INTEGRATED ENTERPRISE EXCELLENCE

An Enhanced Business Management System

Complimentary Whitepaper by

FORREST W. BREYFOGLE III
President and CEO, Smarter Solutions, Inc.

# SmarterSolutions.com
Integrated Enterprise Excellence

Challenging times provide leadership an opportunity to determine what can be done to enhance its current business management system. This paper elaborates on the following enhancement opportunities:

- The creation of strategies should not be an intuitive exercise but should instead target specific gaps revealed after the business is analytically/innovatively assessed and understood; e.g., step five of the nine-step business management system described in this paper.
- Businesses need to define and target improvement efforts to their value chain, which describes cross-functional business functional flow and metrics, where the organization chart is subordinate to the non-siloed value chain.
- Scorecards need to be tied to value chain functions and reported so that the metrics assess process predictability and provide a prediction statement, when appropriate.
- Organizations need to analyze their value chain as a whole to determine where operational goals should be established so that improvement efforts are made in areas that have linkage to providing the most benefit to the enterprise financials.

A Business Management Governance System

Organizations should be striving to achieve the 3 Rs of business; i.e., everyone doing the Right things, and doing them Right, at the Right time. To move toward achievement of this lofty objective in an ever changing complex, competitive climate, businesses need a framework for orchestration of activities and business improvement efforts. Integrated Enterprise Excellence (IEE) provides such a system, as illustrated in Figure 1.

The business governance system graphically described in this figure provides a roadmap for systematically addressing current management challenges head on. Provided is a business system so that process improvement efforts will positively impact the enterprise as a whole.

Most of the nine steps in this business-system process are self-explanatory; however, it needs to be highlighted that the last-step feedback loop does not return to step one but instead step three. The implication of this type of feedback is that a long-lasting front-end management system is provided, which can remain structurally constant over time even through leadership, organizational, and strategy changes.

All steps of this 9-step system are important; however, in this paper, I will focus on the creation of organizational metrics (step 2) and strategy creation (step 5).

**Figure 1:** The Integrated Enterprise Excellence System
Step Two: Value Chain Creation

In many businesses today, the enterprise is not viewed as a system of non-siloed processes with performance measurements. Instead, organizations often report metrics in their area of the business for how things are going every week, month, or quarter relative to goals. This form of goal-setting reporting can lead to much firefighting and, in extreme cases, a meet-the-numbers-or-else culture that is fatal, e.g., Enron at the turn of the century and many companies in our current economic crisis. These issues can be overcome when organizations view their enterprise procedures and their metrics from a value chain point of view, where the organizational chart is subordinate to the value chain.

Step 2 of the 9-step business management system shown in Figure 1 states: “Describe value chain, including satellite-level (financial) and 30,000-foot-level (operational) metrics.” I will now elaborate on the value chain portion of this step.

An organization’s value chain, as illustrated in Figure 2, describes what the enterprise does (rectangles in the figure) and its performance measures of success (ovals in the figure), from a customer and business point of view; i.e., cost, quality, and time. In this value chain, the rectangular boxes provide clickable access to process steps, functional value streams, and procedural documents. The center series of rectangular-box-specified functions describe the primary business flow, and the rectangular boxes that are not in this series describe other support functions, e.g., legal and finance.

With this approach to describing the enterprise, the organization chart is subordinate to the value chain. The value chain is long-lasting even through organization changes, where process functional procedures and their metrics can change over time.

Metrics within a value chain are to have alignment to how the business is conducted. This is in contrast to creating metrics around the organization chart or strategic plan objectives, where both can significantly change over time. In addition, it is important not only to determine what should be measured but also to have a reporting methodology that leads to healthy behavior so that the organization as a whole benefits.
Creating Good Metrics

Good metrics provide decision-making insight that leads to the most appropriate conclusion and action or non-action. The objective is the creation of an entity that is measurable, auditable, sustainable, and consistent. Organizations can achieve significant benefits and reduce much wasted effort when a process for metric creation and improvement addresses the following:

- Long-lasting metric creation that originates from an assessment of what measurements provide the most appropriate quantification of organizational value chain functional outputs in the area of cost, quality, and time.
- Metrics that maintain basic continuity over time and are fundamentally independent from changes in leadership, strategies, and organizational structure.
- Metrics need to be reported in a format so that they can provide predictive statements when there is a recent region of stability.
- Metrics need to have peer-to-peer comparability. That is, one person does not provide a process-response output using a pie chart while another uses a stacked bar chart, noting that these forms of reporting provide no information about process stability or the ability to make predictive statements.
- The organization chart needs to be subordinate to the functional value-chain-created metrics. When there is an organizational change, metric ownership can change but the basic organizational metric structure and reporting format maintains consistency.
- Metrics from a corporate value chain can be drilled down throughout the organization.
- \[ Y = F(X) \]; i.e., the output of a process is a function of the process’ inputs and its steps. Dr. Lloyd S. Nelson stated, “If you can improve productivity, or sales, or quality, or anything else, by 5 percent next year without a rational plan for improvement, then why were you not doing it last year?” The simple setting of goals for metrics does not make it happen; this could be considered management by hope. Organizations need to have a system to analyze their metrics collectively so that they can establish goals for value-chain metrics that benefit the business as a whole.
- Process improvement goals for value-chain functional metrics are to be established from an analytical-enterprise, whole-business assessment, evaluating, among other things, business constraints. For example, such an assessment could lead to a marketing and sales metric-improvement focus rather than manufacturing-waste reduction, if the organization has excessive capacity and there is a financial goal to grow the business.
- Include a value-chain-predictive metrics assessment when blending analytics with innovation to determine strategies that lead to targeted projects for financial goal achievement. These targeted strategies would then lead to functional value-chain metric improvement goals and improvement/design projects that, when completed, truly impact the financial goals of the whole business. With this system, value-chain-metric improvement goals pull for projects that are most beneficial for the business in its entirety.
### Predictive Metrics

Organizations often report performance using a table of numbers, stack bar chart, or red-yellow-green report-outs, where red indicates that a goal/specification is not being met, and green indicates that current performance is satisfactory. These reporting formats describe what has occurred in the past for some time interval but do not provide predictive statements and can lead to firefighting behaviors. These limitations are overcome with a 30,000-foot-level reporting system.

In 30,000-foot-level reporting, there are no calendar boundaries and a prediction statement can be made, when appropriate. For example, one might report that a current metric performance level is predictable since the process has been stable for the last 17 weeks and there is an estimated non-conformance rate of 2.2%. For predictable processes, we expect that this same level of non-conformance would occur in the future unless something was done to improve either the process inputs or the process-step-by-step execution itself.

With this form of reporting, common-cause variability is separated from special-cause events at a high-level. With this 30,000-foot-level business perspective, typical variability from process input differences is considered common-cause input variability that should not be reacted to as though it were special cause variability, e.g., variation from raw material lot-to-lot, day-of-the-week, people-to-people, and machine-to-machine differences.

Often, current metric reporting and management practices of determining what happened today by sending someone to “fix the problem” can lead to much firefighting. For this type of situation there are, more often than not, minimal improvements made from these firefighting activities, i.e., common-cause variability issues were treated as though they were special cause. Red-yellow-green scorecards, where there is a tracking to goals throughout an organization, can sound attractive but can lead to much firefighting.

To illustrate this point, consider the red-yellow-green scorecard shown at the top of Figure 3, which is from a corporation’s actual scorecard system, and its comparison to a 30,000-foot-level scorecard reporting system.

This metric reporting system has two steps. The first step of this process is to analyze for predictability. The second step is the formulation of a prediction statement, when the process is considered predictable.
To determine predictability, the process is assessed for statistical stability using a 30,000-foot-level individuals control chart, which can detect if the process response has changed over time and/or if it is stable.

When there is a current region of stability, data from this last region can be considered a random sample of the future. For this example, note how the 30,000-foot-level control chart in Figure 3 indicates that nothing fundamental in the process has changed, even though a traditional red-yellow-green scorecard showed the metric frequently transitioned among red, yellow, and green. For the traditional scorecard, the performance level was red 5 out of the 13 recorded times.

Included in this figure is a probability plot that can be used to make a prediction statement. Much can be learned about a process through a probability plot. Let’s next examine some of these probability-plot-benefit characteristics.

The x-axis in this probability plot is the magnitude of a process response over the region of stability, while the y-axis is percent less than. A very important advantage of probability plotting is that data do not need to be normally distributed for a prediction statement to be made. The y-axis scale is dependent upon the distribution type, e.g., normal or log-normal distribution.

If the data on a probability closely follow a straight line, we act as though the data are from the distribution that is represented by the probability plot coordinate system. Estimated population percentages below a specification limit can be made by simply examining the y-axis percentage value, as shown in Figure 3. For this case, we estimate that about 33% of the time, now and in the future, we will be below our 2.2 specified criterion or goal.

There is a certain amount of technical training needed to create 30,000-foot-level metrics; however, the interpretation of the chart is quite simple. In this reporting format, a box should be included below the chart that makes a statement about the process. For this chart we can say that the process is predictable with an approximate non-conformance rate of 32.8%. That is, using the current process, the metric response will be below the goal of 2.2 about 1/3 of the time.

Regarding business-management policy, red-yellow-green versus this form of reporting can lead to very different behaviors. For this example, a red-yellow-green reporting policy would lead to fighting fires about 33% of the time because every time the metric turned red, management would ask the questions, “What just occurred? Why is our performance level now red?” while in actuality the process was performing within its predictable bounds. Red-yellow-green scorecards can result in counter-productive initiatives, 24/7 firefighting, the blame game, and proliferation of fanciful stories about why goals were not met. In addition, these scorecards convey nothing about the future.

With this form of performance metric reporting, we gain the understanding that the variation in this example is from common-cause process variability and that the only way to improve

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I don’t know where we would be right now (because of the economy) if we had not invested time and energy into our efficiencies and learning to look at our business at a much higher level.

— Dawn DeArmond  
CEO, Kansas Big Brothers Big Sisters
performance is through improving the process itself. With this system, someone would be assigned to work on improving the process that is associated with this metric. This assumes that this metric improvement need is where efforts should be made to improve business performance as a whole.

In organizations, the value-chain functions and metrics should maintain basic continuity through acquisitions and leadership change. The value chain with its 30,000-foot-level metric reporting can become the long-lasting front end of a system and baseline assessment from which strategies can be created and improvements made.

With the Integrated Enterprise Excellence approach, strategies are analytically/innovatively determined in step five of the 9-step business-management-system, as shown in Figure 1. The well-defined strategies created with this enhanced management system lead to targeted improvement or design projects that benefit the enterprise as a whole.

**Strategic Planning and Business Improvement**

Consider how, with a traditional approach, organization-wide communicated developed strategic statements can be very difficult to translate into specific employee actions. There was one organization which communicated an “expansion of production capacity” strategy. Should this strategy be applied to all produced products? For most situations, this would not be the case.

In addition, annually-developed-executive-retreat-created strategies can significantly change over time and with leadership changes. It is important to have strategies; however, is it best to have strategy-building as step one from which organizational metrics and operational goals are determined?

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**References**

Forrest W. Breyfogle III (born 1946) is the author of eleven books and over 90 articles on the topic of quality improvement. He is the President and CEO of Smarter Solutions, Inc.; and the winner of the 2005 American Society for Quality Crosby Medal for his book, Implementing Six Sigma, 2nd edition (ISS2). The Crosby Medal is presented to the individual who has authored a distinguished book contributing significantly to the extension of the philosophy and application of the principles, methods, or techniques of quality management.

A professional engineer, Breyfogle is also a member of the board of advisors for the University of Texas Center for Performing Excellence. Smarter Solutions, Inc. provides business measurement and improvement consultation and education for organizations worldwide.

His latest work (2008) is the Integrated Enterprise Excellence (IEE) suite, a set of four books that document an enhanced system for effective enterprise management in the 21st century, based on the integration of best practices from previous tools and techniques and the application of innovative analytical methodology. The introductory book provides an overview of IEE methods, tools and techniques—and how they creatively integrate the best practices of established business measurement and improvement systems.
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