

# Strategic management system design in VBM context: Findings from value-based literature review and implications for the divisional performance measurement and control

Susumu Tokusaki

## **Abstract**

The purpose of this paper is to investigate the possibility of developing the optimal divisional management system which can maximize the financial performance of decentralized companies implementing shareholder value. Based on the systematic review of the assertions of past literature with regard to VBM and performance measurement and control, it has been found out that matching “SVA,” a derivative of the shareholder value approach, with “Performance Prism,” a multi-dimensional and multifaceted performance evaluation framework, could be more effective than using absolute EVA as one of the financial measures of BSC in managing the individual contribution of each division to the economic value of entire company.

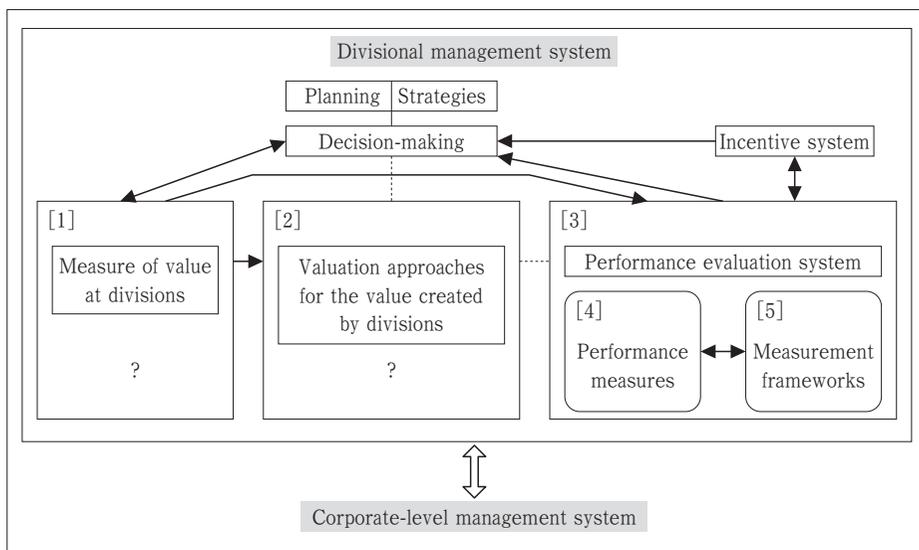
Keywords: VBM, divisional management, business value, performance measures, division value, business valuation, SVA, performance evaluation, shareholder value network, Performance Prism

## **I Introduction**

Much has taken place in the arena of value-based management (hereinafter referred to as “VBM”) during the past three decades. Quite a few researchers argued how CEO’s management planning, strategies and decisions could affect the stock price, while more than a dozen of books and articles opted to explain the relationship between performance measurement and/or rewards at the corporate level and shareholder value creation. However, very little has been discussed about how operating unit performance measurement and control

should be deployed in VBM context.

In decentralized companies pursuing VBM, managers of operating units such as business units and divisions are required to maximize their contribution to shareholder return. And unquestionably, performance evaluation system of the companies applying divisional structure needs to be designed so as to lead the divisional executives on a tour of the optimum day-to-day decisions. This goal will be attained by identifying the optimal measure of value creation as to each division, setting the most appropriate target level of performance, and maintaining effective control. Figure 1 visualizes the contemplated relationships.



**Figure 1: Divisional management system in VBM context (Interim)**

→ Unilateral effect    ↔ (⇔) Bilateral effect    — Direct linkage    ..... Indirect linkage

Arrows present how each factor influences other factors, and vice versa. For example, decision of a divisional executive is affected by the notion of value ([1]) which his business unit is required to deliver. Then, the operating manager’s decisions and actions bring about actual increases in value, of which level shall be measured by the relevant valuation approach ([2]). Performance evaluation exerts influence on his decisions by way of motivational effect, and compensation arrangements, aligned with performance evaluation, also has an effect on his behavior through incentives. Inside the performance evaluation system ([3]), bilateral relationship exists between performance measures ([4]) and measurement frameworks ([5]), which in return affects the interaction between corporate-level management and

divisional management.

This paper aims to examine the possibility of developing the optimum management system which can maximize the shareholder value from the standpoint of operating divisions. Section 2 assesses the linkage between [1] and [2], and it presents the most appropriate measure of value creation in the context of divisional structure, which should be used as the performance measure as well as the performance target. This section also addresses what the most relevant valuation approach is. Section 3 reviews the relationship among [3], [4] and [5], and demonstrates a performance evaluation system which can mass-produce and enlarge the contribution of each division to the value of the company's operations. Section 4 provides the conclusion of this paper, i.e., a conceptual model for the optimal divisional management system in VBM context.

## **II Examination of the compatibility of valuation approaches with VBM and divisional performance evaluation**

### **1 *Marshaling the genealogy of shareholder value and its relation to VBM***

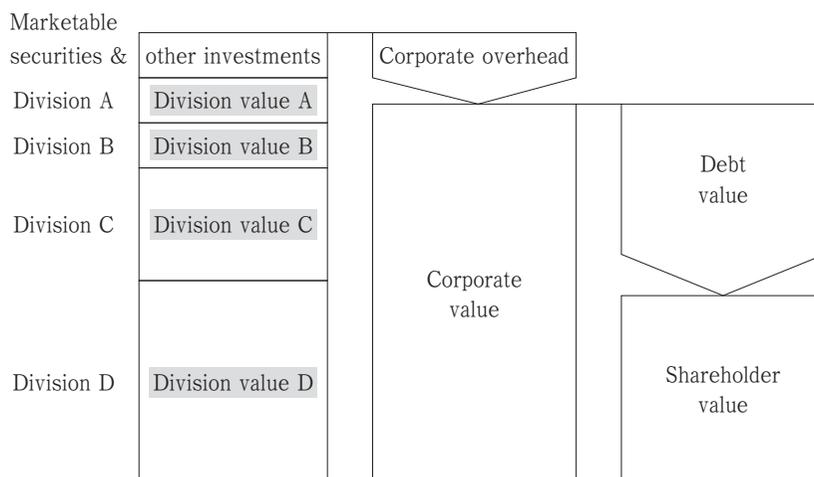
Since Fruhan first used the terminology "shareholder value" as the title of his book in 1979, the notion of shareholder value has been developed by keen researchers and professionals of finance community including Rappaport (1981 & 1986) and Stewart (1986). In the business community, the 1981 address about maximizing shareholder wealth by Jack Welch, then CEO of General Electric, is most often cited for the dawn of the shareholder value era. Consulting firms such as McKinsey & Co., HOLT Value Associates, Boston Consulting Group, Stern Stewart, LEK/Alcar, and A. T. Kearney also contributed to the shareholder value implementation. A thorough review of relevant literature indicates that these players defined shareholder value as "the approach to synchronize the stake of management with that of shareholders through maximization of stock price," one way or another.

The concept of VBM was first argued by Reimann (1989), followed by Copeland, Koller, & Murrin (1990), Weston & Copeland (1992), McTaggart, Kontes, & Mankins (1994), and others. Knight (1997) was the very first to title a book with the word "value based management." While the mission work of VBM has been passed on to Donovan, Tully, & Wortman (1998), Mills (1999), Martin & Petty (2000), Arnold & Davies (2000), Young & O'Byrne (2000), Morin & Jarrell (2000), and others, the VBM school has been systematized as "a general name to the bundle of managerial tools, influence systems, processes, and

mindset which can help lead operations to shareholder value creation.”

These facts signify that in a narrow sense VBM is synonymous with implementing shareholder value which focuses on measurement and evaluation. In a broad sense, the focus is extended to approaches which emphasize construction of influence systems to cultivate mindset and harmonization of processes for the purpose of long-term shareholder value creation. VBM pioneer Reimann (1989) said, “Rappaport (1986) is bound to be a classic in the field,” strongly implying that creating shareholder value and VBM had been perceived to be synonyms since the very outset of VBM. Therefore, in this paper, arguments are developed on the assumption that these two are basically the same.

In the case of VBM it’s imperative to harmonize all activities toward enhancement of shareholder value although the performance of divisional executives without access to the capital market cannot be directly linked to stock price, both theoretically and technically. However, as an increase in the value belonging to common shareholders (shareholder value) comes from the increase in the value of the entire company (corporate value)<sup>1)</sup> of which source is nothing but the value created by operations (business value), it becomes imperative to lead the divisional management by one common objective to enlarge each division’s contribution to the generation and long-term growth of business value. Therefore, the performance of each operating unit needs to be identified by the difference between the end-of-the-year value of the



**Figure 2: Linkage between shareholder value and division value**

Source: Copeland et al. (1990). *Valuation: Measuring and managing the value of companies* (1<sup>st</sup> ed.). New York: John Wiley & Sons. (Exhibit 4.2. Component valuation of a multibusiness company [p.99]) with minor revisions provided by the author.

division and its beginning-of-the-year value, which is the change in business value over the measurement period (hereinafter referred to as “division value”<sup>2)</sup>).

Figure 2 shows that shareholder value of a multi-business company equals the sum of each operating unit’s division value (i.e., business value) plus the current value of marketable securities and other investments, less the cost of corporate overhead and the market value of debt. Marketable securities and other investments are those assets which are not essential to operating the business. Division value is the individual division’s contribution to business value, and corporate value comprises business value. Shareholder value equals corporate value minus debt value. This means that the source of shareholder value is division value. Thus, for divisional management implementing VBM, an appropriate measure for performance goal-setting and evaluation, which in return should be used as the norm of strategic planning and investment decisions, is the incremental division value as the differential profit during the measurement period.

## ***2 Investigating the validity of valuation approaches for measuring division value***

Now we know that the incremental division value is the optimal measure for divisional management’s performance goal-setting and evaluation. Then one question comes up. What is the most rational and objective valuation approach for measuring the incremental division value? The first step in identifying an appropriate valuation methodology is to develop suitable criteria for comparing the various models. Based on the literature review as to the substance of respective business valuation methodologies, I suggest the following:

- (1) Basic requirements
  - (a) *Going-concern value*
    - Does the model account for the value as a going-concern?
  - (b) *DCF valuation*
    - Does it discount projected cash flows to the present?
- (2) Technical requirements
  - (c) *Corporate value*
    - Can the model calculate the value of the entire company?
  - (d) *Business value*
    - Can it estimate the value of operations?
  - (e) *Shareholder value*

- Is the model able to identify the real value of the equity portion?
- (3) Management accounting requirements
- (f) *Performance of the period*
- Will its adoption lead to measurement of the performance during the measurement period?
- (g) *Divisional performance*
- Does it provide an accurate evaluation of the business unit value?

Then each of existing business valuation approaches was carefully examined to see if any of them satisfied all seven criteria. Figure 3 exhibits that SVA, change in residual income, and change in EVA have met all of the contemplated conditions. This means that only three

Model	Going-concern Value	DCF Valuation	Corporate Value	Business Value	Shareholder Value	Performance of the Period	Divisional Performance
<i>Net asset (cost) approach</i>							
Book value	×	×	×	×	×	×	×
Replacement cost	△	×	×	×	×	×	×
Liquidation value	×	×	×	×	×	×	×
Adjusted net worth	×	×	×	×	△	×	×
<i>Market approach</i>							
Comparable company	○	×	×	×	△	×	×
Comparable transaction	○	×	×	×	△	×	×
<i>Income approach</i>							
Free cash flow	○	○	○	○	○	×	○
Flow-to-equity	○	○	△	△	○	×	×
Adjusted PV	○	○	○	○	○	×	×
Dividend discounting	○	○	△	△	△	×	×
Dividend growth	○	○	△	△	△	×	×
Economic profit	○	×	△	△	△	×	△
Residual income	○	×	△	△	△	×	△
EVA	○	△	△	△	△	×	△
CVA	○	○	△	△	○	△	○
Real option	○	○	○	○	○	×	△
Ohlson	○	×	△	△	△	×	×
SVA	○	○	○	○	○	◎	○
Change in RI	○	○	○	○	○	○	○
Change in EVA	○	○	○	○	○	○	○
CFROI/TBR	○	○	○	○	○	△	○

**Figure 3: Analysis of the compatibility of valuation approaches with VBM and divisional management**

◎...Optimum    ○...Conformity    △...Conditional (indirect) conformity    ×...Nonconformity

methodologies are able to estimate various values in line with finance theory, while fulfilling the requirement of management accounting, i.e., “performance evaluation of divisional management during the measurement period.”

While these three models are the alternatives, the SVA model, of which compatibility with Criteria (f) is denoted by ‘©’ (optimum), can be thought to be the best valuation approach<sup>3)</sup> for VBM as it has the added advantage of generating the most reliable estimate of the incremental division value to confirm if the business unit has truly contributed to the company’s value creation.

SVA model, proposed by Alfred Rappaport (1998), is a theoretical framework for business valuation and performance evaluation based on the hypothesis that value is added only if the operating cash inflow or cash net operating profits after taxes (hereinafter referred to as “NOPAT”) increases at a rate that more than compensates for the incremental investments. SVA means the increase in shareholder value during the measurement period which is characterized by the amount of value created by the forecasted scenario. SVA can be obtained by subtracting the present value of incremental investment from the present value of the capitalized NOPAT increase. Therefore, SVA of the project’s life can be calculated as follows:

$$\text{SVA (Life)} = \sum_{t=1}^n \left( \text{PV of the capitalized NOPAT increase of each period} - \text{PV of incremental investment of the measurement period} \right)$$

Based on this model, SVA of period  $t$  can be calculated by adding the present value of residual value (capitalized value of NOPAT <sub>$t$</sub> ) at the end of period  $t$  to the cumulative present value of free cash flow (FCF = NOPAT – Incremental working capital investment – Fixed capital investment) up to period  $t$ , minus the period  $t-1$  value calculated in the same way. Alternatively, annual SVA is operating cash flow plus the end-of-the-year capitalized value of the current cash flow level minus the beginning-of-the-year value of the latter. The present value of residual value at the end of the forecast period plus cumulative present value of FCF during the forecast period makes business value. As an increase in business value over one period is the end-of-the year business value minus the beginning-of-the-year business value, following the same calculation process at any operating division should help recognize its incremental division value, which is a component of the company’s business value.

By definition, corporate value is comprised of the business value plus non-operating assets (investments and unused property), and shareholder value is corporate value minus market value of debt. Alternatively, shareholder value is made up of the capitalized value of the current cash flow level and SVA over the forecast period. Therefore, provided that the value of non-

operating assets and market value of debt is constant, each division's contribution to the shareholder value increase (i.e., SVA of each division) equals to the incremental division value. This means that SVA can be used as a substitute for the incremental division value which is the performance measure as well as the performance target for divisional management.

The SVA model successfully remedies the shortcomings of other valuation models with claimed linkages to shareholder value such as economic profit, residual income, and EVA. The latter three approaches in one form or another demonstrate the same assertions as residual income is a refinement of economic profit and EVA is a variant of residual income. For example, the residual income model deducts beginning book value times the cost of capital (i.e., a non-cash charge based on investments made in the past), while the SVA model deducts the actual investment during the measurement period. Though the EVA model mistakenly treats NOPAT itself as value added in each period when none exits, the SVA model correctly avoids reporting value added as no investment and no further growth in NOPAT is made. The three economic profit-based models all recognize total value added as the difference between shareholder value and beginning book value, allowing total value added to be affected by how much money was assigned to beginning book value. The SVA model, which discounts projected cash flows to the present, can manage to remedy the defect.

The change in residual income model and the change in EVA model generate identical valuations with the SVA model provided that certain critical conditions including the existence of clean-surplus accounting can be met. All other valuation models lack one or more essential conditions and also fail to serve as reliable estimates of the value created by the division in the measurement period, leaving the foregoing three models as the appropriate approaches to value-based performance measurement at the operating level. To conclude, by seeking to yield SVA, an operating division can enhance its contribution to the well-being of the company as creating shareholder value is just synonymous with gaining competitive advantage.

### **III Search for the optimal business unit performance evaluation system for the creation of division value**

#### **1 *History of performance measures***

In the field of management, there have been a diversity of definitions for the terminology *performance* such as "one of those suitcase words in which everyone places the concepts that suit them" (Bourguignon, 1995), "the process through which the various types of outcome and

results are achieved” (Kaplan & Norton, 1992; Lebas, 1995), “the action, the result of the action, and the success of the result compared to some benchmark” (Bourguignon, 1995; Corvellec, 1995), “effectiveness and efficiency” (Neely, Gregory, & Platts, 1995), and “the act of performing or functioning” (Meyer, 2002). According to Lebas & Euske (2002), performance is a social construct resulting from the identification and sharing of a causal model that is meaningful only within a decision-making context.

Though a universal definition of performance is yet to exist, there seems to be an agreement that it refers to action or its result or relative success of the result (letting the context take care of the meaning). In VBM context, the former one relates to “create value,” while the latter two are compatible with “the value created.” A thorough review of the relevant literature which showed the extent of diversity of the meaning of this word, lead to the conclusion that in VBM context there are two basic requirements for the divisional performance measures with regard to value creation: (i) provision of measures to evaluate the accomplishment of goals, and (ii) possibility of impacting on the decision.

Is there any agreement as to the categorization of performance measures? Financial accounting-based performance measures have long been emphasized in part due to their strong link with the disclosure system. Investigations by Lingle & Schiemann (1996) and Malina & Selto (2004) are two representative empirical researches with regard to the significance of accounting performance measures in ensuring consensus in the evaluation of performance.

In the area of management accounting, in the early 1980s, Kaplan (1983 & 1984) began to argue that wrong things were being measured as the measures traditionally used had become inappropriate given the modern environment. Then Johnson & Kaplan (1987) highlighted the failure of financial performance measures to reflect changes in the competitive circumstances and strategies of modern organizations. Authors such as Bruns (1998) and Otley (2002 & 2007) subsequently criticized the functional limit of accounting-based performance measures regarding the measurement of performance from investors’ standpoint, while Rappaport (1986) and Stewart (1986) from finance community had begun to argue likewise much earlier.

Going with the tide for the development of multifaceted and balanced frameworks associated with performance measurement, many authors have proposed various classification of performance measures including “cost or non-cost” and “internal or external” (Keegan, Eiler, & Jones, 1989), “internal or external” (Lynch & Cross, 1991), “measures related to results or those focusing on the determinants of those results” (Fitzgerald, Johnston, Brignall, Silvestro, & Voss, 1991), “short-term or long-term,” “financial or nonfinancial,” “lagging or leading,” and

“external or internal” (Kaplan & Norton, 1992), and “inputs, processing systems, outputs, outcomes, and goal” (Brown, 1996).

Then Andersen, Fornell, & Lehmann (1994) began to argue that some properly measured non-financial measures could predict financial performance, and authors who advocated using non-financial measures together came to the fore subsequently. The latter includes Meyer (2002) and Lebas & Euske (2002) who focused on the cause-and-effect sequence of financials as lagging indicators of performance and non-financials as leading indicators. Thus the central argument of the performance measurement eventually regressed to the classification of financial measures and non-financial measures which had been sought in the Tableau de Bord in the early twentieth century.

## ***2 The concept of performance measures in this research***

Based on the findings from the foregoing literature review conducted in this research, I think it appropriate to define performance as “the possibility of creating division value” or “the process through which divisional executives take actions to generate division value” and performance measures as “the tool to motivate to enhance division value.” From the viewpoint of Meyer (2002) that modern performance measurement joined the dictionary definitions of performance (i.e., the act of performing or functioning) and the economic definition (i.e., future revenues discounted to present value), it may be imperative that selection of strategy with the maximum expected SVA, which can deliver maximum cash flow and shareholder value, become a primary interest of management whose performance evaluation is purposed to increase the division value.

Rappaport (1998) argued that the evaluation of business unit’s value creation (or performance of operating unit managers) should be based on SVA and other leading indicators of value, implying that the object of performance evaluation comprises SVA, which is the optimum measure of outcome (result) as a substitute for division value, and financial and non-financial measures linked to macro and micro value drivers including value leading indicators tied directly to long-term value creation potential. In this regard, I suggest re-defining the “performance measures” as the metric of the degree of goal-attainment and establishing the notion of “process measures” as the index of effort level during the process. Obviously, SVA is suitable to the former category, whereas value drivers including the value leading indicators are compatible with the latter.

### 3 *Developing measurement frameworks into evaluation systems*

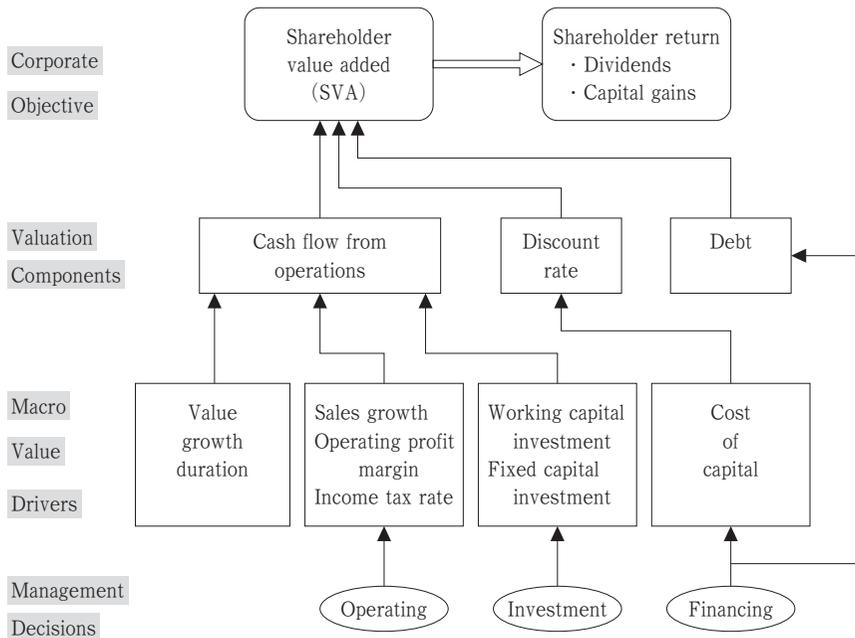
The goal of VBM system is to link corporate strategies and management's performance evaluation to the creation of shareholder value. As various statutes and powerful market pressures necessitate the balance of stakes among the stakeholders, in the long-term division executives will be required to manage their divisions so as to maximize value to benefit every stakeholder.

The shareholder value network, proposed by Alfred Rappaport (1986 & 1998), is a theoretical framework to make shareholder value operational, which depicts the essential link between the corporate objective of creating shareholder value and the basic valuation parameters or value drivers. It can be used to analyze companies and business units, as well as strategies.

As the backbone framework of the SVA model, the shareholder value network approach undertakes the base for the performance evaluation system supporting the divisional management endeavoring to generate SVA as well as division value. In the first edition of *Creating shareholder value*<sup>4)</sup> (1986, Free Press), Rappaport established seven financial macro value drivers which influence business value. Then, in the second edition<sup>5)</sup>, he showed nineteen operation-related micro value drivers that influence the seven financial or macro value drivers, as well as six leading indicators. Figure 4 exhibits the shareholder value network.

By now it appears that the shareholder value network itself, which is the supportive framework for the SVA approach, may well function as the performance evaluation system for the VBM-minded divisional management. So, the question here is: Can it satisfy all the requirements of performance evaluation in VBM context? Here again, the first step in identifying an appropriate performance evaluation framework is to develop suitable criteria for comparing the various approaches. Based on the literature review as to the substance of existing performance measurement and evaluation methodologies, the following were applied:

- (1) Basic requirements
  - (a) *Stakeholders' perspectives*
    - Does the framework reflect the standpoints of all stakeholders?
  - (b) *Value drivers*
    - Does it account for the causal relationships?
- (2) Technical requirements
  - (c) *Financial measures*



**Figure 4: The Shareholder Value Network**

Source: Rappaport, A. (1986). *Creating shareholder value: The new standard for business performance*. New York: Free Press. (Figure 3-1. The Shareholder Value Network [p. 76]) with minor revisions provided by the author.

- Can the framework measure financial indicators?
- (d) *Non-financial measures*
  - Can it evaluate non-financial indicators?
- (3) Management accounting requirements
  - (e) *Divisional performance*
    - Is the framework able to deal with accurate measurement of the business unit performance?
  - (f) *Performance of the period*
    - Will its adoption lead to evaluation of the measurement period performance?

While the shareholder value network is a fundamental performance evaluation framework for the divisional management operating in VBM environment, it failed to take direct account of stakeholders (i.e., (a)) except for shareholders (investors) and debtholders. Furthermore, its examination of non-financial factors (i.e., (d)) was far from sufficient, thereby making a

conceptual and technical reinforcement by way of combination with other methodologies indispensable.

Then each of existing performance measurement and evaluation approaches was carefully examined to see if any of them satisfied all six criteria. Figure 5 exhibits that “Performance Prism” alone has met all of the conditions contemplated herein. This means that only one methodology is able to account for the cause-and-effect link from the viewpoints of various stakeholders based on non-financial data, while satisfying the need of divisional performance evaluation over the measurement period. Note that, as for the performance prism framework, all criteria are denoted by ‘○’ (full conformity), demonstrating that it is the most appropriate performance evaluation methodology for the divisional management among the existing approaches.

Framework/Approach	Stakeholders' Perspectives	Value Drivers	Financial Measures	Non-financial Measures	Divisional Performance	Performance of the Period
<i>Shareholder value network</i>	×	○	○	△	○	○
Budgeting	×	△	○	×	○	○
Tableau de bord	×	○	○	○	○	○
MBO (management by objectives)	△	×	○	○	△	○
Malcolm Baldrige National Quality Award	○	○	○	○	△	△
PMM (performance measurement matrix)	×	×	○	○	△	○
SMART (strategic measurement and reporting technique) pyramid	△	△	○	○	○	○
Results-determinants framework	×	○	○	○	△	○
Business excellence model	○	○	○	○	△	△
Balanced scorecard	△	○	○	○	○	○
EVA management system	×	○	○	△	○	○
Japan Quality Award	○	○	○	○	△	△
Input-process-output-outcome framework	△	○	○	○	△	○
Performance prism	○	○	○	○	○	○

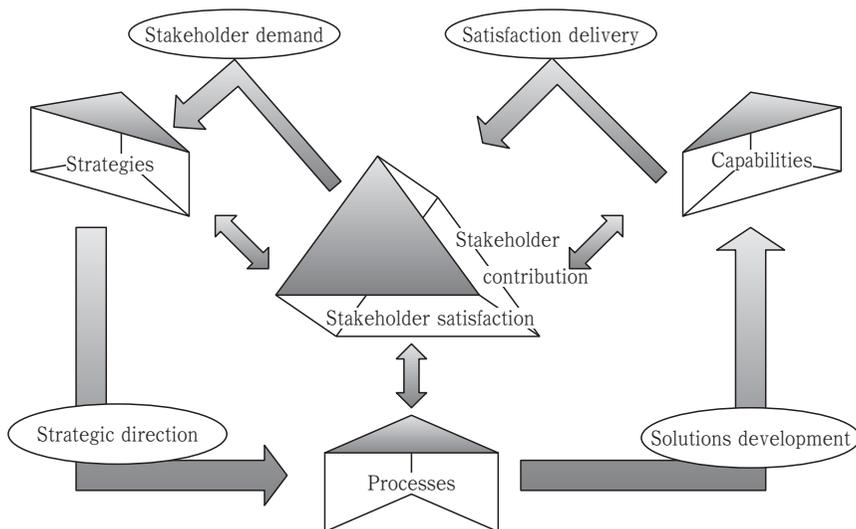
**Figure 5: Analysis of the compatibility of performance measurement/evaluation frameworks with VBM and divisional management**

○...Full conformity    △...Conditional (limited) conformity    ×...Nonconformity

Performance Prism is a multi-dimensional and multifaceted framework associated with performance evaluation developed by Neely & Adams (2001), which can measure the level of

satisfaction as to the requirements of all relevant stakeholders to the highest degree. That the performance prism framework is in line with all the criteria means that it can supplement the shareholder value network best. Therefore, the optimal performance evaluation approach for the divisional management implementing VBM can be formed by the combination of the shareholder value network and the performance prism framework.

Many researchers have identified shortcomings of BSC including its lack of perspectives of some critical stakeholders such as employees and suppliers. They also criticized that the EVA management system did not consider many non-financial factors as value drivers and failed to reflect the perspectives of important stakeholders other than shareholders and financial institutions. Kennerley and Neely (2002) emphasized that Performance Prism built on the strengths of then existing frameworks and addressed the latter's weaknesses with regard to performance measurement. By centering various important stakeholders such as shareholders, other investors, customers, intermediaries, employees, suppliers, regulators, and communities in the framework, the performance prism framework successfully reflects all of the areas of performance that influence the performance of an organization. This feature enables a balanced picture of the business to be provided, highlighting all measures for each category. Neely, Adams, & Kennerley (2002) exemplified over 200 measures in their demonstration of its application. Figure 6 exhibits the performance prism framework.



**Figure 6: The Performance Prism**

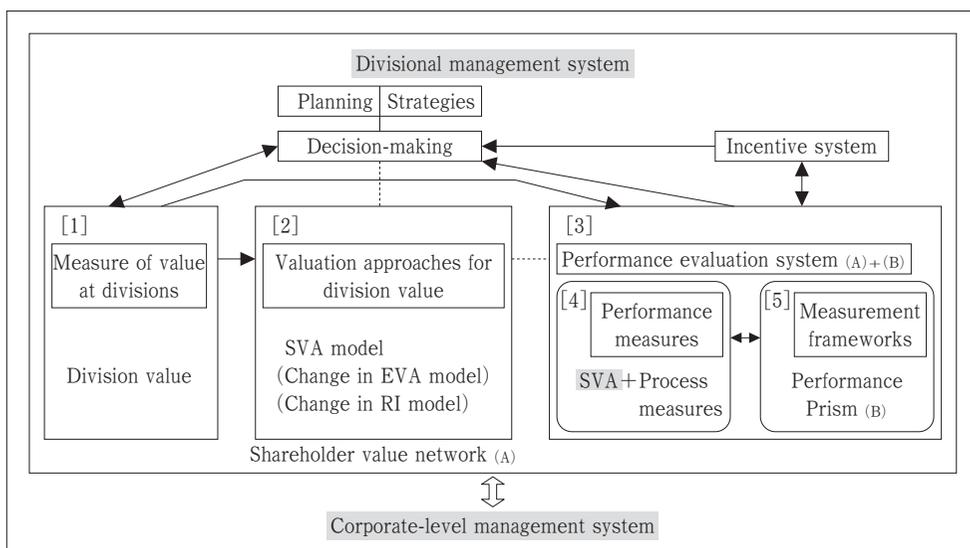
Source: Neely, A. (2002). *Business performance measurement: Theory and practice*. Cambridge, UK: Cambridge University Press. (Figure 9.1. Delivering stakeholder value [p. 153]) with minor revisions provided by the author.

The five distinct but linked perspectives of performance demonstrate that stakeholder satisfaction as an organization's result is a function of the other prism facets as determinants. Thus Performance Prism focuses on top-down deployment of strategy and its explicit inclusion of capabilities ensures consistency with the resource-based view of the firm. This enables strategies to emerge from an organization's capabilities being designed to achieve specific goals. Needless to say, when integrating the shareholder value network with the performance prism framework, the contemplated value-based performance measures of division value and SVA as well as other related measures should be included in the "investor satisfaction measures" category.

#### **IV Conclusions**

Based on the systematic review of the assertions of past literature with regard to creating shareholder value and VBM, it has been found out that the most appropriate measure of value creation in the context of divisional structure, which should be used as the performance measure as well as the performance target, is "division value" and its most relevant valuation approach is the "SVA model." In addition, a rigorous examination of past researches concerning performance measures and performance measurement/evaluation frameworks has provided that integrating the shareholder value approach, which is the theoretical base of the SVA model, with the performance prism framework can possibly develop a superb divisional performance evaluation system which can contribute to the production and enlargement of division value as well as SVA. In short, if we denote Performance Prism in capitals as "PP," the "SVA=PP management system," which appropriately accommodates SVA in a performance prism formulation, may well form the optimal divisional management system in VBM context. Figure 7 integrates the foregoing arguments and presents the conclusion.

It should be noted that performance evaluation can create value only if data are deliberately analyzed and appropriate actions follow close behind. By introducing division value as the organizational standard for planning, performance evaluation, and incentive compensation, divisional executives can possibly ensure continuous creation of shareholder value, as implementing shift to the contemplated SVA=PP divisional management system can serve to improve management productivity by facilitating more efficient and effective decision making.



**Figure 7: The SVA = PP Divisional Management System**

→ Unilateral effect    ↔ (⇔) Bilateral effect    — Direct linkage    ..... Indirect linkage

#### Notes

- 1) The value created by operations, i.e., the value of operations, is called “business value” (①). Business value is synonymous with the fair value of total operating assets, which includes the value of goodwill and off-balance-sheet intangible assets as well as intellectual properties. The current value of non-operating assets such as marketable securities and other investments which are not essential to operating the business, needs to be included in estimating the value of the entire company called “corporate value” (②). The value of the equity portion is called “shareholder value” (③), which is equal to ② less the value of debt. In the efficient capital market, ③ is equal to the market capitalization of the company. Many authors from finance community have named the notions of value differently while they agreed to the basic definitions. For example, Stern Stewart (1986) designated ① as “value of the company’s total capitalization” and expressed the summation of ① and the value of non-operating capital as “value” or “value of company,” while their ③ was “value of common equity.” According to Rappaport (1986 & 1998), ② and ③ were “corporate value” and “shareholder value” respectively. Copeland et al. (1990) presented ① as “value of operations” and expressed ② as “company value,” then they designated ③ as “equity value.” In the literature of Mills (1996), ① was “business value,” and ② and ③ were called “corporate value” and “strategic value.” Martin & Petty (2000) designated ① as “economic value” or “strategic value,” while they expressed ② as “firm value.” According to Damodaran (2002), ② was “value of firm” and ③ was “value of equity.” In this paper, ① is called “business value,” while ② and ③ are named “corporate value” and “shareholder value” respectively.
- 2) In this paper, a contribution made by each operating unit to business value is called “business unit

value.” In the case of divisional organization, it is specifically named “division value.”

- 3) According to Rappaport (1998, p. 127), as change in residual income is a simple multiple of SVA, businesses that choose to maximize change in residual income should in principle make decisions no differently than those that maximize SVA. The following formula shows that change in residual income is SVA multiplied by the cost of capital.

$$\frac{\text{Change in residual income}}{\text{Cost of capital}} = \frac{\text{Change in NOPAT}}{\text{Cost of capital}} - \text{Incremental investment} = \text{SVA}$$

If properly calculated, change in invested capital will be identical to incremental investment in the SVA formula. Thus, dividing the formula by the cost of capital yields the formula for SVA, which yields annual value-added results that are consistent with economic valuation principles. If the necessary conditions are met, change in residual income will become identical to change in EVA. As both residual income and EVA are based on operating profits after taxes, they can coincide with operating cash flow or cash NOPAT calculation only if the necessary conditions including application of clean-surplus accounting are met. Thus, for purposes of performance evaluation, SVA is the superior measure than change in residual income and change in EVA while they all fulfill conditions (a), (b), (c), (d), (e), (f), and (g).

- 4) Rappaport, A. (1986). Creating shareholder value: The new standard for business performance. New York: Free Press.
- 5) Rappaport, A. (1998). Creating shareholder value: A guide for managers and investors, revised and updated. New York: Free Press.

### References

- Anderson, E., Fornell, C., & Lefmann, D. (1994). Customer satisfaction, market share, and profitability: Findings from Sweden. Journal of Marketing 58 (3), 53-66.
- Arnold, G. & Davies, M. (2000). Value-based management: Context and application. Chichester, UK: John Wiley & Sons.
- Bourguignon, A. (1995). Peut-on definir la performance? Revue Francaise de Comptabilite, 269, 60-65.
- Bourguignon, A., Malleret, V., & Norreklit, H. (2004). The American balanced scorecard versus French tableau de bord: the ideological dimension. Management Accounting Research 15, 107-134.
- Brealey, R., Myers, S., & Allen, F. (2006). Principles of corporate finance (8<sup>th</sup> ed.). New York: McGraw-Hill/Irwin.
- Brown, M. G. (1996). Keeping score: Using the right metrics to drive world-class performance. New York: Quality Resources.
- Bruns, W. (1998). Profit as a performance measure: Powerful concept, insufficient measure. Performance measurement — Theory and practice: The First International Conference on Performance Measurement, 14-17 July, Cambridge, UK.
- Copeland, T., Koller, T., & Murrin, J. (1990). Valuation: Measuring and managing the value of companies (1<sup>st</sup> ed.). New York: John Wiley & Sons.

- Copeland, T., Koller, T., & Murrin, J. (1994). Valuation: Measuring and managing the value of companies (2<sup>nd</sup> ed.). New York: John Wiley & Sons.
- Corvellec, H. (1995). Stories of achievements: Narrative features of organizational performance. Sweden: Lund University Press.
- Damodaran, A. (2002). Investment valuation: Tools and techniques for determining the value of any asset (2nd ed.). New York: John Wiley & Sons.
- Donovan, J., Tully, R., & Wortman, B. (1998). The value enterprise: Strategies for building a value-based organization. Whitby, Canada: McGraw-Hill Ryerson.
- Drucker, P. (1954). The practice of management. New York: Harper.
- Epstein, M. & Manzoni, J. (1997). The balanced scorecard and tableau de bord: Translating strategy into action. Management Accounting 11 (4), 28-36.
- Feltham, G. & Ohlson, J. (1995). Valuation and clean surplus accounting for operating and financial activities. Contemporary Accounting Research 11 (2), 689-731.
- Feltham, G. & Ohlson, J. (1999). Residual earnings valuation with risk and stochastic interest rates. The Accounting Review 74 (2), 165-183.
- Fitzgerald, L., Johnston, R., Brignall, T., Silvestro, R., & Voss, C. (1991). Performance measurement in service businesses. London, UK: Chartered Institute of Management Accountants.
- Fruhan, W. (1979). Financial strategy: Studies in the creation, transfer and destruction of shareholder value. New York: Irwin.
- Hendricks, K. & Singhal, V. (1996). Quality awards and the market value of the firm: An empirical investigation. Georgia Tech, Management Science 42 (3), 415-436.
- Hope, J. & Fraser, R. (2003). Beyond budgeting: How managers can break free from the annual performance trap. Boston, MA: Harvard Business School Press.
- Ittner, C. & Larcker, D. (1998). Innovations in performance measurement: Trends and research implications. Journal of Management Accounting Research (10), 205-238.
- Ittner, C. & Larcker, D. (2001). Assessing empirical research in management accounting: A value-based management perspective. Journal of Accounting and Economics (32), 349-410.
- Johnson, H. & Kaplan, R. (1987). Relevance lost: The rise and fall of management accounting. Boston, MA: Harvard Business School Press.
- Kaplan, R. (1983). Measuring manufacturing performance: A new challenge for managerial accounting research. Accounting Review 58 (4), 686-705.
- Kaplan, R. (1984). Yesterday's accounting undermines productions. Harvard Business Review 62, 95-101.
- Kaplan, R. & Norton, D. (1992). The balanced scorecard: Measures that drive performance. Harvard Business Review 70 (1), 71-79.
- Kaplan, R. & Norton, D. (1996a). The balanced scorecard: Translating strategy into action. Boston, MA: Harvard Business School Press.
- Kaplan, R. & Norton, D. (1996b). Linking the balanced scorecard to strategy. California Management Review 39 (1), 53-79.

- Kaplan, R. & Norton, D. (2001). Transforming the balanced scorecard from performance measurement to strategic management: Part 1. Accounting Horizons 15 (1), 87-104.
- Keegan, D., Eiler, R., & Jones, C. (1989). Are your performance measures obsolete? Management Accounting 70 (12), 45-50.
- Kennerley M. & Neely A. (2002). Performance measurement frameworks: A review. Neely, A. (2002). Business performance measurement: Theory and practice. England: Cambridge University Press, Chapter 9, 145-155.
- Knight, J. (1997). Value based management: Developing a systematic approach to creating shareholder value. New York: McGraw-Hill.
- Lebas, M. (1995). Oui, il faut définir la performance. Revue Francaise de Comptabilite, n° 269, July-August.
- Lebas M. & Euske K. (2002). A conceptual and operational delineation of performance. Neely, A. (2002). Business performance measurement: Theory and practice. England: Cambridge University Press, Chapter 5, 65-79.
- Lingle, J. & Schiemann, W. (1996). From balanced scorecard to strategic gauges: Is measurement worth it? Management Review 85 (3), 56-61.
- Lynch, R. & Cross, K. (1991a). Measure up! Yardsticks for continuous improvement. Cambridge, MA: Blackwell.
- Lynch, R. & Cross, K. (1991b). Measure up! The essential guide to measuring business performance. London, UK: Mandarin.
- Madden, B. (1999). CFROI valuation: A total system approach to valuing the firm. Oxford: Butterworth-Heinemann.
- Malina, M. & Selto, F. (2004). Choice and change of measures in performance measurement models. Management Accounting Research 15 (4), 441-469.
- Martin, J. & Petty, J. (2000). Value based management: The corporate response to the shareholder revolution. Boston, MA: Harvard Business School Press.
- McTaggart, J., Kontes, P., & Mankins, M. (1994). The value imperative: Managing for superior shareholder returns. New York: Free Press.
- Meyer, M. (2002). Finding performance: The new discipline in management. Neely, A. (2002). Business performance measurement: Theory and practice. England: Cambridge University Press, Chapter 4, 51-62.
- Michael, B. & Walkert, M. (1998). Residual income: Past and future. Management Accounting Research 9 (4), 391-419.
- Miller, M. & Modigliani, F. (1961). Dividend policy, growth, and the valuation of shares. Journal of Business (34), 411-433.
- Mills, R. (1999). Managerial finance, shareholder value and value based management. Lechlade, UK: Mars Business Associates.
- Morin, R. & Jarrell, S. (2000). Driving shareholder value: Value-building techniques for creating shareholder value. New York: McGraw-Hill.

- Neely, A. (2002). Business performance measurement: Theory and practice. Cambridge, UK: Cambridge University Press.
- Neely, A. (2007). Business Performance Measurement: Unifying theories and integrating practice (2<sup>nd</sup> ed.). Cambridge, UK: Cambridge University Press.
- Neely, A. & Adams, C. (2001). Perspectives on performance: The performance prism. Journal of Cost Management 15 (1), 7-15.
- Neely, A., Adams, C., & Kennerley, M. (2002). The performance prism: The scorecard for measuring and managing stakeholder relationships. London, UK: Financial Times/Prentice Hall.
- Neely, A., Gregory, M., & Platts, K. (1995). Performance measurement system design: A literature review and research agenda. International Journal of Operations and Production Management 15 (4), 80-116.
- Neely, A., Kennerley M., & Adams C. (2007). Performance measurement frameworks: A review. Neely, A. (2007). Business performance measurement: Unifying theories and integrating practice (2<sup>nd</sup> ed.). England: Cambridge University Press, Chapter 7, 143-162.
- Neely A., Sutcliff, M., & Heyns, H. (2001). Driving value through strategic planning and budgeting. London, UK: Accenture.
- Ohlson, J. (1990). A synthesis of security valuation theory and the role of dividends, cash flows, and earnings. Contemporary Accounting Research (7), 1-19.
- Ohlson, J. (1995). Earnings, book values and dividends in equity valuation. Contemporary Accounting Research 11 (2), 661-687.
- Otley, D. (2002). Measuring performance: The accounting perspective. Neely, A. (2002). Business performance measurement: Theory and practice. England: Cambridge University Press, Chapter 1, 3-21.
- Otley, D. (2007). Accounting performance measurement: A review of its purposes and practices. Neely, A. (2007). Business performance measurement: Unifying theories and integrating practice (2<sup>nd</sup> ed.). England: Cambridge University Press, Chapter 1, 11-35.
- Palepu, K., Bernard, V., & Healy, P. (1996). Introduction to business analysis and valuation. Boston, MA: South-Western.
- Rappaport, A. (1981). Selecting strategies that create shareholder value. Harvard Business Review (May-June), 139-149.
- Rappaport, A. (1986). Creating shareholder value: The new standard for business performance. New York: Free Press.
- Rappaport, A. (1998). Creating shareholder value: A guide for managers and investors, revised and updated. New York: Free Press.
- Reimann, B. (1989). Managing for value: A guide to value-based strategic management. Cambridge, MA: Basil Blackwell.
- Reinbergs, I. (2000). Vyaderm Pharmaceuticals. Boston, MA: Harvard Business School Publishing.
- Simons, R. (2000). Performance measurement and control systems for implementing strategy. New York: Prentice-Hall.

- Solomons, D. (1965). Divisional performance: Measurement and control. Homewood, IL: Richard D. Irwin.
- Stern, J., Stewart, B., & Chew D. (1998). The EVA financial management system. Stern J. & Chew D. (1998) The revolution in corporate finance (3<sup>rd</sup> ed.). Malden, MA: Blackwell.
- Stewart, G. B. (1986). Stern Stewart corporate finance handbook. New York: Stern Stewart.
- Stewart, G. B. (1991). The quest for value: The EVA<sup>TM</sup> management guide. New York: Harper Collins.
- Stewart, G. B. (1994). EVA<sup>TM</sup> : Fact and fantasy. Journal of Applied Corporate Finance (Summer), 78.
- Tokusaki, S. (1990). Valuation of target companies: Theory and practice. Accounting View 172, 45-55.
- Weston, J. & Copeland, T. (1992). Managerial finance (9<sup>th</sup> ed.). Orlando, FL: Dryden Press.
- Young, S. & O'Byrne, S. (2000). EVA<sup>®</sup> and value-based management: A practical guide to implementation. New York: McGraw-Hill.