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Dynamic Features of the Value Systems of a Firm and Stakeholder Value: An Integrated Framework

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Abstract

The business environment has changed drastically and dramatically over the past few decades. This competitive environment which can be characterized as complex and dynamic, demands management to cope effectively with this accelerating pace of change. Creating value for all the stakeholders is not an easy a task. In any value-creating endeavour, management needs to effectively understand or utilize the dynamic features of value systems that include feedback systems, time delays, and non-linear cause-effect relationships among value system components. The proposition in this study is that the singular, monistic, and short-term oriented shareholder perspective fails to capture the dynamism of stakeholder values.

Thus, strategic choices cannot effectively be made without understanding the impacts of dynamic features on value creating system structures. The understanding and use of value systems dynamics which are currently used remains trapped in the intuition of experienced managers. An improved understanding of value systems dynamics is the first step in improving stakeholder value mental models, decision heuristics, and thereby stakeholder values. This research seeks to improve that understanding by increasing our knowledge of how the characteristics of stakeholder value, strategic decisions, and resources impact stakeholder values. In this article, we present a model for an improved understanding of the dynamics of value systems dynamics. An approach to operationalization and testing the model is also described.

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1.0 INTRODUCTION

The competitive landscape of many industries has changed dramatically in the last two decades (Bettis & Hitt, 1995; Keil, 1999; Bierly III & Kessler, 1999). This competitive environment can be characterized as complex and dynamic. Rapid, often discontinuous technological change, convergence of basic technologies, globalization, hypercompetition, extreme emphasis on price, quality and customer satisfaction with resultant increasing focus on knowledge-based assets pose serious challenges to a wide variety of business organizations[1] (Keil, 1999; Leifer & Rise, 1999; Parahalad & Hamel, 1990; Quinn, 1992; Subramanium & Venkatraman, 1999). In face of these challenges, most organizations have begun to recognize the need for change. A variety of tools and approaches like TQM, reengineering, change management and value chain analysis have been applied but still many organizations struggle to change (Donovan, Tully, & Wortman, 1997).

Of all the methods, concepts, and approaches, the idea that the key responsibility of the management is to maximize the shareholder value has widespread acceptance across the globe (Rappaport, 1986, 1998; Knight, 1997; McTaggart et al., 1994; Stewart, 1991; Reimann, 1989; Ehrbar, 1998, Boztel & Schwilling, 1999). Generally, shareholder value is made up of dividends paid plus shares price appreciation of their investments. The researchers and practitioners agree to what drives dividends and share prices (Rappaport, 1986, 1998; Reimann, 1989; Ehrbar, 1998; Knight, 1997; Donovan et al., 1997; Doorly III & Donovan, 1999). That is the long-term cash flow generation. They also recognize the role of all the stakeholders in any long-term cash flow generation endeavour of their firms. But the evidence is to the contrary. In most of the cases, management exercises biased trade-offs in favour of shareholder value, often to the detriment of the employees. Most of the downsizing and mass dismissals are predicated on reporting better short-term earnings. On the other hand, truly successful organization in the new world, create value for all of their key constituencies by managing to create win-wins rather trading off against the other (Donovan et al., 1997). Resource leveraging instead of downsizing (Hamel & Prahalad, 1993) is the course these firms take in stakeholder value perspective.

[1] The word ‘organization’ and ‘firm’ are interchangeably used throughout this report and so are the words ‘strategic choice’ and ‘strategic decision’.

Creating value for all the stakeholders is not an easy a task. An organization can be viewed as system of value systems. Key elements of any value system are the decisions being made, the resources being accumulated and deployed, and objectives being realized. In any value-creating endeavour, management needs to effectively understand or utilize the dynamic features of value systems that include feedback systems, time delays, and non-linear cause-effect relationships among value system components. However, in the context of value-based management, the literature (Rappaport, 1986, 1998; Reimann, 1989; Knight, 1997; Ehrbar, 1998; Boztel & Schwilling, 1999) makes a simplistic assumption about shareholder value that the sole objective of the strategic decision-making is to maximize shareholders value. The proposition in this study is that this singular, monistic, and short-term oriented shareholder perspective fails to capture the dynamism of stakeholder values. As a result, management may not realize that economics of stakeholder values create a positive and reinforcing loop not the vicious cycle of making non-congruent trade-offs among the stakeholder constituencies. Not only do the dynamic features of value system but the characteristics of stakeholder value also complicate the issue. Characteristics of stakeholder value include *interdependency*, *mixed-tangibility*, *temporality*, and *commitment-intensity*. These characteristics together with dynamic features interact with managerial choices to cause the value systems of the firm to behave in complex ways, which are difficult to understand, predict, and manage.

The dynamic nature of stakeholder value systems behaviour precludes the generation of a single set of decision rules which are robust in the face of all possible stakeholder value conditions. Managers must use their understanding of value systems to adjust their strategic choices such as those for balancing out the interests of all the constituencies of stakeholder values. This requires that managers include dynamic features in their stakeholder value mental models. But the mental models used to describe, explain and predict systems do not generally include the dynamic features. Both complexity and dynamic features of business systems are poorly understood by managers (Diehl & Sterman, 1995; Sterman, 1994; Piach & Sterman, 1993). The resulting inadequate stakeholder value mental models prevent the development of decision heuristics which incorporate dynamic features into stakeholder value management decisions. This deficit in decision heuristics therefore constrains the realization of economics of stakeholder value perspective.

The underlying problem addressed by this research is the failure of managers to fully recognize and utilize the characteristics of stakeholder value and the dynamic features of stakeholder value systems which often drive businesses performance i.e., stakeholder values. Strategic choices cannot effectively be made without understanding the impacts of dynamic features on value creating system structures. The understanding and use of value systems dynamics which are currently used remains trapped in the intuition of experienced managers. An improved understanding of value systems dynamics is the first step in improving stakeholder value mental models, decision heuristics, and thereby stakeholder values. This research seeks to improve that understanding by increasing our knowledge of how the characteristics of stakeholder value, strategic decisions, and resources impact stakeholder values. Developing a model for an improved understanding of value systems dynamics, therefore, is the focus of this work.

2.0 Characterizations of Shareholder Value and Stakeholder Value

2.1 Shareholder Value Perspective

The idea of maximizing shareholder value has witnessed a phenomenal growth. Especially, after the publication of Alfred Rappaport's Creating Shareholder Value (Free Press, 1986), corporate management has emphasized the importance of shareholder interests in their mission statements (Reimann, 1989). In this perspective, the concept of value creation means the wealth created for a firm's shareholder through share price appreciation and dividends (Reimann, 1989; Rappaport, 1986, 1998; Knight, 1997).

Shareholder value is commonly defined as a return on investment or total shareholder return (TSR), made up of dividends paid plus share price appreciated (Donovan et al., 1997). What drives dividends and share price appreciation is surplus cash flow or economic value added (i.e., after-tax operating profits minus the appropriate capital charge for both debt and equity capital of the firm (Ehrbar, 1998). A variety of methods and approaches are used to calculate the value but the prime focus is on shareholder's interest. For example, Knight's (1997: 29) expression of value is:

$$Value = \sum_{t=today}^{\infty} PV\ Equity\ cash\ flow_t\ ,\ where$$

$$PV\ Equity\ cash\ flow_t = Cash\ flow_t \Big/ (1+r)^t$$

using r as discount rate.

As shareholder value is a function of expected future cash flows, the role of each of the constituencies in realizing the value for a business, over the long term, is self-evident. Even though researchers (Knight, 1997; Rappaport, 1998; McTaggart, 1994; Park, 1998; Reimann, 1989) very rightly have emphasized long-term cash flow generation for shareholder value, not much is emphasized on other economic actors such as customers, employees and suppliers involved in value creation process of a firm. In other words, the need to take a multidimensional- stakeholder' perspective in realizing the long-term cash flow generation objective has rarely been stressed upon.

2.2 Stakeholder Value Perspective

Given that share price is a function of expected future dividends, we know that the value of a business can only be fully realized over the long term. Sustaining surplus cash flow into the future is only possible if the business organization is able to sustain superior value into the future for all stakeholders involved (Donovan et al., 1997). Unless the interests of all the stakeholders are congruent, any value creating initiative may instead result into value eroding vicious cycle. The major stakeholder groups an organization serves, besides shareholders, are customers, employees, suppliers, the community and the economy. (Donovan et al., 1997; Doorley III & Donovan, 1999). All the stakeholders value long-term view: Employees desire a long-term carrier with the firm, loyalty shows customers belief in long-term engagement with the firm, suppliers are interested in sustained relationships and the communities also see sustained value in the organization consistently contributing to their welfare. Successful business firms incorporate stakeholder value perspective in their strategic choices. To take a fairly recent example, in May 2000, 3M announced to phase out perfluorooctanyl chemistry used to produce certain repellents and surfactant products, exhibiting a multidimensional-stakeholder value perspective. Dr. Charles Reich, executive vice president, said, "*While this chemistry has been used effectively for more than 40 years and our products are safe, our decision to phase out production is based on our principles of responsible environmental management. We're reallocating resources to accelerate innovation in more sustainable opportunities and technologies. This decision is not only in the public interest, it's in the best interests of all our constituencies … our employees, customers, communities and investors*." How could only-shareholder perspective have substantiated the strategic choice where the affected product lines represent about two percent of 3M's nearly $16 billion in annual sales.

Following Donovan et al.'s (1997) views, the business firm must deliver: value to the investor who has provided capital to it; value to the customer who buys the products or services; value to the suppliers who contribute to its market power; value to the economy or environment in which it operates; and value to the employees who are behind its productivity. These stakeholders' goals are universal, independent of the size of organization, and independent of its market.

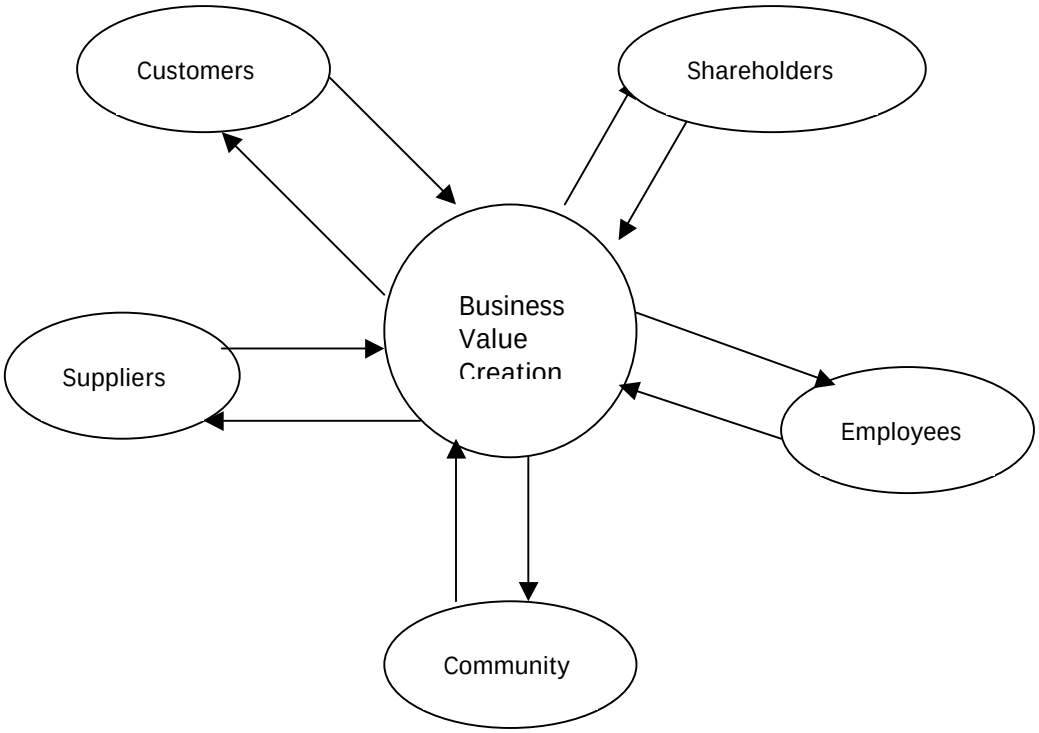

Fig. 2.1 Stakeholders Create Business Value
(Source: adopted from Donovan et al., 1997: 19)

Creating value for all stakeholders, over long term, is not a business as usual phenomena. Part of the problem lies with the lack of understanding of the characteristics of stakeholder value, some of these characteristics are identified by us are:

Interdependency: In a business firm, creating value for one stakeholder is often dependent on how the other is performing. For example, if the firm decides to enhance employees' value

through training, they should have satisfied customers who will generate sales that in turn may provide the funds for employee training.

Mixed-tangibility: Stakeholder values are both tangibles and intangibles. For example, shareholder value i.e., dividends and stock appreciation of their investments are market-based tangible measures while customer values (e.g., customer satisfaction) and employees' value (e.g., employee satisfaction) are intangibles and often are difficult to measure.

Temporality: Values bear temporal dimension. For example, customer preferences change over time and employees satisfaction stock is vulnerable to the environmental happenings (e.g., colleagues lay-offs may lower the moral of the remaining staff).

Commitment-intensity: The strategic choices are made to create stakeholder values. Commitment-intensity requires the management to use the lens of stakeholder value perspective whenever a strategic choice is exercised. For example, 3M, in the strategic choice they made, exhibited the commitment to all the constituencies: employees, customers, suppliers, community and investors. So commitment-intensity has two characteristics: temporal (i.e., continuum of strategic choices) and spatial (i.e., concern for all the stakeholders) – strive for win-wins situation for all, all the times.

These characteristics may turn any value-creating endeavour into a dynamic, complex task. While all the constituencies of stakeholder value are important, this study, for the sake of simplicity, will focus on shareholders, customers, employees, suppliers, and communities' values. Otherwise, our solution model for stakeholder value analysis will be applicable to all of the constituencies of stakeholder value.

3.0 LITERATURE REVIEW

This research draws upon both the theoretical as well as managerial literature in strategy, performance measurement, and value-based management (VBM). A brief account of resource-based view and positioning theory on stakeholder value perspective is presented. Value-based management and performance measurements, being the most relevant managerial research streams to the issue of stakeholder value, are also evaluated.

3.1 Theoretical Perspectives

The field of strategy often draws on theories from a wide range of disciplines to create models, which account for superior performance between firms in the same industry. The

seminal works of Mason (1939), Bain (1959), and Scherer (1970) provide the basis of much work of later researchers on strategy. The fundamental concept of 'economic rent' was already contained within these earlier works (Wilson, 1999). More than that, these earlier studies recognized the importance of the relationship between contingencies and resources (Scherer, 1970). Of all the major contingency approaches, the positioning sub-theme (Porter, 1980, 1985, 1996) is probably most important to the market advantage of the firm, with the resources theme fundamental to both firm cost and revenue advantages of the firm (Wilson, 1999). In the context of stakeholder value perspective, where a firm's performance is characterized by the value it creates for all of the stakeholders involved, it seems imperative to review both of these themes. Therefore, this study is focused on the development of a parsimonious model, that partially draws upon both the resource based view of the firm and positioning theory as a powerful means of explaining the impact of stakeholder value characteristics and dynamic features of value systems of the firm on the firm's stakeholder value.

3.1.1 The Positioning Theory and Stakeholder Value

Porter is the main architect of the positioning theory (Porter, 1980, 1985). The theory suggests that through the use of a variety of analytical tools (e.g., value chain analysis) the market environment can be understood to the point where strategic choices can be made as to the nature of the strategic business unit's competitive advantages that generates economic rent for the firm. In Porter's view (Porter, 1996), the strategic position of the firm should guide the necessary trade-offs in underlying value creating capabilities.

This approach has been criticised as being too narrow and prescriptive for business strategy (Mintzberg, Ahlstrand & Lampel, 1998; Wilson, 1999). This criticism seems equally valid in the context of stakeholder value perspective too. This study argues that the positioning theory has limitations, e.g., in explaining the link between strategic choices and stakeholder values. Likewise, Porter's value chain analysis can be useful as an input to the strategic choices process but not its objective. For example, the strategic choices that create value for customers and suppliers – two of the constituents of the stakeholder can not be made on a broad basis in the context of the industry. Individual customers have preferences. They probably buy products and services based on value criteria that are much more refined than those suggested by broad generic strategies of Porter. Consequently, the positioning theory may result in a large "gap" between the intended customer value and the realized customer

value because developing the required supporting tangible and intangible resources cannot be done on such a generalized basis. Not only these individual or "bundle" of similar preferences exist, but also will change over time. Some of these consumer preferences will change from being "order winning" to "order qualifying" (Hill, 1993). The relative size and importance of these preferences will also change over time (Wilson, 1999).

Another limitation of positioning theory is its view of exchange relationships. For example, the relationship between suppliers, customers and the firm – the key constructs in stakeholder perspective are described as adversarial and countervailing forces in Porter's (1980) competitive analysis. In Porter's view, the one who has the most bargaining power achieves superior performance at the expense of the other (Wilson, 1999). However, many a researchers view a non-substitutable supplier relationship—based on information sharing, trust, and co-development factors (Dyer & Singh, 1998) as a source of rents to a firm (Conner, 1991; Walsh et al., 1996; Verdin & Williamson, 1994). In stakeholder value perspective, these non-substitutable supplier relationships may translate into a successful value proposition instead of being termed as pure antagonistic relationships. Therefore, Porter's bargaining theory is too restrictive when analyzing the stakeholder value creating typologies.

On the other hand, creating value for stakeholders is the external evidence that firm posses the appropriate set of unique resources. This external evidence to the stakeholder value created is in the purview of the positioning theory. Therefore, our proposed model will draw upon both the positioning theory and resource-based view of the firm.

3.1.2 Resources-Based View and Stakeholder Value

The basic premise of so-called "resource-based view of the firm" is that its resources drive a firm's performance. An earlier work in this field is that of Penrose (1959), which see firms as a broader set of resources. Wernerfelt' (1984) approach presents a way of using resources as the main source of superior performance, through the development of what the author called "resource position". The author gives some examples of resources: brand names, in-house knowledge of technology, skilled work force, trade contracts, capital etc. The need for a resource difficult to imitate, transfer, buy, sell or substitute (Wernerfelt, 1984; Barney, 1991; Dierickx & Cool, 1989; Peteraf, 1983) that must have a systematic integration with other

resources s the main contribution of the resource-based view of the firm to the creation of superior performance by the firms.

While the resource-based view correctly emphasises heterogeneity, it is limited in relating these internal resources to heterogeneous market-related outputs (Wilson, 1999). Creating unique and visible value for all the stakeholders is the external evidence that the firm posses the appropriate unique internal resources both tangibles and intangibles. However, in the context of stakeholder value perspective where initial goals for each of the constituencies are specified, the resource-based view presents an important contribution to the understanding of how intangible resources can constitute the basis of any value creating typology and how o identify what are the strategic resources that will secure superior stakeholder values to the organization in future. Therefore, this study aims at combining the two aspects—the positioning theory and the resource-based view in an attempt to construct a richer causal model capable of tracing the value creating typologies in stakeholder value perspective.

3.2 Managerial Perspectives

Creating stakeholder value is the concern of managers. Many approaches and models have been applied in value creating managerial practices. In developing the proposed model for stakeholder value analysis, therefore, we intend to seek support from managerial literature too. In the following sub-sections, we review the relevant literature from value-based management and performance measurement disciplines.

3.2.1 Value-based Management and Stakeholder Value

Value based management has witnessed a phenomenal growth in recent times (Keeney, 1992; McTaggart et al., 1994; Knight, 1997; Reimann, 1989; Boztel & Schwilling, 1999, Donovan et al., 1997). The most convincing and systematic approach towards VBM are the works by Knight (1997) and Donovan et al. (1997). Knight proposes VBM as a solution to the problems of a firm' management created by the conflicting signals and confusing priorities ever present in the decision-making environment. He terms VBM as a link between strategy and financial results and divides the topic of value management into five elements: goal, strategy, measures, processes, and decision. This model suggests an integration of VBM elements via a pyramid scheme, where at the base resides the 'operating decisions' then

followed by 'corporate processes', 'measures', 'strategy' and then comes the 'goal' at the top. Though Knight's model provides a useful descriptive framework for VBM but does not explain the linkages dynamics between the VBM elements. The suggested link between decisions, processes and goals appears to be sequential. While decision/consequence/information is essentially a feedback process (Sterman, 1994), the linkages within the VBM elements are treated as linear and static in Knight's model. Knight's framework also fails to capture the time pattern of resource accumulation (Dierickx and Cool 1989; Warren, 1997) that greatly influences the value dynamics in a firm (Morecroft, 1985 and 1997). Therefore, it seems imperative to include resource accumulation dimension in the VBM model.

Donovan et al.'s (1997) model addresses these issues successfully. In fact, they are the pioneers of stakeholder value perspective. Building on their work, our model will incorporate the dynamism of stakeholder value characteristics in addressing the specific issue of stakeholder value – the impact of stakeholder value characteristics and dynamics features of value systems on stakeholder value.

3.2.2 Performance Measurement and Stakeholder Value

Performance measurement is a key factor in ensuring the successful implementation of a firm strategy (Fitzgerald et al., 1991). In the context of stakeholder value, performance measurement translates to identifying what determines value in an organization and measuring those things that lead to value creation (Donavon et al., 1997). Traditionally, the financial performance measures such as ROE, ROI, EPS have been used as a measure of the performance (Hergert and Morris, 1989; Stewart, 1990; Davis, 1997). These financial measures often tend to focus on short-term profitability (Disxon et al, 1990; Fitzgerald et al., 1991). Too much emphasis on managing by the financial numbers may threaten the firms' long-term viability (Kaplan, 1984). The excessive focus on short-term profits often creates dysfunctional effects on quality and fails to capture the competitive performance (Hegert and Morris, 1989; Fitzgerald et al., 1991). To overcome these shortcomings of the traditional financial performance measures, Fitzgerald et al. (1991) suggested some generic performance dimensions including both financial as well as non-financial perspectives and a simple input-process-output model for performance measurement. Though a step forward in performance measurement but Fitzgerald et al.'s (1991) model is essentially a static model and fails to

capture the systemic inter-relationships present in a firm's value systems. Both lead and lag indicators are present and are linked through the chains of inter-relationships of a value chain. These lead and lag indicators, in turn impact the firms' performance. The Balanced Scorecard (BSC) methodology (Kaplan and Norton, 1996) has witnessed a wide acceptance in the private sector, for strategic management of the businesses (Slopper et al., 1999). However, a BSC model, also fails to capture the dynamics of inter-related variables in a firms value chain. Instead, the simplistic assumptions are made about the value chain structures. Impact of feedback, time delays and non-linear relationships among the system's variables is often not recognized. Consequently, the performance measures may not align to the objective of value-based management, which is to understand how to measure the impact of changes in driver's performance. Therefore, in any model for stakeholder value analysis there is a need for performance measures that:

- capture the dynamics of inter-related variables and structures of a firm's value systems;
- ensure the consistent and aligned measurement of the goals for each of the stakeholder constituencies values;
- measure what drives business value.

So, our solution model should incorporate these characteristics of performance measures.

3.3 Why a new model for Stakeholder Value? –- A Recapitulation

The existing literature describes and documents recent fundamental changes in value-based management processes and organizations from a unilateral shareholder value perspective to multidimensional stakeholder value perspective. In doing so dynamism of stakeholder value is tightly linked with firm's value. For example, customer preferences change over time and so does their importance. In any value-creating endeavour, these dynamics of customer preferences must be understood so as to develop the supporting tangible and intangible resources. The positioning theory fails to capture these dynamics. On the other hand, creating value for stakeholders is the external evidence that firm posses the appropriate set of unique resources. This external evidence to the stakeholder value created is in the purview of the positioning theory not of the resource-based view. Therefore, this research will attempt to fill this theoretical gap by developing a stakeholder value model that will establish a link between both of the theoretical perspectives. The developed model will offer a richer causal explanation of impact of characteristics and dynamic features of value systems of the firm on the stakeholder value.

4.0 THE VALUE CYCLE MODEL

Painting a complete picture of stakeholder value, the solution model requires descriptions from several perspectives. In this section I begin this process by depicting the model from systemic and holistic perspective. The building block of the proposed Value Cycle Model is described. Followed by a brief account of the theoretical positioning of VCM. Next, the link between dynamics features of value systems and the VCM is established. Then, the utilization of system leverage concept in VCM is explained. Section concludes with the recapitulation of VCM.

4.1 The Model

The preceding section i.e., literature review leads to the model reflecting a dynamic view of stakeholder value management as shown in a schematic form in Fig.3.1 Decisions are the results of some decision rules or policy to information about the real world as we perceive it (Forrester, 1961). Essentially, a decision is made to achieve some goal. In stakeholder value perspective, management makes strategic decisions that create resources for the firm. Some resources are tangibles and others are intangibles. Effective deployment of these resources creates value for stakeholders.

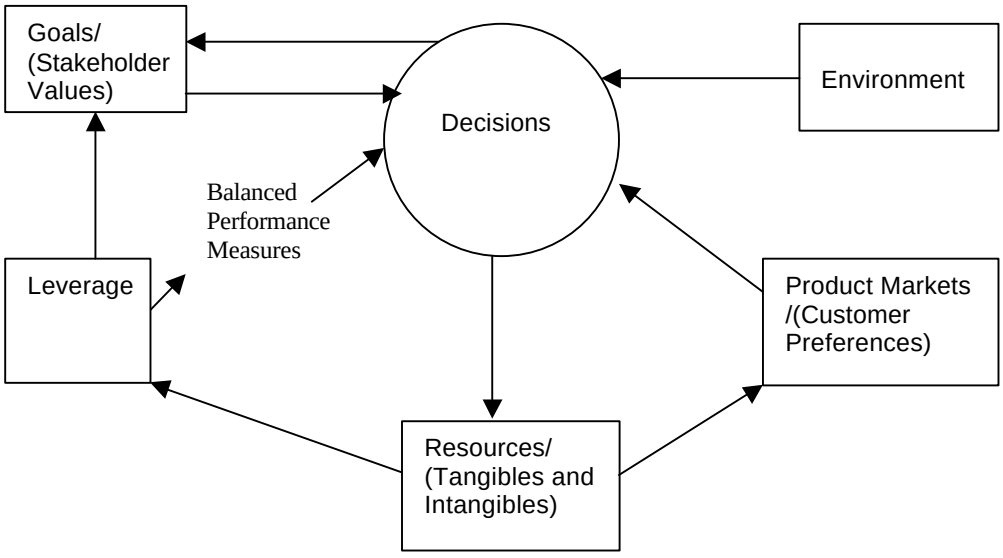

Fig. 3.1: The Value Cycle Model

Understanding the dynamics of the elements of the value systems precedes the effective deployment of resources. In general, two kinds of cause-effect relationships are present in the value systems of the firm. First kinds of cause-effect relationships are simple and static in

nature where action and consequence are close both in time and space. For example, a manager's simple kind and appreciative words to an employee may increase motivation level of the subject employee. That, in turn, may result in the increased employee productivity.

In contrast, the other kinds of cause-effect relationships are complex and dynamic in nature. In strategic resource allocation process, managers compare quantitative and qualitative information about the state of real world to various stakeholder values goal, perceive the gaps between target and actual states, and take actions that (they believe will) cause the real world to move towards the target state (Sterman, 1994). This information/action/consequence cycle creates value by bringing the state of the system closer to the goals, over time. This cycle is termed as a value cycle (Wholstenholme and Stevenson, 1999).

Value cycles are the functions or the processes responsible for value creation (destruction) over time. A value cycle explicitly links firm's resources, goals and decisions. Essentially, all value cycles are feedback structures. Some value cycles are goal-attaining/ value-creating cycles or balancing feedback loops. Others are growth-attaining/ value-sustaining cycles or reinforcing feedback loops. Thus, a value system of an organization may include both static and dynamic cause-effect relationships.But as our focus is on dynamic features of value systems, therefore, we consider a value cycle as a building block of stakeholder value analysis. Hence, we call this model 'The Value Cycle Model'.

4.2 Theoretical Perspective of the Value Cycle Model

The theoretical argument developed from the literature is that differences in firm stakeholder value can be better explained through a combination of firm resources and external evidence of stakeholder values, where firm resources derive their importance from relative level of firm's stakeholder values. These stakeholder values in turn derive their prioritization from dynamics of customer preferences. Congruency between these factors will have an important role in determining stakeholder value. The Value Cycle Model provides this link via nested value cycles in the value system of the firm.

4.3 Dynamic Features of Value Systems and the Value Cycle Model

The proposed model is different from other studies in value-based management literature (Dixon et al., 1990; Fitzgerald 1991; McTaggart 1994; Knight, 1997; Scott, 1998) that primarily have focus on the "linear linkages" and the "static view" of VBM. In our view, the process of and inquiry into stakeholder value must center on "cause-and-effect relationships" and the "information feedback loop" that exist among the decisions, resources and goals of the firm. The proposed Value Cycle Model essentially captures the dynamic pattern of these structural elements of the value systems of the organization. Not only the feedback structures, but also the other dynamic features such the time lags between cause and effect, and non-linear relationships between the value systems elements are well represented in the model. Understanding of impact of these structures on firm stakeholder value is achieved by analyzing each of the value systems of the firm. Next sub-section describes this process utilizing the concept of systemic leverage.

4.4 Systemic Leverage and the Value Cycle Model

As the key issue addressed by this research is to understand the dynamic complexity of stakeholder value by characterizing stakeholder value creating typologies in terms of resources they consume and value leverage they have, the Value Cycle Model provides a possible solution. The linkage structure of various value cycles of the model reflects how to align or relate division of resources with each other (Morita, 1997). The identification of policy intervention points is vital for effective resource alignment.

Systemic leverage (Senge, 1990; Ritchie-Dunham, 1999) effectively helps in policy levers identification. To leverage in a firm is to control system resources efficiently, effectively, and sustainability (Ritchie-Dunham, 1999). According to Ritchie-Dunham, at any given time, a firm' s systemic leverage (SL) consists of three components namely, SL's direct, dynamic, and structural components corresponding to (i) people's actions, (ii) goals that drive actions and (iii) multiple goals that interrelate in a system, respectively. Direct leverage involves no value cycles. Action and result are close in space and time. Using direct leverage is most appropriate for local, short-term resource changes that do not trigger potential systemic effects (Ritchie-Dunham, 1999).

Whereas, a value cycle and hence the value systems structures involve information-action-consequence chains that create the dynamic complexity. Dynamic complexity often leads to poor decisions and causes dysfunctional systems behaviour (Sterman, 1989; Forrester, 1995; Doerner, 1980). In other words, the firm's sub-goals are not explicitly realized and aligned to the global goal. Equally problematic are firms' resource dynamics. In the value creation process, together with goals and policies, firms' resources play a vital role (Wernerfelt, 1984; Porter, 1985; Foss, 1997). Especially, the dynamic resource-based perspective (Dierickx and Cool 1989; Warren, 1997) identifies the pattern of resource accumulation in a firm as a key signal to firms' value dynamics (Morecroft, 1985 and 1997). A value cycle explicitly links the local goals, decisions and resources. As a result, value cycle linkage structures in the value systems of the firm capture the patterns of firms' resource accumulation through its nested and interrelated chains of value cycles. Besides the identification and establishment of the value cycles linkage structures, decisions-makers need some operational measure to gauge the value creation potential of sub-systems' value cycles as well as of the whole systems' linkage structures. Both dynamic and structural component of leverage seems to fill this vital gap effectively. Dynamic leverage enables decision-makers to realize the goals in a value cycle efficiently. While structural leverage provides an assessment and guidance to align the sub-system/ value cycle goals with the overall system goal.

In each value cycles linkage structure, according to Ritchie-Dunham, after n time periods, decision D_n produce result R_n, obtained through the dynamic leverage multiplier λ_{dyn} :

$$R_n = \lambda_{dyn} \times D_n,$$

where: $$\lambda_{dyn} = \left| \frac{ActualGain}{Target Gain - ActualGain} \right|$$

The above equation shows how well a value cycle attains its target goal. The dynamic leverage provides an operational measure for the decision variable (i.e., D_n), where as the term "gain" tracks the changes in the performance variable (i.e., R_n), over the n-period information feedback loop. Thus, through the value cycles constructs, the operationalized feedback loops are identified in the value systems of the firm. These loops describe explicitly the relationships between the goals/ sub-goals of the firm and the decision rules or policies articulated by the decision-makers.

Stakeholder value management aims at integrating and aligning the sub-system goals in a value system with the global goal of the organization— create value for all the constituencies of stakeholder. Achieving such an integration requires that all the sub-system goals work together to achieve the overall system goal (Senge, 1990). The identification of both the actual and the stated goals and sub-system goals is an essential prerequisite for sub-system goals alignment (Argyris, 1993). In the value systems of a firm, according to Ritchie-Dunham the result R_n, which stated system goals accomplish after n time periods, depends both on the actual goals underlying decision D_n and the structural leverage multiplier λ_{stt}:

$R_n = \lambda_{stt} \times D_n$,

$$\text{where: } \lambda_{stt} = \left| \frac{Gstated, n}{Gactual, n - Gstated, n} \right|$$

The above formulation shows how well the system as a whole attains its global goal. In other words, structural leverage provides an operational measure of the relative goal alignment. Therefore, with the help of dynamic and structural leverage, the conflicting goals in the value systems of a firm are identified and possibly aligned. Thus, value cycle linkage structures facilitate the logical and consistent linking of interconnected strategic decisions in the value systems of the firm. The successful stakeholder value creator firms have focused on improving decision- making (Knight, 1997). Value cycles and the linkage structures' perspective provides the weighing scale to help decision-makers balance different considerations and come to decisions that create higher value for the firm. Moreover, the increased number of alternatives under consideration, availability of both dynamic and structural leverage and improved information via feedback will improve the decision making. Thus, the decisions in the value systems of the firm are integrated via value cycles linkage structures and thereby the firms' stakeholder value creation potential is enhanced.

4.5 Recapitulation of the Value Cycle Model

In the face of dynamic complexity of stakeholder value due to its characteristics— interdependency, mixed-tangibility, temporality, and commitment-intensity and the dynamics of structural elements of value system, a business firm 's management often fails to make strategic choices that create stakeholder value. The Value Cycle Model helps the managers to understand these dynamics through the structured analysis of its building blocks: value

cycles. The value cycles linkage structures, provide firm-wide integration of goals, resources and decisions. The inter-related and nested feedback loops effectively capture the resource accumulation process and helps in understanding how various combinations of resources create stakeholder value. The balanced performance measures tied in the linkage structures, provide management the measurement scale that facilitates congruent trade-offs between short- and long-term stakeholder value creating opportunities. With the help of direct, dynamic and structural leverage, management is aided for making effective deployment of accumulated resources to create value for all the constituencies of stakeholder.

5.0 AN APPROACH TO OPERATIONALIZING AND TESTING THE MODEL

In light of the common lament that empirical research of stakeholder value-based concepts is scarce (Berman et al., 1999), we now outline a research design that utilizes the concepts developed in this article and demonstrate the feasibility of operationalizing and testing the framework.

The purpose of our model is to increase the knowledge and understanding of stakeholder value. This improved understanding can act as the basis for improved stakeholder value mental models, management heuristics and decisions, and firm's performance in terms of stakeholder values. While no single approach can provide a complete understanding of stakeholder value based management, our model can contribute by characterizing the value creating typologies in terms of resources (tangibles and intangibles) and value leverages (short-term and long-term) utilizing the value cycle as the key construct. Value cycles will embody the cause-effect relationships and other dynamic features, which significantly impact stakeholder values. For evaluation of the nature of those impacts, a dynamic computer simulation model is suggested.

The system dynamics methodology (Forrester, 1961) for modeling complex system is proposed for building the dynamic computer simulation model. System dynamics describes cause and effect relationships with stocks, flows, and feedback loops. Stock and flows are used to model the flow of value and resources through the value systems of the firm. Information feedback loops are used to model decisions and managerial policies. Actual, desired and perceived conditions are explicitly separately modeled. Time delays such as between the need of a resource and the availability of that resource are explicitly identified,

as are non-linear relationships. The methodology provides the means of describing the characteristics and dynamic structures of the value systems and therefore is ideally suited for operationalizing and testing of out model.

6. CONCLUDING REMARKS

This research has made several important contributions. Firstly, we have explicitly characterized stakeholder value in terms of interdependency, mixed-tangibility, temporality, and commitment-intensity. Secondly, though our research model is reminiscent of Donovan et al.'s (1997) model but we have grounded the construction of our model in the alternative theoretical perspectives of the positioning theory and the resource-based view, and the managerial perspectives of value-based management and performance measurement, providing richer causal explanation of the underlying cause-effect relationships between model's components. Thirdly, our research has addressed the specific issue of stakeholder value that is the impact of stakeholder value characteristics and dynamic features of value system on value of the firm.

6.1 REFERENCES

Argyris, C. (1993). Knowledge for Action. San Francisco: Jossey-Bass

Bain, J. S. (1959). Industrial Organization. New York: Wiley.

Baarney, J. (1991). "Firm resources and sustained competitive advantage". Journal of Management, 17, 99-120.

Berman, S. L., Wicks, A. C.,Kotha, S.and Jones, T.M (1999). "Does stakeholder orientation matter? The relationship between stakeholder management models and firm financial performance" Academy of Management Journal, 42 (5), 488-506.

Bettis, R. A. and Hitt, M. A. (1995). "The new competitive landscape". Strategic Management Journal. 16, 7-19.

Bierly III, P. E. and Kessler, E. H. (1999). The Timing of Strategic Alliances. In M. A. Hitt, P. G. Clifford, R. D. Nixon, and K. P. Coyne (eds), Dynamic Strategic Resources, Chichestor, UK: John Wiley, 299-321.

Boztel, S. and Schwilling, A. (1999). Managing For Value. Oxford, UK: Capstone.

Conner, K. R. (1991). “A historical comparison of resource-based theory and five schools of thought within industrial organization economics: do we have a new theory of firm?” Journal of Management, 17, 121-154

Davis, A. (1997). “The role of SD in changing the performance metric in the private sector”. In Proc. 1997 Int SD Conf. Istanbul, Turkey.

Diehl, E. and Sterman, J. (1995). “Effects of feedback complexity on dynamic decision making”. Organizational Behaviour and Human Decision Processes. August, 1995.

Dierickx, I. And Cool, K. (1989). “Asset stock accumulation and sustainability of competitive advantage”. Management Science, 35, 1504-1511.

Dixon, J. R., Nanni A. J. and Vollmann T. E. (1990). The New Performance Challenge: Measuring Operations for World Class Competition. Irvine: Business One.

Doerner, D. (1980). ‘On the difficulties People Have in Dealing with Complexity’, Simulations and Games, 11, 1, 87-107.

Donovan, J.M, Tully, R., and Wortman, B. (1997). The Value Enterprise. Toronto, Canada: McGraww-Hill.

Doorly III, T.L., and Donovan, J. M. (1999). Value-Creating Growth. San Francisco: Jossey-Bass Publishers

Dyer, J. and Singh, H. (1998). “The relative view: corporate strategy and source of inter-organizational competitive advantage”. Academy of Management Review. 23, 660-680.

Ehrbar, A. (1998). EVA The Real Key to Creating Wealth. Toronto: Wiley.

Fitzgerald, L., Johnston, R., Brignall, S., Silvestro, R., and Voss, C. (1991). Performance Measurement in Service Businesses, Surrey, UK: The Gresham Press.

Forrester, Jay W. (1961). Industrial Dynamics. Cambridge, Massachusetts: M.I.T. Press.

Foss, N. J. (1997). Resources, Firms, and Strategies. New York: Oxford University Press.

Hamel, G. and Prahalad, C.K. (1993). “Strategy as Stretch and Leverage”. Harvard Business Review. March-April, 75-84.

Hergert, M. and Morris, D. (1989). “Accounting Data For Value Chain Analysis”. Strategic Management Journal. 10, 175-188.

Hill, T. (1993). Manufacturing Strategy. Basingtoke: MacMillam.

Kaplan, R. S. (1984). “The evolution of management accounting”. The Accounting Review. 59, 3, 390-418.

Kaplan, R. S. and Norton, D. (1996). The Balanced Scorecard: Translating Strategy into Actions, Harvard: HBS Press.

Keil, T. (1999). Governmnet of R&D – Transaction Cost, Resources, Inertia and Social Capital. In M. A. Hitt, P. G. Clifford, R. D. Nixon, and K. P. Coyne (eds), Dynamic Strategic Resources, Chichestor, UK: John Wiley, 323-395.

Keeney, R. L. (1992). Value-Focused Thinking, Cambridge, Massachusetts: Harvard University Press.

Knight, J. a. (1997). Value Based Management. New York: McGraw-Hill.

Leifer, R. and Rice, M. (1999). Unnatural Acts: Building the Mature Firm's Capability for Breakthrough Innovation. In M. A. Hitt, P. G. Clifford, R. D. Nixon, and K. P. Coyne (eds), Dynamic Strategic Resources, Chichestor, UK: John Wiley, 433-454.

Mason, E. (1939). "Price and Production Policies of Large-scale Enterprise". American Economic Review, 61-74.

McTaggart, J. M., Knotes, P. W., and Mankins, M. C. (1994). The Value Imperative. New york: Free Press.

Mintzberg, H., Ahlstrand, B. and Lampel, J. (1998). Strategic Safari. Hemel Hompstead: Prentince Hall Europe.

Morecroft J. D. W. (1985). "The Feedback View of Business Policy and Strategy". System Dynamics Review, 1, 1: 4-19.

Morecroft J. D. W. (1997). 'The Rise and Fall of People Express: A Dynamic Resource-Based View', In Proc. 1997 Int SD Conf. Istanbul, Turkey.

Morita, M. and Nobuhide T. (1997). 'Analysis of Linkage Dynamics', In Proc. 1997 Int SD Conf. Istanbul, Turkey.

Paraholad, C. K. and Hamd, G. (1990). "The core competence of the corporation". Havard Business Review, 68(3), 79-91.

Park, R.J. (1999). Value-Engineering: a plan for invention. Boca raton, Fla: St. Lucie Press

Penrose, E. (1959). The Theory of the Growth of the Firm. Oxford: Basil Blackwell.

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

Piach, M. and Sterman, J. (1993). "Boom, bust, and failures to lean in experimental markets". Management Sciience, 39(12),1439-1458.

Porter, M. E. (1980). Competitive Strategy. New York: Free Press.

Porter, M. E. (1985). Competitive Advantage. New York: Free Press.

Porter, M. E. (1996). “What is strategy?” Harvard Business Review, 61-78.

Quinn, J. B. (1992). Intelligence Enterprise: A Knowledge and Service Based Paradigm for Industry. New york: Free Prss.

Rappaport, A. (1986). Creating Shareholder Value. New York: Free Press.

Rappaport, A. (1998). Creating Shareholder Value. New York: Free Press.

Reimam, (1989). Managing value: a guide to value-based strategic management. New York: Basil Blachwell.

Ritchie-Dunham, J. L. (1998). ‘Systemic Leverage: Finding Leverage in complex, real-world systems’, In Proc. 1998 Int SD Conf. Quebec City, Canada.

Ritchie-Dunham, J. L. and Nicholas C. Gergantzas (1999). ‘Finding high-leverage strategies and tactics’, In Proc. 1999 Int SD Conf. Wellington, New Zealand.

Scherer (1970). Industrial Market Structure and Economic Performance. Chicago, IL: Rand McNally.

Scott, M. (1998). Value Drivers. Sussex, UK: Wiley.

Senge, P. (1990). THE fifth Discipline: THE Art and Practice of the Learning Organization. New York: Doubleday.

Sterman, J. (1994). “Learning in and about complex systems”. System Dynamics Review. 10(2-3): 291-330.

Stevenson, R. W. and Wolstenholme, E. F. (1999). ‘Value Chain Dynamics’, In Proc. 1999 Int SD Conf. Wellington, New Zealand.

Stewart, G. B. (1990). The Quest for Value. US: Harper.

Subramaniam, M. and Venkatraman, N. (1999). The Influence of Leveraging Tacit Overseas Knowledge for Global New Product Development Capability: An Empirical Examination. In M. A. Hitt, P. G. Clifford, R. D. Nixon, and K. P. Coyne (eds), Dynamic Strategic Resources, Chichestor, UK: John Wiley, 373-401.

Verdin, P. and Williamson P. (1994). Core Competences, Competitive Advantage and Market Analysis: Forging the Links. In G. Hamd and A. Heene (eds), Competence-based Competition, Chichester: Wiley, 77-111.

Walsh, S., Boylan, R., Movone, J. and Paulson, A. (1996). Core Capabilities and Strategy, Empirical Evidence for the Semiconductor Silicon Industry. In H. Thoms and D. O’Neal (eds), Strategic Integration, Chichester: Wiley, 149-166.

Warren K. (1997). ‘Building Resources for Competitive Advantage’, Mastering Management, London: FT Pitman Publishing, 591-598.

Wernerfelt, B. (1989). “A resource-based view of the firm”. Strategic Management Journal, 5, 171-180.

Wilson, J. (1999). Different Industries and Different Customer Values Require Different Resources: Towards the Marriage of Strategic Positioning Theory and the Resource-Based View of the Firm. In M. A. Hitt, P. G. Clifford, R. D. Nixon, and K. P. Coyne (eds), Dynamic Strategic Resources, Chichestor, UK: John Wiley, 129-164.