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Beyond the Balanced Scorecard:

Refining the Search for Organizational Success Measures

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Measuring organizational success is a continuous challenge for both managers and researchers. While financial measures were in wide use for many years, new frameworks have emerged in recent years that extend organizational perspectives beyond traditional financial measures. Among them the Balanced Scorecard is one of the most popular new frameworks. However, in spite of its wide usage, it has shown to be inadequate in various circumstances and across differing firm types. Additional studies are therefore needed to keep exploring a problem that has been relevant for at least thirty years.

This study was dedicated to the question of how to assess the organizational success of commercial firms. It also tested specific measures that are relevant to different kinds of organizations, and provides managers with a useable template for assessing organizational success. We have identified twelve potential baseline measures across five major success dimensions (financial, market, process, people, and future) that can be examined as applicable to different firms and firm types. Specific firms can use this framework as a starting point from which to choose measures that would best fit their environment and strategic direction.

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Introduction

What exactly is organizational success? And what do managers have to do to achieve sustainable, on-going success? Much has been written in the popular press in recent years about the short-term view taken by industry—the capital markets make life a quarter-to-quarter event, much of this at the expense of investing for the future. Recent headlines have informed the public about "financial engineering" of quarterly earnings by major corporations such as Quest, Enron, World-

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com and even "Big Blue"—IBM. This short-sighted view, noted over twenty years ago, was termed the "new management orthodoxy" where executives trained in finance and law add shareholder value by asset restructuring and balance-sheet wizardry in lieu of key investments in people, innovation, and marketing infrastructure.[1]

While many articles and books have been written on the topic of "measuring organizational success", managers are still struggling with the issue of performance measurement, and are overwhelmed with performance data. In many real life situations they may have difficulty determining which specific measures are critical to their firm, and which measures will influence managers to do the right thing, and, in such circumstances, many firms keep focus solely on financial measures. This struggle is also noted in academe, where assessing organizational performance has been a major research topic in organization theory literature for over thirty years.

The continuing struggle to define organizational success was recently reflected in the Conference Board's report on "New Corporate Performance Measures". This report discussed the increasing corporate focus on performance, along with the inadequacies of traditional financial measures in the dynamic turbulent environment of today.[2] Hamel and Prahalad, in their best selling book "Competing for the Future" suggested new ways to look at the modern organization that is facing continuous change. They claimed that for survival in the long term, firms must invest in creating the future as seen by the potential needs of their customers, and must have the foresight to create and dominate emerging opportunities.[3]

Thus, the study of organizational performance has been at the core of management research for many years. However, real issues still exist in the definition and measurement of organization performance. While many performance models have been presented in the literature, little empirical testing has been performed to test and validate the frameworks. This paper is written as an attempt to understand the concept of organizational performance in commercial for-profit organizations better, and to contribute to the creation of a practical framework for the assessment of sustainable organizational success.

. . . a new performance model, the Dynamic Multi-Dimensional Performance framework

We have developed a new performance model, called the Dynamic Multi-dimensional Performance (DMP) framework. We have also empirically tested its validity to modern organizations. Specifically, the DMP model synthesizes previous empirical research on performance into five distinct success dimensions and creates a framework that is multi-dimensional in nature, viewing success as a dynamic, on-going concept that is being assessed on various timeframes, and represents multiple stakeholders.

As part of our research, we have identified twelve potential baseline measures across five major success dimensions (financial, market, process, people, and future) that can be examined as applicable to different firms and firm types. This study does not claim that a single set of measures is universal for all companies: rather, it suggests that each company should use the components of the framework in differing ways and with different degrees of importance. The suggested framework captures the different measures that companies may deem important to assess organizational success. The appropriate set of measures depends on the firm's size, technology, strategy, and the particular industry and environment in which a firm operates.

Background

One of the major difficulties in the study of performance is that it is often limited to single constructs. A review of 51 empirical studies of entrepreneurial performance published between 1987 and 1993 noted that a majority of studies included only one of eight performance dimen-

sions.[4] Among them, efficiency, growth, and profit were the most commonly used, and as clearly seen, all three are financial measures.

Moreover, the use of a single dimension as a surrogate for performance produces ambiguous results. Chakravarthy used Peters and Waterman's 'excellent' firms list and compared classic profitability criteria for 'excellent' and 'non-excellent' firms. He found that classic financial measures (ROE, ROC, ROS) are incapable of distinguishing differences in performance between these firms, noting that "accounting-measures-of-performance record only a history of a firm".[5]

Thus, it is not surprising that the limitations of using short-term financial measures as sole indicators of organizational performance have been mentioned in several recent studies. Two significant developments in the building of new performance frameworks are Kaplan and Norton's "Balanced Scorecard"[6] and Shenhar and Dvir's "Success Dimensions" framework.[7] While both of these approaches have some limitations, the Balanced Scorecard has been adapted by many large organizations and has been the focus of The Conference Board report targeted to practicing corporate executives and managers.

Review of existing performance frameworks

"The Balanced Scorecard" and the "Success Dimensions" are both based upon the premise that success has many facets, and "what you measure is what you get". Thus managing an organization in an effective way will lead to the use of performance measures, which will indicate whether the organization is successful over time. Looking at the right measures will prompt managers to do the necessary things to meet these success measures. "The Balanced Scorecard" and the "Success Dimensions" models form the basis for the proposed DMP model.

. . . that measuring the success of an organization using only one time dimension can be misleading.

The Balanced Scorecard: Kaplan and Norton's assertion is that traditional financial accounting measures (e.g., ROI, EPS) can give misleading signals for continuous improvement and innovation, and are out of step with the skills and competencies needed by today's organizations. "The Balanced Scorecard" is a multi-dimensional framework that translates a company's strategy into specific measurable objectives. This includes a combination of financial measures, indicating results of actions previously taken, and operational measures that are drivers of future performance. Typically, 15-20 measures are developed in four dimensions (customer, internal, innovation and learning, financial). However, even Kaplan and Norton recently noted that an excellent set of measures does not guarantee a winning strategy.[8]

Success Dimensions: Shenhar and Dvir's "Success Dimensions" model is a multi-dimensional concept that defines effectiveness across three organizational levels (project, business unit, and company) and four time horizons (very short, short, long, very long time-frames). The key premise is that measuring the success of an organization using only one time dimension can be misleading. Indicators of short-term corporate success (sales, profit, cash position) are measured at a single point of time, and may change during the following quarter or next year. More importantly, these measures may not be indicative of longer-term corporate success. Any lack of corporate vision and values, technology strategy, investments in people, and new businesses and ventures will typically not be evident in a short-term organizational view, but must be observed and assessed over the longer term. For example, the development and optimal use of core competencies is one of the critical success factors comprising the 'long term' dimension. Core competencies may be new technologies, processes, or marketing and distribution capabilities exploited for customer benefits. In the 'very long' term, Shenhar and Dvir suggest using the 'ability to see the future' and to 'define new needs' before competitors and customers as the critical success measures.[9]

Limitations of previous models

Both the Balanced Scorecard and the Success Dimensions models provide a major breakthrough in assessing organizational performance and in many ways are grounded in common theory. But limitations in both models have been noted. For example, Atkinson, Waterhouse and Wells note that The Balanced Scorecard model was incomplete because it fails to: (1) adequately highlight the contributions that employees and suppliers make to help the company achieve its objectives, (2) identify the role of the community in defining the environment within which the company works, and (3) identify performance measures to assess stakeholders' contributions.[10] Smith noted that The Balanced Scorecard fails to account for the role of "motivated employees", a critical issue especially in the service sector.[11] Finally, while The Balanced Scorecard framework provides constructs for multiple measures and overcoming the limitations of single measures, there is no clear provision for very long-term measures; the distinction between means and ends is not well defined, and the model probably needs additional empirical validation.

While the "Success Dimensions" approach provides a framework over both short and very long time-frames, its primary limitation is that no specific operational measures are provided for any dimension. The constructs of "strategic leverage" and "creating the future" do not easily translate into measurable variables for organizations. Moreover, while Shenhar and Dvir's model has been empirically tested at the Strategic Business Unit and project levels, it has not been tested at the corporate level.

The lack of focus on a company's human resources dimension is perhaps the most notable weakness in both The Balanced Scorecard and the Success Dimensions models. Several companies noted the issue of a lack of people orientation in The Balanced Scorecard. For example, while Best Foods (now part of Unilever) has been using The Balanced Scorecard for years, the company felt it necessary to add a fifth dimension, "People Development" to address this critical issue.[12] Similarly, many European firms (e.g., Nokia) have emphasized the importance of human resources management and the way they treat their employees as a critical component to their success. These realizations have prompted companies to include specific assessment of management training, slack time, and issues relating to the company's global employee population.

Scholarship has linked the management of the firm's resources to its performance.

A significant level of scholarship has linked the management of the firm's human resources to its performance, highlighting the criticality of a 'People Development' dimension.[13] A pragmatic summary of the importance of human resources is provided by Youndt, Snell, Dean and Lepak who note, "The effective management of human capital, not physical capital, may be the ultimate determinant of organizational performance".[14]

The conceptual model

Noting the limitations of previous models, the proposed DMP model has used The Balanced Scorecard and the Success Dimensions models as a foundation. To identify operational measures, we organized and integrated the empirical literature on performance measurement as seen through various research streams, such as corporate entrepreneurship, strategy, process and product development, marketing, and economics or finance. This view aids understanding of the big picture, since each stream looks at success measures from a different perspective and knowledge base, and offers critical clues toward a more developed performance model.

The suggested framework, which emerged includes five major dimensions: Financial, Market, Process, People, and Future. Together they provide an integrative model that seems to address

many of the limitations discussed earlier (see Figure 1). The model also provides a dynamic progression, representing multiple time horizons, starting with the financial dimension that provides measures of the recent past and the very short-term range, to the future dimension that provides metrics over a three to ten year horizon.

In the following discussion, we describe the emergence of the five dimensions as identified in the strategy literature. Similar clues can be found in the other research streams: corporate entrepreneurship, process and product development, marketing, and economics/finance. While many individual studies have used a limited number of performance measures, taken together, key publications in each of the research streams show repetitive use of the five dimensions proposed.[15]

The strategy research stream

Significant strategy studies have linked performance to organizational constructs and dimensions such as business strategies, planning and performance, organizational configurations and the environment. Measures used in these studies fit well into the DMP model: a summary is provided in Table 1.

Corporate performance is one of the enduring themes in strategy research and financial metrics have been used extensively in measuring performance. Stimpert and Duhaime, Zahra and Ketchen, Thomas and Snow used ROA, Gupta and Govindarajan used operating profits, profit/sales ratio, cash flow and ROI. Other financial measures mentioned have been average revenue growth, ROI, ROS, profitability and growth in net income. Similarly, customer/market measures in strategy research have included sales growth and market share.[16]

The inclusion of a separate performance dimension—People Development—reflecting the critical importance of Human Resources (HR) to a firm's success is a major differentiator of the DMP. As previously discussed, a significant body of scholarship suggests that a firm's management of its employees can affect its financial performance as well as provide a valuable source of competitive advantage. Moreover, researchers have found that 'bundles', or systems of HR practices had more influence on performance than individual practices. Specific measures identified by Pfeffer include

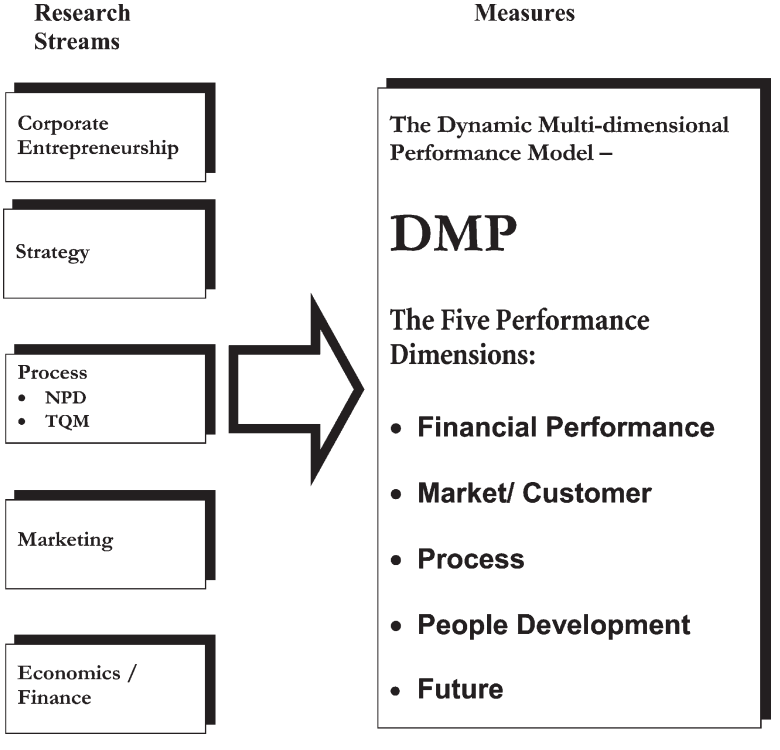

Figure 1. DMP research template

Table 1. Strategy literature stream

Source	Financial Measures	Customer Measures	People Development	Process Measures	Future Measures
Stimpert and Duhaime (1997)	ROA				R&D expenditure; capital inv.
Zahra (1996)	ROA			Process portfolio breadth (new prod. Tech); innov in proc; uses R&D to dev new proc.)	Pioneering radical tech.; internal R&D; use of ext. tech.
Gupta and Govindarajan (1984)	Operating profits Profit/sales ratio Cash flow; ROI	Market share Sales growth rate			Political/public affairs; R&D activites
Miller and Friesen (1983)	Avg revenue growth Growth of ROE				
Miller (1988)	ROI Growth net inc				
Powell (1994) Powell (1996)	Profitability	Sales growth rate			
Ketchen, Thomas and Snow (1993)	ROE ROA				
McDougall, Covin et al. (1994)	ROS	Sales growth rate			
Kanter (1994)					Global alliances and partnerships
Pfeffer (1994)			Participation, empowerment, skill development		
Huselid (1995)			Job design, perf. appraisal, training hours		
MacDuffie (1995)			Work teams, training, problem solving groups		

job participation, empowerment and skills development, while Huselid has considered job design, performance appraisal and the hours of training as key HR metrics, and measures such as work teams, level of training and the existence of problem solving groups have been identified by MacDuffie.[17]

Process measures were used by Zahra in his study of impact of technology strategy on firm performance. Specific measures were process portfolio breadth, (i.e., the development of new production related technologies) and the use of major innovations in the production systems employed.

Measures that are future-looking include R&D expenditures;[18] the level of pioneering (the com-

mitment, introduction and use of leading technologies) and the level of capital expenditures. Long term satisfaction of stakeholders has been used by Gupta and Govindarajan, and Chakravarthy, while Kanter has discussed the importance of alliances and partnerships beyond the immediate benefits, "the connection offers the parties an option on the future, opening new doors and unforeseen opportunities."[19]

This review of the theoretical and empirical literature has clustered the discussion on the five major dimensions, which formed the basis for our empirical study. Each dimension was then characterized by a long list of specific measures, which were identified in the literature and further confirmed during the first step of the study. The five major dimensions can be described as follows:

1 *Financial Measures:* represent the traditional approach to organizational success. In essence, it would involve measures such as sales, profits, or return on investment.
2 *Customer/Market Measures*: represent the relationship between an organization and its customers. Customer-centric companies are adept at understanding customer needs and wants, building products that meet these needs, and keeping them satisfied, resulting in high retention rates.
3 *Process Measures*: reflect the organizational efficiency and improvement view. Many of the influential business themes in the past decade have focused on process improvement—TQM, learning organizations, and team-based efforts.
4 *People Development Measures:* recognize the critical role of stakeholders in organizational success. The level of employee skills, commitment to technological leadership, personnel development, staff slack resources are indicative of the essential role of employees in organizational success.
5 *Preparing for the Future Measures:* are clearly expressions of foresight. This dimension must be viewed as a critical organizational issue and includes measures such as depth/quality of strategic planning, indicators of partnerships and alliances, anticipating and preparing for changes in the environment, and investments in new markets and technologies.

Research design, analysis and results

This study employed a two-step research: a pilot study of field interviews with a group of selected CEOs and other executives, followed by a mail survey to 1,610 alumni of a major university, who were identified as senior managers within their organizations. (A description of our methodology and our research process can be found in Appendix A.)

As a result of the second step there were 180 completed, usable surveys corresponding to a response rate of 11.8%. This response rate is consistent with other studies of top management teams.[20]

Thirty-six industries were represented in the sample - the most frequently occurring being telecommunications (38 responses), electronic manufacturing (21), financial services (18), construction (10) and engineering services (8). To test that the surveys were representative of the entire mailing list, two chi-square tests were performed. The first test was of responses vs. non-responses by region, and it showed no bias ($\chi^2 = 0.79$, df = 3, N.S.). The second test of responses vs. non-responses by management title indicated that a relatively higher proportion of executives responded than lower tier managers ($\chi^2 = 18.85$, df = 2, $p<0.05$), and was consistent with the objectives of the study.

Summary of results for all variables

Each respondent in the second step was asked to allocate 100 'chips' in proportion to the relative importance they would give to each of the five measures. Appendix B provides the number of respondents (N), the mean number of chips allocated, the standard deviation of the number of chips (SD), and a weighted utility index (WUI) for all the variables. The measures are presented

in descending order for 'N' within each of the five dimensions. For this analysis, the mean number of chips was calculated using a divisor of 180, i.e., respondents who did not select a variable as important were allocated zero chips for that variable.

The WUI provides an adjusted index for each variable based upon the percentage of respondents and the number of chips allocated. The WUI is defined as follows:

$$WUI = (N/180) \times (\text{Mean\#Chips allocated})$$

Initial analysis of measures

The following section provides an analysis and interpretation of the summary of results for the variables and dimensions in Appendix B.

It is important to note that three of the measures added by the CEOs in the initial field study proved to be important measures as seen by most respondents. These measures are 'retention of top employees', 'quantity and depth of standardized processes', and 'anticipating/preparing for unexpected changes in the external environment'. In fact, the 'retention of top employees' had the highest WUI of all variables and was allocated the highest number of chips for all measures. It was also second (only to sales) as the most frequently selected measure in all dimensions, and was selected by 76.7% of all respondents. It was notable however, that these three measures were not mentioned in the literature reviewed for this research on organizational performance, which perhaps indicates a discontinuity between performance measures as seen by academics and practicing managers. These measures were added as a result of the pilot study.

Financial Measures. There were no major surprises in the most common financial measures. Sales, profit margin, revenue growth, cash flow, and net operating income were the most important measures as seen by the respondents and were widely used in academic research.

However, it was somewhat surprising that given the public's current interest in capital markets and stock prices, that the variable 'stock price/market capitalization' was not one of the important measures selected by the respondents. This may be explained by the fact that 58% of the sample were private firms with no stock price.

Market share was not seen as important by most of the sample, but was seen as critical by large firms.

Customer/Market Measures. Customer satisfaction, retention rate, service quality and responsiveness were all seen as important measures in this dimension. Market share was not seen as important by most of the sample, but was seen as critical by large firms. This is consistent with the premise of the research that differing firm types would find different measures useful in their assessment of their performance.

Surprisingly, 'sales backlog' was not seen as an important measure by the respondents, although this measure is frequently used in quarterly earnings reports of public firms.

Process Measures. The most frequently selected process measures included 'time to market for new products and services', 'quality of new product development and project management processes', 'quantity and depth of standardized process', 'quality of manufacturing process', and 'quality initiative processes'.

A number of learning measures (within product teams, between business units, between product teams) were seen as important, but not highly selected. Perhaps this could be explained by providing the respondents with too many similar sounding measures, thereby diluting the selection process for the learning measures.

Kaplan and Norton's 'Balanced Scorecard' provides a 'learning and growth perspective,' which includes elements of employee capabilities, information system capabilities and motivation,

empowerment, and alignment. However, Kaplan and Norton's internal business process perspective also includes the innovation process. It is unclear where one would apply these critical learning elements in their framework.

People Development Measures. Significant measures selected included 'retention of top employees', 'quality of professional/technical development', 'quality of leadership development', 'encourage employees to suggest and test new ideas' and 'employee skills training'.

It was somewhat surprising that 'employee satisfaction survey', while selected by 40.6% of the respondents, was only sixth among most frequently selected measures. However, this measure was selected more frequently by larger firms, as well as firms with longer product cycles.

Preparing for the Future Measures. Key measures include 'depth and quality of strategic planning', 'anticipating and preparing for unexpected changes in the external environment', 'extent of joint ventures and strategic alliances,' and 'investment in new market development.'

Hamel and Prahalad provide a new view of strategy, "Competition for the future is competition to create and dominate emerging opportunities—to stake out new competitive space". Companies must compete to shape the structure of future industries.[21]

The DMP provides two measures, which deal with strategy—'depth and quality of strategic planning' (selected by 58.3% of the respondents) and 'quality and extent of strategic focus/intent' (selected by 35.6% of respondents). While Hamel and Prahalad might take issue with the relatively lower selection of the latter measure, it is somewhat unclear if the lower selection is due to having two similar measures from which to choose.

...one set of measures cannot fit all organizations.

Definition and overview of potential baseline success measures

The basic hypothesis of this research is that one set of measures cannot fit all organizations. Rather, different types of organizations should employ different measures of success. However, while significant differences emerged between the measures used by varying firm types, we found that a number of fundamental measures within each dimension were selected as important by the majority of respondents ($N>50\%$). Furthermore, these 'common' measures were the most important as seen by all demographic groups in this study, indicating their usefulness to a wide range of organizational typologies. The concept of "baseline" or "core" measures was used by Griffin and Page in their 1993 study of product development success and failure measures,[22] and was adapted here as a group of *potential baseline measures* (presented in bold in Appendix B).

Thus, while there is no universal prescription for performance metrics, these potential baseline measures can be viewed as a starting point to be considered by organizations prior to an in-depth selection of their main set of metrics. Specific industries may have their own key metrics—for example, ROI may be a critical measure for investment firms, while market position can be critical to firms in competitive markets. Individual firms would look, among other things, at their industry, technology and strategy, and would perform a sensitivity analysis as to the applicability of these measures to their own unique requirements.

A summary of success measures for differing firm types

Table 2 provides a summary of the most important measures selected by varying firm types. Starting with the potential baseline measures, a number of suggested measures are then added for the firm types depicted.

For each of the classification variables (e.g., small vs. large, high-tech vs. low-tech) a *t*-test ($p<0.05$) was performed between the number of 'chips' allocated for each measure. A number of statistically significant differences emerged. For example, a high-technology organization might consider the addition of 'customer benefits for their products/services', 'cycle time' and 'employee skills training' measures for their performance metrics, while a firm with a relatively lengthy pro-

Table 2. A summary of suggested success measures for differing firm types

	Financial	Market/ Customer	Process	People Development	Preparing for the Future
Baseline	Sales	Customer Satisfaction index	Time to market with new products/svcs	Retention of top employees	Depth and quality of strategic planning
	Profit margin	Customer Retention rate	Quality of NPD & PM processes	Quality of leadership development	Anticipating/preparing for unexpected changes in external environment
	Revenue growth	Service quality			
High Technology Firms (n = 95)		+ customer benefits from products/services	+ cycle time	+ quality of prof. devel. + employee skills training	+ investment in R&D (% of sales)
Low Technology Firms (n = 85)		+ responsiveness		+ encourage employees to suggest/ test new ideas	
Small Firms (n = 108)	+ cash flow			+ encourage employees to suggest/ test new ideas	+ investment in new mkt. development
Large Firms (n = 71)	+ EPS + stock price	+ market share		+ employee skills training + quality of corporate culture development	+ investment in R&D (% of sales)
Firms Product Life Cycle < 3 years (n = 66)			+ cycle time		
Firms Product Life Cycle > 3 years (n = 112)		+ responsiveness	+ quantity & depth of standardized processes	+ employee skills training	+ investment in new technology

duct life cycle might look at the addition of 'quantity and depth of standardized processes' and 'employee skills training' to their measures.

While these specific sets of measures may also not be universally applicable to all companies, the framework captures the different measures that many companies deem important to assess organizational success. These measures can thus also be used as an appropriate starting point for effective short and long-term performance measures, and each company could use the components of the framework in differing ways and with different degrees of importance. The final set of measures would of course depend on the firm's strategy, technology, and the particular industry and environment in which a firm competes.

Discussion

The DMP model has a number of major characteristics that, when taken together, distinguish it from previous frameworks for assessing organizational success. It also addresses some of the limitations of previous models as indicated in the literature.

First, it is multi-dimensional in nature addressing the concerns of many scholars. In contrast to the classical, single dimensional financial measures, it offers a richer, more in-depth view of what organizational success means. For example, by adding the Customer dimension, organizational attention is focused on what prominent academicians and practitioners have long preached: "There is only one valid definition of business purpose: to create a customer".[23] Similarly, the Process dimension is focused on internal dynamic management; namely, how is the organization conducting its operations, how efficient are the internal processes in producing the firm's products or services, and how is the organization learning. The inclusion of the People Development dimension explicitly recognizes the critical role of firms' employees to its success and addresses the limitations of The Balanced Scorecard by providing a clear series of measures for human capital. And finally, the Future dimension is focused on preparing for change, defining and managing the future, and sustaining organizational vitality for years to come. It also addresses the needs of employees for a sustaining workplace, and the needs of long-term investors and owners.

The DMP model reflect(s) the organization's sustainable performance in multiple time horizons.

Second, the DMP model may be viewed along an ascending continuum of time, reflecting the organization's sustainable performance in multiple time horizons. The financial dimension represents the very short, immediate term, which is probably measured in quarters or at most one year. The marketing dimension represents the short term, perhaps a year or slightly longer. And measures that relate to the long and very long time horizons (3–10 years) can be identified in the process, people development, and future dimensions.

Third, with the inclusion of a People Development dimension, the DMP model explicitly acknowledges the critical roles of multiple stakeholders, which were missing in previous frameworks, and were of concern to many scholars (e.g., Atkinson et al., and Smith). The addition of and specific attention to a stakeholders' dimension recognizes the organization's needs from a managerial standpoint and capital markets perspective, and specifically addresses a noted limitation of The Balanced Scorecard. From a managerial perspective, the People Development dimension is critical for internal decision-making in areas such as performance measurement and compensation purposes. The Conference Board tracks companies that base a portion of executive compensation on non-financial measures, and Brancato reports that top executives are often evaluated on individual and business unit performance, stakeholder interests (public affairs, civic involvement, and environmental issues), quality, customer satisfaction, and new product development.

Fourth, to some extent, the proposed DMP framework is wide enough so that different organizations in different industries can select their specific measures within each dimension. Firms such as Amazon.com and Ford Motor Company would clearly use different measures in each dimension and would view the dimensions with varying degrees of importance. While Ford might focus strongly on Finance and Process, Amazon would perhaps be more attentive to the Future dimension. The concept of differing measures for various organizations has also been widely studied in the management accounting literature. Otley stated that "…there is no universally appropriate accounting system which applies equally to all organizations in all circumstances."[24] The appropriate set of measures will depend on the particular industry and environment that a firm competes. Specific industries may require specific metrics tailored to specific businesses such as Sveiby's model for knowledge industries.[25]

"the five major success dimensions — financial, market, process, people, and future — can serve as an integrated framework for looking at an organization's performance."

Implications for managers

This study may contribute to the practice of prescribing organizational performance measures in several ways. Clearly, the ability to effectively measure firm performance is critical to the firm's survivability and ensuring that a firm is also managed efficiently.[26] It should be noted that, while universal prescriptions do not apply, the DMP provides guidance to management as to a starting point in the process of developing useful success metrics for different situations and environments.

First, the presentation of five major success dimensions—financial, market, process, people, and future—can serve as an integrated framework for looking at an organization's performance. Clearly, each firm may have different priorities and needs—however, almost any organization should be able to map its success measures into these major dimensions. While their relative importance may change, and their exact content of specific measures may be different from firm to firm, this framework provides a solid foundation for building an organization's success measurement criteria.

Second, the presentation of a potential baseline set of performance measures provides a reasonable starting point for building an organization's specific organizational performance measures. This practical set of useable metrics should be reviewed for applicability by individual firms.

Third, the study also provides a series of additional measures (bottom of Table 2) that may prove useful for varying firm types. When doing so, it is critical to note that managers should also review Appendix B to see which additional measures may be appropriate to their firm and industry. Since every measure in this study was considered as important by at least one respondent, the collection of specific measures can provide a useful checklist for managers while building their organizational metrics.

To illustrate the use of this process, one of the responses was selected. The firm selected for this example had the following characteristics:

Illustrated Example: Company Profile

Industry:	Telecommunications
Primary product:	Telecom hardware and software
Employees:	$>$ 40,000 (large firm)
Product life cycle:	$>$ 3 years
Technology:	High tech

The respondent selected measures from all three categories: baseline, firm type specific and measures unique to his firm. The specific measures selected by the respondent as a result of this process are depicted in Table 3.

". . . companies practice financial engineering . . . at the expense of investing for the future."

Finally, it should be noted that the implementation of a multi-dimensional framework would require attention to the challenge of managing up to 15–30 performance measures. It could be argued that a singular concept—'value creation' be employed as an overarching performance measure. While this concept is simple and easy to accept, the real question is how does one know if

Table 3. An illustration of the proposed methodolgy in selecting success measures

	Baseline Measures (top of Table 2)	Firm Type Measures (bottom of Table 2)	Firm Specific Measures (Appendix B)
Financial	Sales Revenue growth	Stock price (large)	ROE Revenue/employee
Market/Customer	Customer retention Service quality	Market share (large) Responsiveness (>3 years)	On-time delivery
Process	Time-to-market Quality of NPD	Quantity & depth of standardized process (> 3 years)	Quality of cross-learning between business units Quality initiatives
People Development	Retention of top employees Quality of leadership development		Employee satisfaction survey Encourage employees to suggest new ideas Concern for quality of employee/family life
Future	Anticipating unexpected changes in external environment.	Investment in new technology development (>3 years)	Understanding/forecasting Megatrends Investment in new market development Extent of JVs and alliances

a firm is creating value today and will continue to do so in the future? Can value be assessed by today's stock price? Does missing this quarter's earnings target by a few cents really warrant reducing a firm's value by 40% as often happens? Moreover, defining value leads to the same issues described by Steers in the definition of goals—value depends on who provides the definition.[27] Therefore, while the implementation of a comprehensive performance measurement system is not simple, the DMP framework provides a barometer for multiple time horizons and a richer view of organizational success.

Conclusion

The need for a comprehensive view of performance management has been widely discussed in the popular and scholastic press. The capital markets emphasize quarterly earnings reporting and significantly punish those companies not meeting earnings expectations. As a result companies often practice financial engineering, and much of this comes at the expense of investing for the future. Consequently, it is crucial that success measures provide organizations with tools to build their future. That entails measures that are indicative of investing in and building long-term resources, facilities, and infrastructure, as needed to adapt to the fast pace of today's changing environments. The authors believe it is also critical that any prescriptions for performance measurements should be simple, dynamic, and flexible over time, foster improvement, and be linked to the organization's strategy, goals and objectives.

In conclusion, perhaps the need for a new dynamic framework can be best described by two

"...competition for the future will be to create and dominate emerging opportunities."

examples from the recent corporate literature. Hamel and Prahalad have defined a new view of corporate strategy, and their premise is that competition for the future will be to create and dominate emerging opportunities—to stake out new competitive space. Companies that are too focused on today's issues and not preparing for the future will simply not be competitive, and leadership in fundamentally new industries is seldom built in less than 10 or 15 years. And Collins and Porras emphasize that one of the fundamental attributes of organizations that have endured for years are the "envisioned future". They specifically define this term as setting a "big hairy audacious goal" that truly stretches an organization's resolve and resources but has the potential to shape the future.[28] But this may take the firm from ten to thirty years to achieve – clearly a long period of corporate life.

The DMP model is a response to these statements. It represents a step in the direction of refining the search for organizational performance measures. It provides a framework for assessing organizational success on a multitude of measures and timeframes, and is designed to help companies to constantly examine themselves and improve the chances for sustainable and on-going success.

Appendix A

Notes on methodology

This study used two complementary methods: a pilot study and a mail survey to provide realism and generalizability respectively. The pilot study included a meeting and discussion with senior executives from six companies followed by ten in-depth interviews with members of top management from varying companies, lasting typically for an hour and a half. The interviews began with two open-ended questions: The first described a case story regarding the example of how Digital Equipment Corporation moved in a relatively short period from industry dominance to serious crisis. The question was, "Can it happen to you? And if so, what can you do about it?" The second question was a 'critical incident' question regarding the respondents' corporate experiences and their use of performance measures.

These interviews provided an effective pre-test for a draft of the instrument that was used to collect empirical data in the mail survey. This process also clarified the specific wording of some measures as well as adding some additional measures not found in the literature. It is interesting to note that three of the measures added by the CEOs in the pilot study were also seen as important measures by the mail survey respondents. These measures are 'the retention of top employees', 'the quantity and depth of standardized processes', and 'anticipating/preparing for unexpected changes in the external environment'.

The mail survey consisted of a detailed questionnaire mailed to 1,610 alumni of a major university who were identified as senior managers in their organizations. Several demographic items were collected including industry, typical product life cycle, company revenue, number of employees, markets served and whether the firm was a high-tech organization. The survey listed key measures within each of the five dimensions and asked respondents to select the five most important measures within each dimension. The technique (constant–sum scale) for weighing the 'five most important measures' was similar to the instrument used by Griffin and Page in their study of product development success measures.[29] This technique (also called the simultaneous comparison and the 100 point allocation system) asked respondents to allocate 100 'chips' in proportion to the relative importance given to each of the five measures, and its wide use in previous studies of performance measures provides a significant level of confidence.[30]

Respondents were also asked to self-rate their firm's performance on the selected 'five most important measures' using an approach modeled after the questionnaire used by Dvir and Shenhar to collect success measures at the Strategic Business Unit (SBU) level. The use of this previously tested method ensures that key variables have some level of prior construct validity.[31]

Appendix B

Results for all respondents and variables

	N	# Chips	SD	WUI
FINANCIAL				
Sales*	**141**	**18.44**	**13.64**	**14.44**
Profit margin*	**126**	**14.98**	**12.89**	**10.49**
Revenue growth*	**124**	**14.06**	**12.10**	**9.69**
Cash flow	123	13.14	11.62	8.98
Net operating income	104	12.43	13.23	7.18
Return on Investment (ROI)	55	5.42	9.08	1.66
Revenue per employee	54	4.42	8.54	1.33
Profit per employee	31	3.01	7.94	0.52
Stock price / market capitalization	31	2.86	7.29	0.49
Economic Value added (EVA)	25	2.74	8.01	0.38
Earnings per share (EPS)	21	2.03	6.22	0.24
Return on Common Equity (ROE)	18	1.89	6.71	0.19
5 year growth in common equity	13	1.17	4.70	0.08
CUSTOMER / MARKET				
Customer Satisfaction Index*	**134**	**17.21**	**13.37**	**12.81**
Customer retention rate*	**110**	**11.73**	**11.56**	**7.17**
Service quality*	**100**	**11.54**	**11.38**	**6.41**
Responsiveness (customer defined)	98	10.40	10.79	5.66
Customer benefits from product/service	78	8.94	12.58	3.87
Market Share or Position	77	9.84	14.07	4.21
On-time delivery (customer defined)	70	8.06	11.81	3.13
Customer acquisition rate	60	5.77	9.24	1.92
Growth in Market Share	58	6.63	10.77	2.14
Corporate image	47	4.09	7.49	1.07
Sales backlog	36	3.67	8.65	0.73
PROCESS				
Time to market for new products and services*	**117**	**17.24**	**15.78**	**11.21**
Quality of new product development and project management processes*	**117**	**14.10**	**12.40**	**9.17**
Quantity and depth of standardized processes	85	11.25	16.42	5.31
Quality of manufacturing processes	72	8.82	12.60	3.53
Quality initiative processes (TQM)	68	6.78	10.64	2.56
Cycle time	65	8.47	14.12	3.06
Quality and speed of translating new product development to manufacturing	54	5.49	9.40	1.65
Quality of cross-learning within product teams	52	4.84	8.42	1.40
Quality of cross-learning between business units	50	4.77	8.81	1.33
Quality of cross-learning bet. product teams	44	3.89	8.15	0.95
Quality of Re-engineering processes	40	3.44	7.33	0.76
PEOPLE DEVELOPMENT				
Retention of top employees*	**138**	**21.86**	**16.23**	**16.76**
Quality of professional/ technical development*	**119**	**13.51**	**11.88**	**8.93**
Quality of leadership development*	**113**	**12.78**	**11.54**	**8.02**
Encourage employees to suggest/test new ideas	99	9.91	10.92	5.45
Employee skills training (days per year)	96	9.62	10.56	5.13
Employee satisfaction survey	73	8.21	12.42	3.33
Quality of corporate culture development	61	6.06	10.03	2.05

Quality of HR benefit plans (e.g., pension, medical)	61	6.08	9.31	2.06
Concern for quality of employee and family life (e.g., day care, company health club)	55	5.33	8.88	1.63
Articulated and supportive HR policy	22	1.69	4.91	0.21
Quality of HR administrative processes	22	1.89	5.47	0.23
FUTURE				
Depth and quality of strategic planning*	**105**	**11.56**	**11.16**	**6.74**
Anticipating/preparing for unexpected changes in the external environment*	**98**	**11.33**	**11.91**	**6.17**
Extent of joint ventures and strategic alliances to gain competitiveness in new technologies	93	10.02	11.15	5.18
Investment in new market development	91	9.31	10.70	4.71
Investment in new technology development	73	8.20	10.91	3.33
% sales from new products (<5 years old)	71	9.39	13.40	3.70
Understanding/forecasting Megatrends	66	7.38	11.59	2.71
Quality and extent of strategic focus / intent	64	7.19	10.62	2.56
Investment in R&D (% of sales)	64	8.21	12.85	2.92
% sales from new business lines (<5 years old)	56	6.30	11.10	1.96
High levels of technology forecasting	36	3.67	8.13	0.73
% of our products that have potential to change basis of competition	30	3.61	8.49	0.60
Investments in high risk projects	3	0.31	2.60	0.01

* Denotes Baseline Success Measure

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