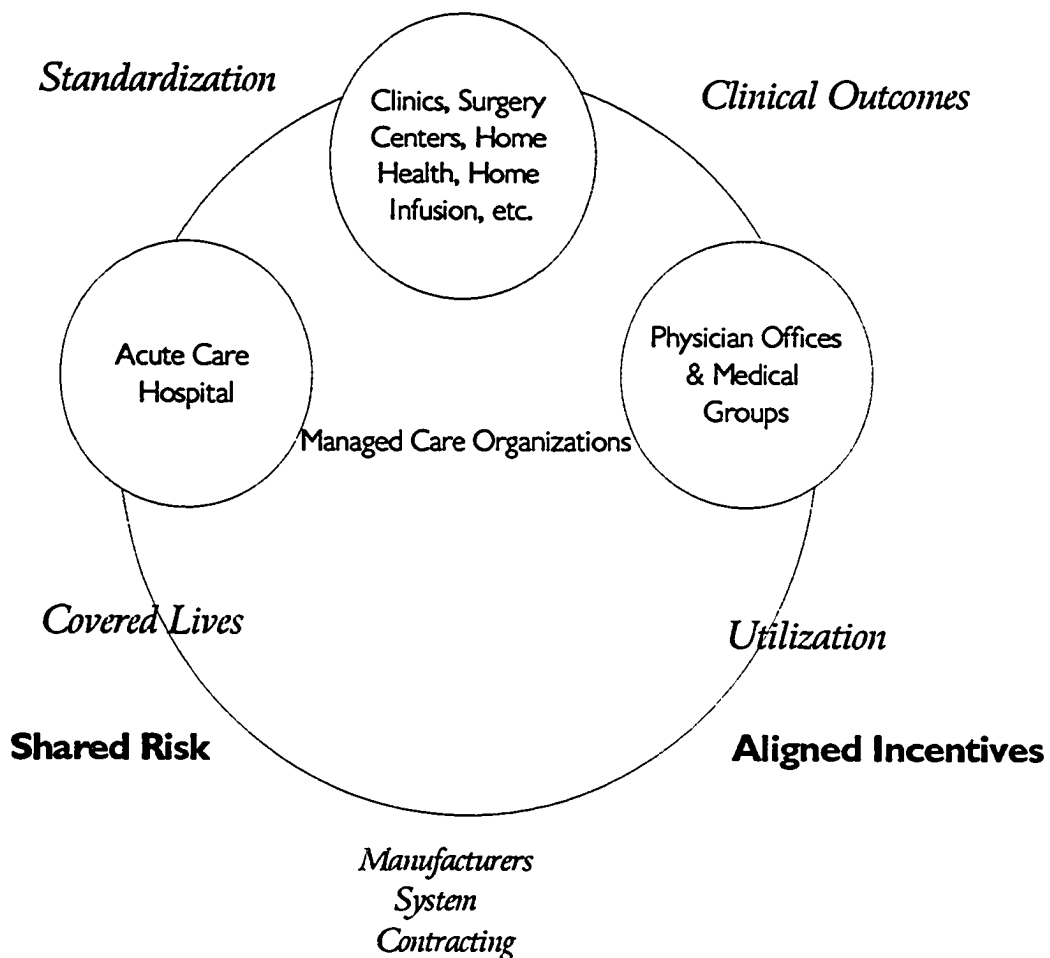*Manufacturers*
System
Contracting

Figure 26. Vertically integrated healthcare systems

The data supports the concept of best practices that when executed as an operational strategy delivers superior performance. It is less obvious that operational efficiencies alone will not create market leadership. The total valuation model (TVM) as depicted in Figure 1 is a tool that monitors performance and validates efficiency. Organizational purpose and visionary leadership is a more elusive concept to measure. The positive results of these initiatives are demonstrated by a superior return on invested capital (ROIC) that stands above an industry average.

The results of hypothesis four validate a measure of organizational excellence as demonstrated in Table 13. Excellent companies can be measured against their peers as the foundation for examination of success or failure of organizational leadership as demonstrated through hypothesis five. This research has shown that to successfully survive a crisis of decline in performance the organization must rely on the stewardship of the board of directors to initiate the change that is inevitable in the face of declining value and an erosion of shareholder value. The results of hypothesis five (Table 14), demonstrate quite succinctly that a change in leadership within the declining organization is an appropriate strategic and tactical response. When leaders lose their ability to generated

creative solutions and can no longer demonstrate value
creation then a change must occur. The ability of an
organization to recognize early warning signs is a critical
success factor in turnaround performance. The success of
the organizations studied in this research are based on
visionary leadership, the development of learning
organizations, and the capability to adapt to the demands of
market forces that shape organization configuration (Figure
27). Additional research should examine the
interrelationships between variables of leadership,
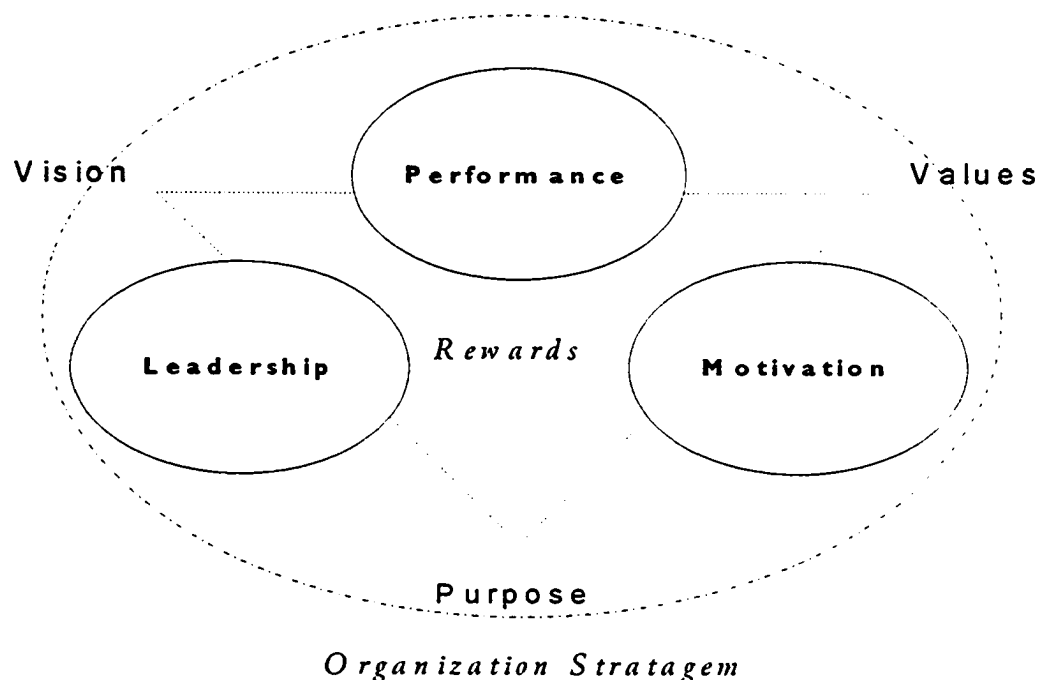performance, motivation and rewards.

Organization Stratagem

Figure 27. Value driven organization principles.

People are motivated to be productive or caused to be ineffective by various psychological factors, many of which a manager does not control. However, they can be influenced. If leaders want to motivate people to action, they must engage their emotions. This distinction brings into clear focus the difference between management and leadership. Managers do things right, effectively, and efficiently. Managers execute the strategic plans that will move the organization forward and handle the myriad tactical and functional issues. Leaders do the right thing; they are not constrained by rules of convention as they strive to engage the spirit of the worker. In the process, they are creating a vision, instilling purpose, and coaching individuals to unleash the hidden powers of achievement that reside within themselves.

This research suggests Figure 28 where the researcher has constructed a conceptual framework of the archetype leader. The skills and capabilities of the multidimensional leader will guide the organization through its various stages and iterations as it is transformed into a dynamic learning structure. This model conceptualizes and represents the skill sets needed to operate within the increasing turbulent global market. The mission is to increase shareholder value and develop the human capital assets of the organization. All of the processes and models are brought together in a process flow as represent in

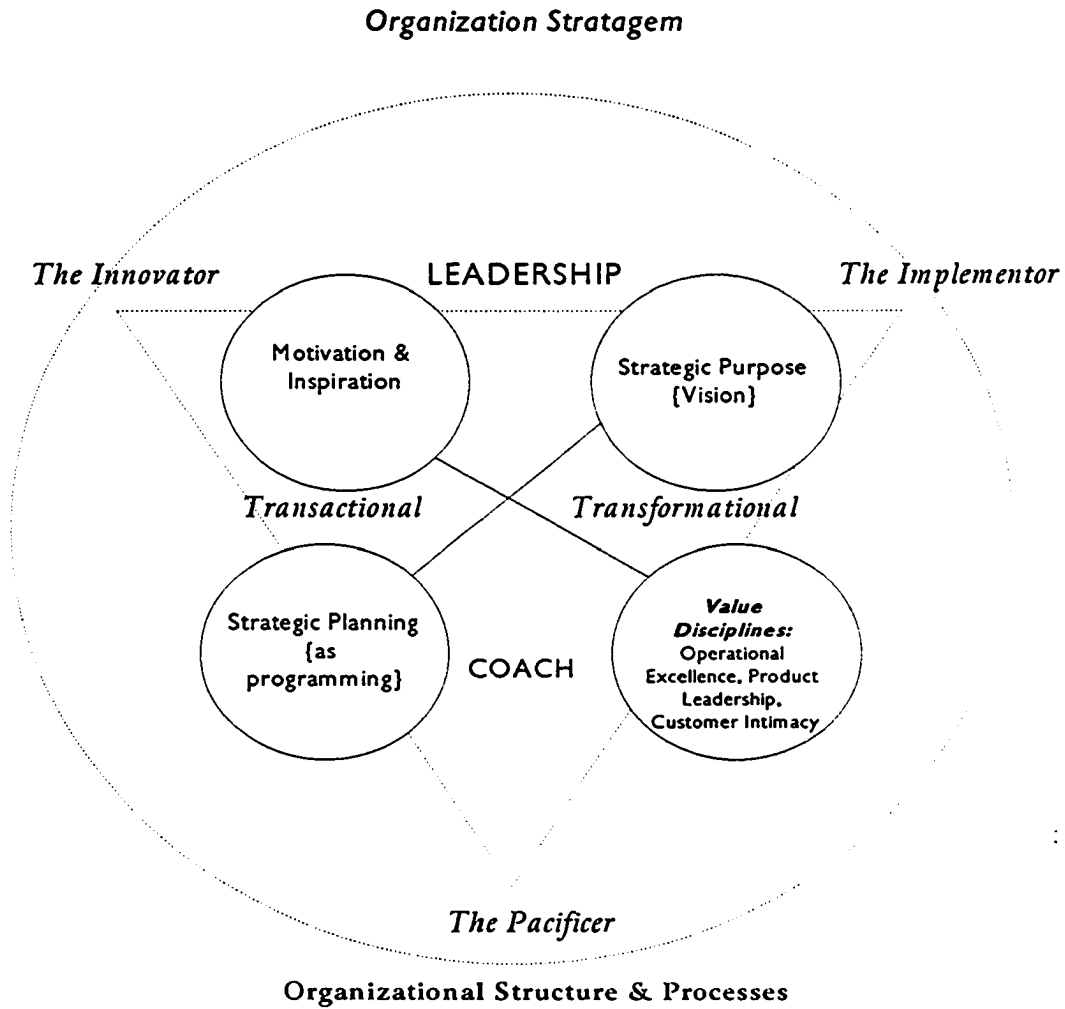Figure 29. Through the development of an organizational

Organization Stratagem

The Innovator   LEADERSHIP   The Implementor

Motivation & Inspiration

Strategic Purpose {Vision}

Transactional   Transformational

Strategic Planning {as programming}

COACH

Value Disciplines: Operational Excellence, Product Leadership, Customer Intimacy

The Pacificer

Organizational Structure & Processes

Figure 28. Leadership Model

information management system (OIM) the progress of the

organization can be tracked and managed.

Strategic management initiates the use of strategies

and tactics to execute the performance objectives of

management. Organizational operatives of restructuring and retrenchment have been a common response to decline. These mechanisms have been successful at initiating a recovery process as demonstrated by the four variations of hypothesis six, which empirically tested asset and cost reduction strategies. The success of these tactics as demonstrated in Tables 15 and 16 supports this concept and validate the conceptual foundations of value-management as articulated in Figure 2.

The re-engineering of the workplace has been blamed for a rise in work force cynicism, disloyalty and distrust. However, it is management's failure to address how individuals handle dramatic change that creates these problems. Leadership at all levels must commit to work with employees where both sides are able to shape this evolving environment and cope with the disruption.

A commitment must be made to (a) provide workshops that address employees concerns (b) provide training to upgrade the skills and competency of the work force, and (c) education and development programs to improve problem-solving capabilities. Once the organization is past the transition phase these steps will lead to an increase in employee satisfaction. This is driven by the richness of new jobs for those remaining and is accompanied by the rewards that come with personal skill development, thereby decreasing turnover among the survivors of the retrenchhment

phase. Management needs to justify the planned job reductions with objective data that will establish the trust needed to heal wounds. If employees are to make decisions, take responsibility and be held accountable, they need access to the kind of information that has previously been reserved for management. This information includes detailed financial information and operating statistics that will let the workers make the connection between their behavior and success and the company's success.

A vision that becomes a jointly owned commitment, which creates a commonality of purpose among the work force is established through an honest two-way interchange of meaningful information between employees and management. Good leaders create forums to have candid discussions with the work force.

The ultimate success or failure of an organization can be quantified and measured. Critical success factors can be qualitatively defined and listed. However the true value of organizational purpose and visionary leadership contains elements that speak to the heart and soul of the individual worker. Genuine motivation must create a passion to be the best and the desire to succeed. These exist within us all a foundation of individualistic determination that can overcome obstacles creating a sense of accomplishment. The organization that is ultimately successful finds a way to touch the spirit of the individual worker in a manner that
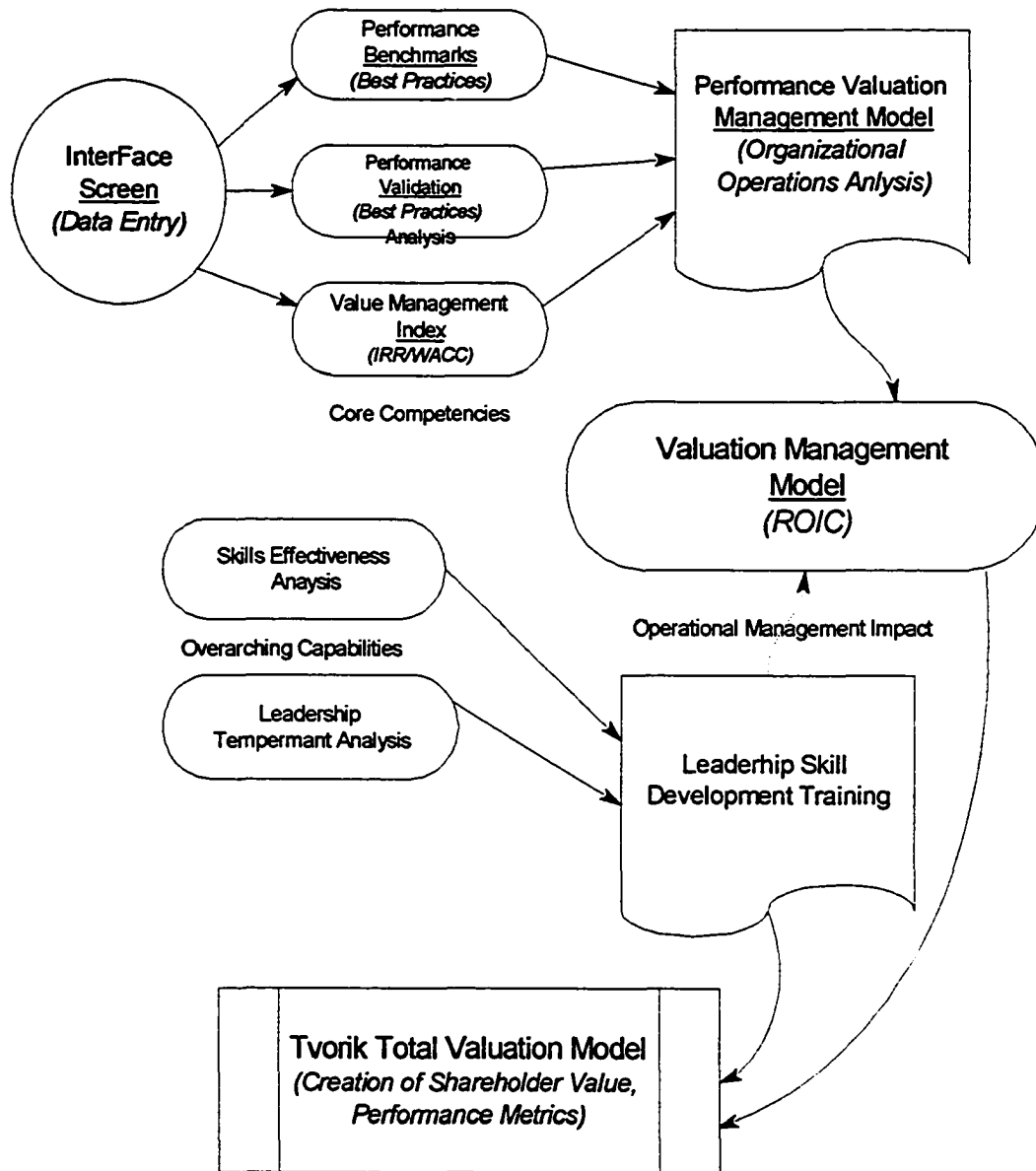
Figure 29. Process flow for software program of model

creates excellence, builds satisfaction and contributes to the goal fulfillment of organizational objectives.

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Appendix

Company name changes:
1. Allegheny International to Sunbeam Corporation, April 1991.
2. Burroughs Corporation to Unisys Corporation, December 1986.
3. Consolidated Foods to Sara Lee, April 1985.
4. Corning Glass Works to Corning, Inc. May 1989.
5. Dime Savings to Dime Bancorp, June 1994.
6. Fuqua Industries to Actava Corporation, August 1993.
7. GAF Corporation to G-1 Holdings Inc. April 1991.
8. General Tire & Rubber to Gencorp, Inc. April 1985.
9. IC Industries to Whitman Corporation, December 1988.
10. Prime Computer to DR Holdings, May 1990.
11. Wheeling Pittsburgh to WHX Corporation, May 1979.
12. Wickes Companies to Collins & Aikman Corporation, August 1992.

Companies not in study, no longer actively traded:
1. Continental Plastic Containers
2. Data Access Systems
3. Leaseway Transportation
4. Leisure Dynamics
5. Lionel Corporation
6. National Distillery & Chemical
7. Martin Marietta
8. NCR Corporation
9. Norton Company
10. Paramount Communications
11. Phoenix Steel
12. Poloron Products
13. Revere Copper & Brass
14. Robintech, Inc.
15. Sperry
16. Walter (Jim)
17. Warner Communications

Not in database:
1. Aqualon
2. Baxter Healthcare
3. Easton
4. Gemini
5. Modern Handcraft
6. NEC Technologies
7. Santa Fe Railroads

<div align="center">**Curriculum Vitae**</div>

Stephen J. Tvorik

Born: Cleveland, Ohio
       September 8, 1949

Education

| 1993 M.B.A. | University of LaVerne; LaVerne, CA. |
| | *Marketing* |

1976 M.A.   New Mexico State University; Las Cruces, NM.
               Printmaking & Art History

1972 B.S.Ed.   Ohio University; Athens, Ohio
               Education, K-12.

1971 B.F.A.   Ohio University; Athens, Ohio
               Photography

Professional Membership

American Society of Hospital Pharmacist

Strategic Management Society

Career Paths

1995 –   IntePlex, Inc., a divison of Bergen Brunswig
Present   Drug Company; Orange, CA.
               Director Business Services

1990-1995   VHA, Inc.; Irving, TX.
               Business Development Manager
               Account Manager (Top Sales Award)

1987-1989   Smith & Nephew Medical; Canton, Ohio
               District Sales Manager
               Rookie of the Year, Rising Star
               (Top Sales Award)

1984-1987   American Hospital Supply Corp.; Chicago, IL.
1979-1984   *Territory Manager*
               President's Award, 110% Club, Home Health
               Marketing Award (Top Sales Award)

1984	Med-Care Physician Sales & Service Tucson, AZ *Vice-President Sales*
1979	Malkin Instrument Company; Louisville, KY. *Hospital Sales*
1978-1979	Cleveland State University; Cleveland, OH. *Instructor (Part-Time)*
1978	Adria Labs; Columbus, OH. *Hospital Sales*
1976	University of Texas at El Paso; El Paso, TX. *Instructor (Part-Time)*
1975-1978	Hoechst-Rousell Pharmaceuticals *Salesman*
1974-1975	Chamber of Commerce; El Paso, TX. *Membership Sales Manager*
1972-1974	Junior Achievement, Inc.; El Paso, TX. *Executive Director*
1963-1967	Cleveland Press; Cleveland, OH. *Newspaper Sales*

Published

Spring 1996	Journal of Customer Service in Marketing & Management *Development of High Performance Teams*
Spring 1997	Journal of Professional Services Marketing *Strategic Organizational Change in Competitive Markets*

Art Shows

Spring 1982	Museum of Fine Arts, Santa Fe; Santa Fe, NM. Contemporary Printmakers
February 1980	Whitney Art Museum; New York, NY. Printmakers for the 1980s

August 1978	Los Angeles Museum of Modern Art; Los Angeles, CA. Contemporary Printmakers
May 1976	University of Texas El Paso; El Paso, TX. Voyeuristic Fantasies - One Man Show

Current Research

1. Value-based management, performance metrics.

2. Value-exchange optimization models for full profit potential and maximization of the customer base.

3. Organizational change agents in the management process.