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HR Metrics and Strategy

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HR Metrics and Strategy

Abstract

[Excerpt] The idea that an organization's people represent a key strategic resource is widely accepted. The business press is filled with examples of top executives proclaiming how important it is to engage people's minds and spirits in the quest for competitive advantage (Boudreau & Ramstad, 1997; Boudreau, 1996). There is also mounting scientific evidence that certain "bundles" of "high-performance" work practices (e.g., performance-contingent pay, team-based work structures, selective recruitment and hiring, extensive training, etc.) are associated with higher organizational financial performance (Becker & Huselid, forthcoming; Ichniowski, Arthur, MacDuffie, Welbourne & Andrews).

Keywords

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WORKING PAPER SERIES

HR Metrics and Strategy

John W. Boudreau

Working Paper 97 - 21



HR Metrics and Strategy

DRAFT submission for the CAHRS-ILR Conference on SHRM Research

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The idea that an organization's people represent a key strategic resource is widely accepted. The business press is filled with examples of top executives proclaiming how important it is to engage people's minds and spirits in the quest for competitive advantage (Boudreau & Ramstad, 1997; Boudreau, 1996). There is also mounting scientific evidence that certain "bundles" of "high-performance" work practices (e.g., performance-contingent pay, team-based work structures, selective recruitment and hiring, extensive training, etc.) are associated with higher organizational financial performance (Becker & Huselid, forthcoming; Ichniowski, Arthur, MacDuffie, Welbourne & Andrews).

Virtually every currently-popular business model emphasizes the key role of people in organizational success. Tracey & Weirsemma (1997) suggest that organizations excel by becoming excellent at one or two of three basic strategies: Operational Excellence, Product Leadership, or Customer Intimacy. They note that each approach implies different organizational and human design factors:

"the product leader thrives on ad hoc and fluid structure to foster invention and allow resources to be redeployed quickly. Operationally excellent companies, on the other hand, do best with the major brain-trust at central locations where standard operating procedures get refined and decisions are made about acquiring and using capital-intensive assets. A natural organizational structure for the customer-intimate company is to move more of the decision-making responsibility out to the boundaries of the organization, closer to the customer" (p. 44)

In their book, each market discipline includes elements of "culture" "organization," and "management systems" that embody human attributes such as "discipline" and "desire to win."

Kaplan & Norton (1996) have honed their "balanced scorecard" concept of measurement, incorporating Financial, Customer, Internal Business Processes, and Learning/Growth to note that employee learning and growth must be clearly linked and measured consistently with the organization's key strategic approach to success. They propose that a measurement system should embody a "theory of the firm," with measures serving as ongoing tests of that theory, and indicators to show when the theory or the

outcomes need to change. Similarly, Reichheld (1996) notes that the "Loyalty Effect" rests on creating loyal employees who engender loyalty among customers, customer retention and more rapid growth than competitors, which in turn leads to loyal shareholders, willing to provide capital for the long run.

Clearly, human resources are widely recognized as fundamental to organizational strategy, and human resource strategy is seen as a key and leading determinant of organizational success, similar to capital, land, marketing, finance and operational investments. Yet, it remains rare to find organizations whose human resource investments are clearly linked and measured in accordance with strategic goals. For the most part, the management of people retains a focus on administrative efficiency, traditional and disconnected functional initiatives, and measurements that focus on activities rather than strategic outcomes. Recent evidence (Wright, et al., forthcoming) suggests that line managers view human resource functions as being good at less important things, and not so good at the things they view as important to firm success.

This chapter examines some reasons for this apparent gap and the implications of the state of measures of human resource effects, or "HR metrics," for research and practice in strategic human resource management.

Why HR Metrics Matter

Pfeffer (1996) proposed that organizations "occasionally do dumb things," specifically failing to adopt people management practices that evidence seems to suggest help to achieve strategic objectives. Pfeffer suggested several "barriers" that prevent organizations from capitalizing on such findings, by implementing these beneficial practices, including:

- *Strategy*: Organizational leaders focus on identifying the appropriate strategy, while ignoring its execution by the organization's employees.
- *Finance*: Organizational leaders generally have experience in finance, engineering or marketing, which creates a tendency to focus on financial reporting as a measure of success. Investments in people are generally treated as expenses, not investments, and the payoff from such investments is often seen as more uncertain or risky than that from more "traditional" investments, or simply cutting costs by cutting people.
- *Social*: The focus on business leaders as responsible for firm success, ignoring the impact of thousands of day-to-day decisions by employees, and from the mistaken image that top managers must be "tough" as indicated by willingness to implement cost-saving strategies that may be hard on some employees.

- *Politics*: Leaders whose careers were built on investing in capital, automation or other traditional factors find it difficult to admit that investments in people are actually effective. Investing in people often means new ways of thinking, which may imply that old ways were incorrect or ineffective.
- *Hierarchy*: Advocates of investments in people often reside in the functions of human resources or operations, both relatively less influential in traditional organizations. Moreover, investments in people frequently mean acknowledging the importance of front-line teams and individuals, which is often threatening to traditional managers. These managers form a concentrated group with significant potential losses, while those benefiting from such investments (employees, shareholders, top managers) form a more diffuse group, for whom the benefits may be far less certain.

How does one overcome such barriers? Pfeffer suggests several strategies. Each one depends critically on metrics for its success:

- *Find Counter-Examples*: Visit other companies, or even other units within the company, that have done things differently and benefited from it.

The key here is identifying successes, but how is success to be determined? HR metrics, as we shall define them, serve as the mechanism for identifying the links that demonstrate when "different" is actually "good."

- *Use Data*: It is important to present evidence to demonstrate how investments in people pay off. However, those data must have unusual characteristics, compared to the traditional data used by organizations. As Pfeffer suggests,

"The point here is that the typical financial information system presents data only on outcomes, and typically only financial outcomes at that. It doesn't detail the processes that produce those financial results, or other measures such as customer retention, performance compared to competitors, or employee retention, capability, and satisfaction."

Data is a key to enhancing decisions, and must incorporate "soft" characteristics beyond simply financial returns. As we shall suggest, it is also not sufficient merely to provide a list of alternative measures, when in fact what is required is a metrics system grounded in a theory of the firm.

- *Align Rewards with Important Outcomes*: Traditional reward systems may fail to provide rewards for such things as teamwork, innovation, self-development, and risk-taking.

Why might traditional reward systems fail to reflect these factors? We will argue that one reason is the lack of HR metrics that clearly demonstrate and communicate the links between investments that produce these things, and their effect on organizational performance. Without such metrics, aligning employee behavior with results is difficult, so the justice and equity of reward systems is less apparent.

- *Understand Competitive Dynamics:* Organizations seldom achieve extraordinary results by following standard procedures. Competitive advantage stems from resources or strategies that are unique and difficult for others to imitate, yet add value.

The "resource-based view" of the firm has gained increasing popularity as a way to articulate the strategic value of human factors in organizations. Uniqueness is not synonymous with value, however, as Coff (1997) has noted.

- *Manage Career Paths:* Because experiences create a person's point of view, it is important to nurture career experiences that demonstrate the link between human resources and organizational performance. "Line" managers should spend time working on human resource issues and observing the effects. "Human Resource" managers should have line-management experience to create credibility and an understanding of how people link to business success.

It is common to suggest that managers both within and outside of the HR function will benefit from experience in their respective areas, but it is not clear what mechanisms might lead to the "understanding and credibility" expected. It seems likely that such experience must result in a shared mind-set regarding the links between human factors and organizational outcomes, and a shared acceptance of metrics that articulate that link.

- *Look for Long-Term Owners:* Find ways to create a focus on the long-term success of the organization, rather than a fixation with quarterly returns or financial payoff.

Another common recommendation is to focus on the long run. The logic of such a focus seems compelling, so one must ask what factors force decision makers to focus on the short run? Undoubtedly, many factors explain such a focus, but one may be the absence of measurement systems that provide a framework for predicting and understanding long-run outcomes, and metrics that allow short-run results to be seen in an appropriate long-term context.

The fact is that we don't know as much as we should about precisely what processes lead from human resource practices to financial and organizational strategic outcomes. Each of Pfeffer's suggestions requires information about these linkages, and HR metrics that have a far different focus than traditional measures of administrative efficiency, turnover, headcount, or attitudes. HR metrics must systematically link to the strategic objectives of the organization, and serve as a template on which to test and validate a "theory of the firm" that comprises the link between people and firm performance (Boudreau & Ramstad, 1997; Becker & Huselid, in press).

How HR Metrics Add Value

Boudreau (1996) noted that HR metrics create value (or harm) according to their effects on key constituencies. "Persuasion" involves influencing receivers of HR information in ways that benefit the senders of that information. Thus, the measure of value would be how favorably information receivers (e.g., employees, managers, shareholders, regulatory agents) react to the information. HR metrics "work" if receivers provide funds, authority, influence, or regulatory approval. "Fashion-setting" involves convincing others that practices are innovative and based on the latest thinking. Metrics have value in this framework if they signal that HR practices emulate fashion setters or are frequently emulated by others. The key is to appear "progressive." These frameworks are subsets of a model that suggests HR metrics (and all information) serves to improve decisions. Persuasion defines the improvement as whether receivers react favorably, with regard to the senders. Fashion-setting defines improvement as whether opinion-leaders view HR as innovative and progressive. Persuasion and fashion-setting may not always lead to more correct decisions, however, so we will focus on the more general idea that HR metrics create value to the degree that they improve more decisions, that the decision improvements have significant value, and that the information needed for the metrics does not offset the value of the improved decisions (Boudreau, 1991).

Given this definition of value, the design and use of HR metrics must begin with the constituents to be affected. Constituents for HR metrics include line managers, shareholders, suppliers, customers, employees, government regulators and communities. Thus, whether intentional or unintentional, the choice of HR metrics sends signals that will affect the decisions of these constituents. To be "strategic," metrics must be perceived and experienced to enhance decisions or other valued outcomes for key strategic constituents. Strategic HRM must encompass not only plans and tactics, but the design of metrics systems that will allow corrections to strategies, and allow the strategic impact to be recognized.

Proposition #1: Constituents will evaluate HR metrics as more useful the greater their perception that such metrics could improve important decisions.

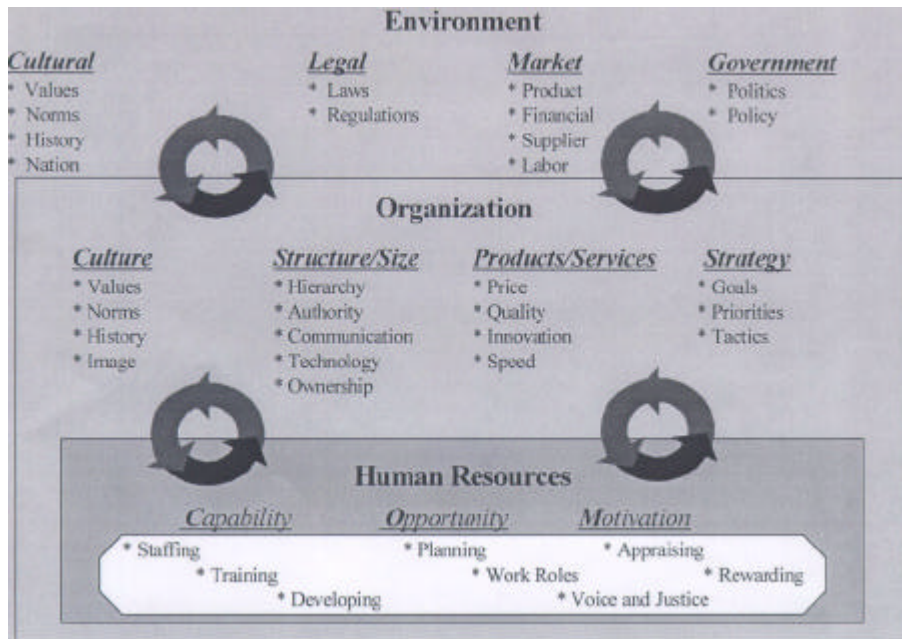
Proposition #2: Constituents will evaluate HR metrics as more useful when they have had experience using metrics to improve decisions, or when metrics are presented within a decision-making framework.

Multi-Level Interactions Tie Metrics to Strategic HRM

Enhancing decisions in the interest of strategic objectives requires metrics that provide information that is useful to those key constituents. A fundamental premise behind SHRM is linkage from one level to another within organizations. Metrics must capture these key linkages to represent strategic HRM.

For example, classroom training is frequently "measured" by the number of courses offered, the number of trainees signed up for each course, or the immediate reaction of trainees upon completing the class. Such metrics signal that more training courses, large class sizes, and positive reactions to the entertainment value of training are key. It should not be surprising, then, that in many organizations the link between training and changes in individual, unit and organizational performance is tenuous at best. Alternatively, GE, Motorola, Federal Express and others are famous for requiring that training be tied to the key initiatives of the organization, and that it be evaluated as such. Training metrics include the effect on such things as product quality, cycle time, cost reduction, and speed of execution. In several shipping companies, the benefits of enhanced training or selection is frequently expressed as "the number of additional trucks/planes that can be loaded for free, without paying for additional labor." Steve Kerr, Vice President of HR at GE says they "teach the initiatives" (Frost, 1997, p. 341). Thus, HR managers first learn about the organization's key initiatives (e.g., new product introduction), and then they are asked how their tools (e.g., training, compensation, staffing, etc.) can contribute to those initiatives. The message to managers, employees, shareholders and others is that these companies are investing in their people to see a result, not to increase HR for its own sake.

Figure 1 depicts a multi-level model for human resources, and a framework for HR metrics.



Human resources are part of a system, with each part of the system interacting with the others. The Environment provides context, opportunities and constraints. The Organization combines many resources to survive, grow, and create value for constituents. The Human Resources represent the employees of the organization, and the results they create through the employment relationship. The circular arrows spanning the levels represent relationships. Relationships may be exchanges, or mutual influence. Each component of the model has relationships with the others. For example, business Organizations must receive materials, capital and labor from the Environment, and in turn they must provide payments, return-on-investment, and rewards. Organizations receive Cultural inputs such as social values, norms, and history, and in turn their behavior affects society's values, norms and history. Within the Organization, the Human Resources are influenced by the Organization's Culture, Structure, Products and Strategy. In turn, the Human Resources support these Organizational components by returning value through such things as performance, attitudes, loyalty and creativity.

Note that Figure 1 resembles the Kirpatrick (1994) model encompassing "reactions, learning, behaviors and results," but Figure 1 emphasizes the importance of using metrics to articulate specific linkages among the levels. It is not enough simply to specify measures at each level, but to link those measures to a strategic model reflecting between-level tradeoffs.

Proposition #3: HR metrics that incorporate multi-level measures will be better predictors of strategic outcomes, be more credible and persuasive to decision makers, and will have a greater effect on strategic decisions than metrics that reflect only one level.

Proposition #4: HR metrics that reflect bidirectional effects between levels will be better predictors of strategic outcomes, be more credible and persuasive to decision makers, and will have a greater effect on strategic decisions than metrics that reflect only single-direction predictions between levels.

Within the Human Resources box are the three components of Human Resource value:

1. Capability, which is the capacity of employees to create value;
2. Opportunity, which is the necessary circumstances for employees to create value for the organization; and
3. Motivation, which is the drive or force employees feel to contribute to organizational value.

These three components (COM) are derived from various literature, including classic work suggesting the notion that individual performance is a multiplicative function of ability and motivation (Vroom, 1964; Maier, 1955; Cummings & Schwab, 1973), as well as critiques of the simple model (Campbell & Pritchard, 1976), and suggestions that the nature of the environment determines the expression of ability and motivation (Gilbreth 1909; Dachler & Mobley, 1964), and more recent work suggesting that situational constraints and opportunity are key to a theory of work performance (Peters & O'Connor, 1980; Blumberg & Pringle, 1982). All three components must be present for human resources to contribute to organizational value. For example, traditionally organized work might minimize the demands on workers, to make them interchangeable, while the emergence of teams, individual accountability, and reliance on front-line employee ideas and suggestions emphasizes different COM. The implication is that HR metrics will be more effective in guiding strategy when they reflect all three components.

Proposition #5: HR metrics that reflect capability, opportunity and motivation will be better predictors of strategic outcomes, be more credible and persuasive to decision makers, and will have a greater effect on strategic decisions than metrics that reflect only one or two elements.

Figure 1 shows several human resource activities underlying the three components of human resource value. Though traditional HRM theory associates certain HR practices with certain elements of COM (e.g., rewards/appraisal with motivation, training/staffing with

capability, job design with opportunity), recent evidence suggests more complex associations between HR processes and value components. Specifically, evidence on human resources and organizational performance (Arthur, 1992; 1994; Huselid, 1995; Ichniowski, et al., in press; MacDuffie, 1995) suggests that bundles of HR processes, referred to earlier as "high performance work systems" are a key determinant of performance. Thus, any one HR process may contribute to any of the three components (e.g., more stringent selection to identify workers with experience working in teams may produce employees not only with team skills, but also those whose needs and values tend to create motivation in team settings). While many of these empirical studies have identified reduced turnover as a mediating factor between HR bundles and firm performance, Figure 1 suggests that turnover serves as a partial proxy for the enhancement of the three COM factors.

Proposition #6: HR metrics that reflect multiple HR activities will be better predictors of strategic outcomes, be more credible and persuasive to decision makers, and will have a greater effect on strategic decisions than metrics that reflect only single HR activities.

Proposition #7: Changes in turnover contribute to enhanced strategic outcomes through their effects on enhancing capability, opportunity and motivation.

Figure 1 reflects standard HR planning models (e.g., Milkovich & Boudreau, 1997), that generally feature the concept of linkage among levels. The three COM components are designed to be general enough to encompass the significant variables underlying behavior at work, rather than to provide an exhaustive list of determinants. This model is similar to the Becker and Huselid model (forthcoming, Fig. 1) which suggests that "business and strategic initiatives" should guide the "design of HR systems," which affect "employee skills, motivation and work designs;" affecting "productivity, creativity and discretionary effort," which affects "improved operating performance," which leads to "profits and growth," which affect "market value." This model is also consistent with the premise of the "loyalty effect" (Reichheld, 1996) which suggests that loyalty among employees (the Human Resource level in Figure 1) leads to valued behaviors toward customers (the Organization level in Figure 1), which leads to customer loyalty, enhanced market performance, and financial results (the "Environment" level in Figure 1). The notion of intellectual capital (Bontis, 1996) encompasses human capital, customer capital, structural capital. Human capital reflects the concept of capability (e.g., knowledge) in Figure 1; while structural capital reflects the "Opportunity" to use human capital,

and to share it throughout the organization; and customer capital reflects both capability (knowledge about customers) as well as the external impact of employee behaviors (customer loyalty). Finally, the model is consistent with Treacy and Wiersema's (1997) notion that competitive strategy is supported by "Culture, Organization, and Management Systems" (a mix of the Human Resource and Organization levels) which create and support certain "Core Processes," (Organization level of Figure 1) which in turn enhance the organization's capability to enact its competitive discipline and reap market rewards (Environment level of Figure 1).

Where to Begin ... Linkage as the key to Strategic HR Metric Systems

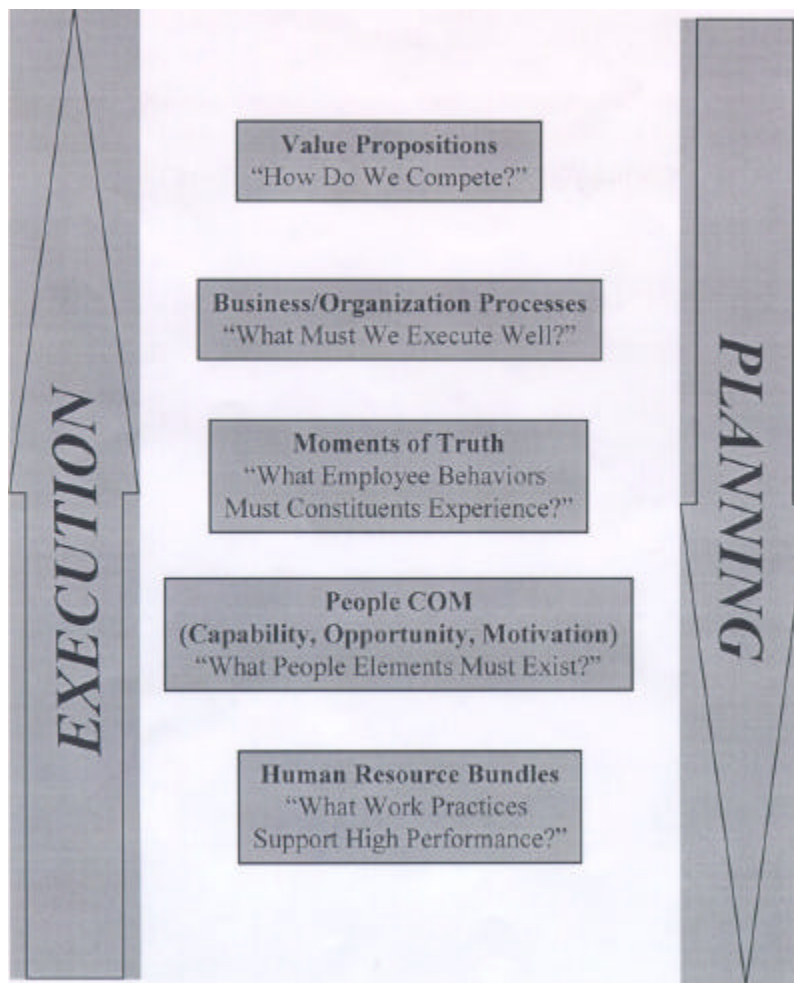
The notion that HR affects and is affected by organization and environmental variables is not new, but HR metrics seldom reflect the organization and environmental levels. More frequently, they focus on the HR activities and their immediate outcomes. One reason is that the number of potential effects is so daunting that it is difficult to know precisely what to measure. However, several recent writers on strategy have suggested frameworks for human resource strategy that may provide some guidance. Let us take the "value-based" theory as an example. The "value-based" theory of the organization suggests that sustainable competitive advantage is created through resources that are valuable, rare, difficult to imitate, and supported by organizational structures that allow them to be exploited effectively (Wright & Barney, 1997). An effective HR metrics system would focus on linkages between the levels shown in Figure 1, that are most likely to have these characteristics. Wright & Barney (1997) and Coff (1997) give several examples showing human resources can contribute to sustainable competitive advantage, by tracing the links between the levels shown in Figure 1.

Coff, in particular, notes how organization structures and human resource processes must be carefully aligned to avoid the hazards associated with creating such value. For example, the complexity of external networks that makes it difficult for competitors to duplicate an organization's knowledge and influence in particular labor markets also increases the chances of causal ambiguity making it difficult to judge the effectiveness of staffing strategies to enhance that knowledge and influence. These guidelines suggest that strategic HR metrics systems might take as their departure point the presumed linkage between human resource processes, that create human resource attributes, which work with organizational structures to create hard-to-imitate value.

Figure 2 presents these concepts graphically. The idea here is that metrics should articulate each of the linkages shown. Human resource activity "bundles" support Capability, Opportunity and Motivation (COM). These elements enable employees to enact critical

behaviors that represent the "Moments of Truth" experienced by key constituents (usually customers, but including suppliers, regulators, communities, and other constituents shown in Figure 1). These moments of truth affect constituent perceptions and reactions, forming the basis for successfully accomplishing the key "Business Processes" of the organization, including "new product introduction," "market intelligence," "productivity/quality," etc. Finally, the successful execution of the business processes leads to success in achieving the value propositions. Examples include "operational excellence," "product leadership," and "customer intimacy" noted earlier.

FIGURE 2



Notice the two arrows in Figure 2. They are meant to convey the synergy between strategic planning, measurement and execution. When planning, the development of metrics proceeds downward, from the value proposition to the bundles. However, when executing the strategy, the causal direction moves upward. Similarly, metrics should be designed based on the strategic vision embodied in the value proposition, and work downward to articulate ever-more specific outcomes, but actual implementation of metrics systems will frequently involve tracing linkages from the bottom up.

Kaplan & Norton (1996) propose that a measurement system should embody a "theory of the firm," with measures serving as ongoing tests of that theory, and indicators to show when the theory or the outcomes need to change. This means that strategic HR metrics should express a theory of the firm through linkages from people to organizational outcomes. HR metrics must articulate HR strategy, just as the "balanced scorecard" articulates organizational strategy. If strategy cannot be so articulated, it is difficult to imagine how key constituents can implement or evaluate its success. HR metrics are not simply an evaluation tool, or a method of justifying HR investments. Rather, they represent the "flight simulator" for understanding how people contribute to organization success, and for designing, implementing and modifying the HR investments that lead to that success.

As Kaplan & Norton (1996) have noted, such simulators necessarily begin as subjective theories, often largely based on assumptions. The power of a metrics system is the ability to allow tests of the key assumptions so that they can be modified, dropped or retained. Over time, the metrics system should become a real-time test bed for HR innovations and their effects. This requires that HR metrics be fundamentally oriented to the decision needs of key constituents, that they incorporate measures throughout the linkages shown in Figure 2, and that they derive from a theory about those relationships that is well-articulated and understood.

Becker and Huselid (in press) noted the need to "peel back the onion," and identify the intermediate relationships that seem to underlie the association between bundles of high-performance work practices and overall organizational success. As we have seen, the HR metrics system is the key to unlocking these processes. Moreover, by taking the perspective of strategic linkages embodied in the balanced scorecard, metrics become a dynamic barometer and test bed for theories of the firm. The perspective of strategic linkage suggests a set of broad general steps in constructing HR metrics. It also suggests that any particular system of metrics will differ, reflecting the particular competitive resources of the unit in question, the key constituents served by the metric, and the level of sophistication in the theory of the firm.

Proposition #8: HR metrics that explicitly articulate linkages shown in Figure 2 will better predictors of strategic outcomes, be more credible and persuasive to decision makers, and will have a greater effect on strategic decisions than metrics that fail to articulate such links.

Next, we focus on methods for creating such metrics.

Step One: The Value Proposition ... How do we Compete?

The basis for HR metrics should be sustainable competitive advantage. This requires examining how the organization creates value, and how that value-creation concept translates into organizational initiatives. Kaplan & Norton (1996) define the value proposition as:

Customers' value propositions represent the attributes that supplying companies provide, through their products and services, to create loyalty and satisfaction in targeted customer segments. The value proposition is the key concept for understanding the drivers of the core measurements of satisfaction, acquisition, retention, and market and account share. For example, customers could value short lead times and on-time delivery. They could value a constant stream of innovative products and services. Or they could value a supplier able to anticipate their needs and capable of developing new products and approaches to satisfy those emerging needs.

Several authors have identified different frameworks for defining value propositions. Treacy & Wiersema (1997) distinguish "Operational Excellence," "Product Leadership," and "Customer Intimacy," suggesting that successful firms will choose to excel in one, and meet competition in the other two. Kaplan & Norton (1996) define value propositions as "Product/Service Attributes," "Customer Relationships," and "Image and Reputation," noting the importance of "Internal Business Processes" as the mechanism for delivering on the value propositions. Thus, the first step in developing HR metrics is to identify and gain agreement on the value proposition for the organization or unit. While it is useful when the key constituents for HR metrics can agree on these propositions, it is frequently the case that even shareholders and line managers have not considered this question. Thus, the HR metrics process can serve as a catalyst for such discussions.

In practical terms, this requires identifying the competitive goals of the organization or the unit. Usually, this is done by examining strategy statements, interviewing key leaders, and then feeding back summary impressions to test for accuracy. Questions such as, "What is the most important thing we must do to succeed?" "Please describe your own performance goals for this business," or "What is it that will make us uniquely excellent in the eyes of our customers or other key constituents?" Frequently, surveys of HR constituents ask business

leaders "How can HR serve you better?" Such a question may require respondents to internally identify the conceptual linkages between HR processes and business success, which is neither their job nor their likely expertise. It seems likely that such questions will elicit a laundry list of administrative improvements, because the linkages between HR and strategy are not yet formed. By focusing instead on the value proposition, the dialogue becomes focused appropriately on those areas in which the business leaders are expert.

The information can then be distilled and enhanced to create a link to human resources through the subsequent steps noted below.

Proposition #9: HR metrics that articulate key organizational value propositions will be better predictors of strategic outcomes, be more credible and persuasive to decision makers, and will have a greater effect on strategic decisions than metrics that fail to reflect these value propositions.

What are the likely indicators of success at value creation? As Kaplan & Norton (1996) have noted, such metrics must link to the financial outcomes of the organization, but they cannot be limited to financial outcomes, which are often lagging indicators of success. Two of Kaplan & Norton's scorecard categories fit this second stage of metric development:

1. *Financials.* Profitability, economic value added, return on assets, etc. are typical measures, but other measures may be appropriate depending on whether the firm is in the stage of Growth, Sustain, or Harvest. Businesses in the Harvest stage may maximize cash flow. Kaplan & Norton note three financial themes to achieve business strategies, including "Revenue Growth and Mix; Cost Reduction/Productivity Improvement and Asset Utilization/Investment."
2. *Customer.* Generic outcomes in this category include customer satisfaction, retention, new customer acquisition, customer profitability and market and account share.

Recent research on the relationship between human resource activity bundles and firm performance also suggest a source of value-creation metrics, because their metrics have been shown to associate with people-management practices. Huselid (1995) used Tobin's q and "gross return on assets."

The practical challenge here is to identify those financial metrics that truly reflect changes in the value-creation success of the organization. This means moving beyond simple balance sheet and income statement ratios, which are often biased by idiosyncratic accounting concepts (such as depreciation), short-run accounting changes or one-time events. The best

metrics will focus on how the organization is using resources to create value that supports its strategies and value propositions. Thus, helpful questions include, "What is our financial focus in this business (e.g., growth, sustainability, harvest)?" or "What financial metrics have proven most valuable as leading indicators of business success?" Activity Based Costing is one example of an attempt to modify standard accounting practices to better focus on value creation. HR metrics should reflect this accounting approach.

Step Two: Business Processes ... Initiatives for Achieving Value

With value-creation metrics established, it is possible to begin "drilling down" into the organization level of analysis (see Figure 1), to identify the business processes (Figure 2) that logically support the value propositions identified in step #1. Here, the idea is to ask what metrics would indicate that the business or business unit is achieving results that will lead to the value propositions. For example, Kaplan & Norton identify describe the "internal business process" aspect of their balanced scorecard approach as:

"In the internal business process perspective, executives identify the critical internal processes in which the organization must excel. The critical internal business processes enable the business unit to: deliver on the value propositions of customers in targeted market segments, and satisfy shareholder expectations of excellent financial returns. The measures should be focused on the internal processes that will have the greatest impact on customer satisfaction and achieving the organization's financial objectives."

Kaplan & Norton note that metrics at this level should go beyond examining the performance of existing business processes, (e.g., terms of time, cost or quality), which they call the "short wave" of success, but should also highlight new business processes, or processes in need of reengineering, and measure the performance of those efforts as well. In this regard, they note that this category of metrics should include innovation, to capture the organization's performance on the "long-wave" of success. The literature on intellectual capital has also noted this fundamental premise, in that the critical intellectual capital processes may not be the "stock" of such capital, but the organization's ability to efficiently promote a productive "flow" of the existing capital, and its translation into value through the value propositions (Bontis, 1997). The "resource-based" theory of strategy (Wright & Barney, 1997), suggests tracking the creation of internal resources that are valuable, rare, hard to imitate and organized to support the value propositions. Treacy & Wiersema (1997) note that each value discipline has a corresponding set of "core processes" (e.g., "product leadership" is supported "invention/commercialization, market exploitation, and disjoint work processes," p. 90).

In practice clues to metrics at this level in the "initiatives" pursued by organizations, such as cost reduction, quality improvement, and reengineering. At Pepsi Cola, IBM, Sears and other companies, the linkage concept is articulated through "learning maps" that show through pictures and games how the broad organizational goals reflect value propositions, and then imply improvement in key business processes. For example, the business objective might be improved market share, which requires the value proposition of "product availability," which means increasing the amount of shelf space, which might be achieved through enhanced by better inventory tracking and better-customized product promotion processes. The learning maps often become the basis for company-wide meetings, with employees at all levels participating in games and contests to enhance their knowledge of the value propositions and, even more important, their understanding of the linkages between business processes and their individual role in supporting them. Moreover, such maps provide vivid articulations of the "theory of the firm," that can be used to develop metrics consistent with those linkages.

Boudreau & Ramstad (1997) noted the value of "constraints" in identifying key business processes. While constraints are frequently seen as negative factors, the frameworks discussed above show that they are in fact opportunities. The highest-valued business processes will alleviate key constraints in achieving the value propositions. For example, while enhancing the product knowledge of sales people may add value, it will be far less valuable in a situation where the constraint is a lack of competitive products, in which case product innovation may be more valuable, and the key role of salespeople may be to listen to customers to identify their most pressing and unmet product needs, rather than to sell them on existing products.

Ramstad (personal communication) proposes the concepts of "leverage, profitability and margin" at this level of metric development. Just as return on equity can be decomposed into "margin" (e.g., profits/sales) times "productivity" (e.g., sales/assets) times "leverage (e.g., assets/equity), one can conceive of similar indices such as knowledge "productivity" (e.g., sales generated per unit of knowledge). The core business processes in this case are the mechanisms for identifying the denominator and numerator of such indices. Sales per unit of knowledge might be an appropriate business process metric for pursuing "product leadership" or "customer intimacy," but production costs per unit of knowledge might be more appropriate for pursuing "operational excellence." In the present context, we would expand this idea to encompass not only knowledge (related to capability in Figure 1), but also motivation and

opportunity. Moreover, we would expand the domain of metrics to include the variety of stakeholders noted at the Organization and Environmental levels.

Step Three: Key Behaviors and "Moments of Truth"

A clear articulation of the value propositions, and the key business processes are the "dependent variable" for the HR metrics theory of the firm. The metrics identified in the first two steps presumably associate and depend on the human factors. In step three, these human factors are identified. Gronroos (1990, 1994) and Carlzon (1987) have called these key events "moments of truth", noting that they represent pivotal contact points between employees and customers, whether in providing a service, selling a product, or providing assistance. These determine constituents' perceptions of service and product quality.

In the classic case of employees meeting customers, the link may be quite clear. When Pepsi route drivers talk with buying managers in supermarkets and convenience stores, or when they "face" the product so that the label is in view of customers, their performance will affect future sales, and repeat buying behavior. When retail store associates meet and assist shoppers, their behaviors, conveyed attitudes, and product knowledge are quite likely to directly affect the probability of making a sale, and the customer's impression. In fact, it is likely that these things affect not only customer perceptions of the store associate, but also perceptions of the product and the company. This premise reflects the idea of an "upside-down" organization (Milkovich & Boudreau, 1997), in which those who directly meet customers are at the top, supported by the other layers of the organization, the CEO at the bottom of the support structure.

However, the concept applies to situations without a direct customer meeting. Employees providing technical assistance through call centers are only slightly removed from direct face-to-face contact, so it is easy to imagine how their behaviors directly affect the value proposition. Moving to the other extreme, is it possible that employees who provide maintenance or cleaning services have "moments of truth" as well? Jay Barney (1997, personal communication) notes that in one organization he approached a janitor and asked what the organization's mission was. Surprisingly, the janitor accurately stated that the mission was to provide customer intimacy through world-class delivery of their key products. The more difficult question came next, "Can you make a difference to this mission in your work?" The custodian proceeded to state that he altered his cleaning routine to emphasize those parts of the manufacturing plant where dirt was most likely to produce product flaws and failures or injuries, often leaving administrative areas for last. Deciding where to clean represented a

moment of truth precisely because the janitor could link behaviors to key business processes that directly support the value proposition. This suggests that metrics could even be constructed to determine how differential cleaning related to objective outcomes such as machine failure. Alternatively, metrics at this level might track the perceptions of employees who benefit from the services of other employees. While it is indeed dangerous to *substitute* the concept of an internal customer for the ultimate customer, an HR metric system can use intermediate perceptions of internal customers to articulate linkages.

Ramstad's (1996) concepts of risk, return and liquidity are useful in making a human connection to this level of metrics. Financial or capital resources as having elements of return (the expected or average level of benefit), risk (the probability of negative outcomes), and liquidity (the ease with which the resource can be deployed across alternative uses). Useful metrics may track the degree to which employees are achieving higher levels of average contribution, lower probabilities of negative contributions (e.g., through sabotage, turnover, or mistakes), and higher flexibility (e.g., through demonstrated motivation and capability to switch among a variety of key tasks). The importance of risk, return and liquidity will be determined by their links to business processes, and ultimately to the value propositions.

Organizational success is built on hundreds or thousands of small steps taken by many employees. Articulating a grand value proposition supported by key business processes, even when associated with good metrics at each level, will often not succeed without specific reliable behaviors from thousands of employees. As Pfeffer (1996) noted,

"... the [traditional management] model often romanticizes the leadership role, placing emphasis on the corporate chief as the source of strategic vision and wisdom. Caught up in that notion, management may not see the organization's success as depending on the actions of thousands of employees throughout the firm."

From a practical perspective, the key at this stage is to avoid being overwhelmed by the sheer variety and number of potential measures of employee behaviors. Returning to the earlier measurement framework, it becomes critical at this stage to subject each potential measure to the "value-added" tests: "(1) What decisions would be improved; (2) What is the value of the improvements; and (3) Does the value justify the cost?" For strategic HR metrics, this means identifying the link from each behavioral measure to the key business processes or initiatives that will be enhanced or unconstrained by it, and subsequently the key value propositions that will be supported. For salespeople in a company where product innovation is the key constraint, measuring selling behaviors and their effects on business outcomes may be

less fruitful than measuring rapid customer intelligence, listening, and communicating new ideas to product designers. The moment of truth guides the measurement.

Step Four: Capability, Opportunity, Motivation

Having identified behaviors and their measures, and established a theoretical and strategic link to value propositions, we move to metrics that reflect direct changes in the human resource, in terms of Capability Opportunity and Motivation (COM). Kaplan & Norton (1996) define "learning and growth" as,

"... coming from three principal sources: people, systems, and organizational procedures. The financial, customer, and internal business process objectives on the Balanced Scorecard will typically reveal large gaps between existing capabilities of people, systems, and procedures and what will be required to achieve targets for breakthrough performance. To close these gaps, businesses will have to invest in re-skilling employees, enhancing information technology and systems, and aligning organizational procedures and routines."

Strategic HR metrics will measure elements linked to the behaviors in Step Three. For example, most organizations conduct periodic attitude surveys, but do not construct them to be strategic HR metrics. Employee satisfaction or happiness at work is not necessarily related to key behaviors, business processes and value propositions. Organizations, such as GE and Sears have moved toward surveys that assess perceptions and attitudes that reflect these linkages, focusing on perceptions that leaders have communicated clearly the vision (value propositions and linkages), that resources are sufficient to accomplish goals, that there is an emphasis on winning, and that individuals clearly understand their personal role in meeting objectives, and the rewards that will emanate from achievement. This kind of measurement seems more likely to show relationships through the value propositions than simple measures of job satisfaction (Johnson, 1996; Ryan, Schmit & Johnson, 1996; Schmit & Alscheid, 1995). Moreover, holding leaders accountable for changes in such a measure makes sense because it reflects the behaviors that they can change. In essence such surveys measure perceived understanding and resources (capability), reward contingencies and personal commitment (motivation) and an environment that fosters achievement (opportunity).

A similar approach can be taken toward other common HR metrics. Capability indices such as competencies, skills, knowledge, certification, and test scores can be strategic metrics, but only when embedded within a theory that links them to value. This will help to identify the capabilities that are strategic, and to focus resources on developing those. Motivation indices such as perceptions that rewards are based on performance, that reward systems are fair, and that effort does lead to recognized accomplishments are important, but they become strategic

when the "performance, fairness and accomplishments" reflect links to key processes and value propositions. The oft-quoted admonishment to avoid "rewarding for A while hoping for B" reflects this idea. Opportunity indices, such as sufficient resources, freedom to act independently, etc. must also be subjected to the same test. Boudreau & Ramstad (1997) give several examples of linking COM measures to key organizational initiatives. Kaplan & Norton (1996) suggest:

"As in the customer perspective, employee-based measures include a mixture of generic outcome measures employee satisfaction, employee retention, employee training, and employee skills-along with specific drivers of these generic measures, such as detailed indexes of specific skills required for the new competitive environment. Information systems capabilities can be measured by real-time availability of accurate customer and internal process information to front-line employees. Organizational procedures can examine alignment of employee incentives with overall organizational success factors, and measured rates of improvement in critical customer-based and internal processes."

This has implications for research in utility analysis (UA), where studies should focus on the perceptions of constituents, rather than simply on the mathematical elegance or completeness of estimates. Most UA research fails even to include systematic observation of those receiving the metrics information. Moreover, when studies do focus on receiver reactions (e.g., Latham & Whyte, 1994), there is little attention to the effects of showing decision makers how to use such information to enhance decisions. It is not sufficient to have an expert explain that the numbers are legitimate. The key is to determine whether decision makers believe they would make better decisions if they used the information.

Proposition #10: HR metrics that explicitly link individual attributes (performance, attitudes, skills) to behaviors, organizational processes and value propositions will be better predictors of strategic outcomes, be more credible and persuasive to decision makers, and will have a greater effect on strategic decisions than metrics that reflect only individual behaviors, even when translated into dollar values.

A promising approach to behavior measurement recognizes the periodic measurement, aggregated to the group level, may not be sufficient. Welbourne (as reported in the Wall Street Journal) has pioneered an "attitude" measure that is administered to every employee every week, providing a "pulse" on the level of vitality and urgency within the organization. While the measure is intriguing, even more intriguing is the potential for strategic linkage. The data is gathered on individuals, who are identifiable within the data base. Anonymity is assured

through an external data gathering process, but the external analyst can link pulse data to individual performance ratings, behaviors, as well as unit results. The combination of weekly and individual-level data allows a depth of analysis that is simply impossible with traditional yearly measures given anonymously. While it is costly to envision weekly and individualized measures of the other components of the COM model, it is also easy to envision how such data could quickly allow more complete tests of a "theory of the firm."]

Proposition #11: HR metrics that link individual behaviors to both individual, group and organizational outcomes will be better predictors of strategic outcomes, be more credible and persuasive to decision makers, and will have a greater effect on strategic decisions than metrics that reflect only group-level outcomes.

Step Five: Human Resource Management Processes ... The Bundles

Traditionally, this is where HR metrics begin and end, with the goal of justifying or evaluating specific investments in particular HR programs. Much utility analysis (Boudreau, 1991) and HR costing (Cascio, 1991; Flamholtz, 1996) research stems from this perspective. Such approaches are deficient if they fail to reflect how the results of HR processes will be used. Boudreau (1991) noted that the utility values will vary depending on whether they are used to cut costs, increase volume or increase margins. Much literature on metrics has presumed that the key requirement was to translate HR outcomes into the "language of business" by placing dollar values on them. As we have seen, strategic HR metrics require much more than simply a dollar-valued scale. In fact, it is likely to be more important to make a credible case for a link between HR programs and value propositions, than to express results in dollars.

The notion of bundles could also be better incorporated into research and practice in HR metrics. Utility analysis research has acknowledged the interplay between different HR processes, noting the consequences of linkages between recruitment, selection, separation, and internal movement for the overall value of the workforce (Boudreau, 1991). As yet, metrics systems have not evolved to capture this interplay. This is a key challenge that can only be met by tracking HR processes through a strategic HR metrics system that begins with value propositions, rather than with the programs themselves. No measure of single-program effects can capture the synergy. Moreover, metrics must be general enough to apply to several programs, so that their combinations can be evaluated by looking at their combined effects.

Indeed, when seen from the standpoint of strategic HR metrics, the entire notion of an "HR program" may need to change. Traditionally, we think of such programs as relatively large-

scale interventions applied to many employees, such as training programs, compensation programs, selection programs or recruitment. However, as noted earlier, the real power of human contribution may be in the thousands of individual decisions and actions that take place every day. In the same way, there is "human resource management" occurring in each interaction between employees, managers and customers. How much of the effectiveness of staffing, for example, rests with the individual judgments that are made *after* candidates have been screened through formal evaluation procedures? How much of the effectiveness of rewards rests with the individual recognition, appraisal and communication that goes on *outside* the formal pay and performance appraisal processes? How much of knowledge and skill acquisition takes place on the job, *independent* of formal training programs? A strategic HR metric system, focused on key behaviors, processes and value propositions can detect such effects, but metrics focused on HR programs may not. The "art" of creating rare and sustainable competitive advantage through people is likely to hinge on these complexities, so our metrics should be prepared to track them.

Summary and Conclusions

This chapter has proposed a framework for building HR metrics systems that reflect emerging evidence and theory about the strategic effect of human resources on firm performance. To develop such frameworks and test the propositions will require continuing research similar to what has been done in the past. Specifically, we will need more research on the linkages between HR "bundles" and broad organizational outcomes. Such research could be enhanced by adopting more detailed and objective measures of the extent and intensity of HR activities. Research at the "micro" end of the spectrum is also valuable, to demonstrate how HR activities produce changes in human characteristics that lead to value. This research might consider simultaneous program effects, and link the human elements (e.g., attitudes, behaviors, perceptions) to the COM elements noted here.

A fruitful area of research would reflect the impact of HR metrics on key decision makers. As Boudreau (1991, 1996) has noted, we know very little about how theories of persuasion and influence are reflected in the reactions to HR measures. It seems likely that metric systems that articulate the frameworks outlined here may have different effects than those focusing on specific programs, or those that reflect only the macro-level effects.

Finally, the models depicted in Figures 1 and 2 clearly suggest the promise of comprehensive studies that track variables reflecting each level and step in the process. While such studies are difficult, the resulting data would be immensely helpful in articulating the

intermediate linkages between the micro and macro studies. There is evidence that organizations have the data bases to carry out such studies, especially organizations with large numbers of customer-contacting employees and established market research and financial data (e.g., large retailers, banks, and telecommunications organizations). Exploiting such data requires creative integration between disparate data bases, but may be far less difficult than attempting to gather such data from the outset.

In sum, advances in both the theory and empirical evidence for strategic HRM provide a framework and a challenge to future HR metrics. The framework vividly shows the limits of traditional metrics and the promise of metrics that better reflect linkages, alignment and multiple levels. The challenge is to build and then test the effectiveness of these new strategic HR metrics.

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