

Thought-leadership in Print

Beyond Lean Six Sigma with Forrest Breyfogle III

*Exclusive excerpt from the forthcoming book **Integrated Enterprise Excellence – Volume 4: A Management and Black Belt Guide for taking Lean Six Sigma and Traditional Scorecards to the Next Level**, by **Forrest Breyfogle III** following introduction by **Andrew K. Reese**.*

The trouble with being a leader is that with every step you take forward, you raise expectations that you will take another step, then another step and still another. For project leaders, that repeating cycle at least has a concrete end point, when all the project's goals are met. When you are a thought-leader, on the other hand, your followers expect you to be continually moving forward, producing new insights into your chosen field on a regular basis and pushing the envelope with innovation after innovation.

For the past two decades, Forrest Breyfogle III has accepted the challenge of being a thought-leader in his chosen field, which revolves around the application of Lean Six Sigma techniques to make good companies great. Breyfogle founded his own company, Smarter Solutions, in 1992 after a 24-year career at IBM, where he applied Six Sigma to testing, development, manufacturing and service organizations.

At the helm of Austin, Texas-based Smarter Solutions, Breyfogle has conducted workshop sessions throughout the world, helping companies improve their bottom line and customer satisfaction through the wise application of techniques that are beyond traditional Six Sigma techniques. Moreover, in seven books authored and co-authored over the past 15 years, along with and more than 50 articles written for industry journals, Breyfogle has advanced the theory and practice of Lean Six Sigma, forming his own brand of

enterprise improvement that he has dubbed Integrated Enterprise Excellence (IEE).

Six Sigma was founded in the 1980s within Motorola, and Jack Welch subsequently applied the quality improvement tool within GE. "Lean" was appended to Six Sigma later to expand the focus of improvement projects beyond quality to encompass waste reduction as well. But throughout the 1980s and 1990s, Six Sigma and Lean Six Sigma remained focused on the completion of projects: companies looked for processes that could be improved within the organization; identified discrete projects to accomplish the prescribed improvement; assigned staff trained in Lean Six Sigma to carry out those projects; then set metrics for how they would measure the success of those projects, typically dollars saved.

And therein, Breyfogle believes, lies the problem with traditional Lean Six Sigma. "We pound our chests about how much we've saved using Lean Six Sigma deployments within the company," Breyfogle says. "Unfortunately, oftentimes no one can actually find the money, and even when the savings can be verified through the accounting system, the savings are not necessarily aligned with the bottom line benefits to the organization."

The issue is that when companies establish scorecards to measure the success of their improvement projects, those scorecards in and of themselves do not provide a roadmap for how to make the targeted improvements. "Just setting goals without having any way of achieving those goals, it can lead to the wrong activities," Breyfogle says. "It's really important to have measurements that drive the right kinds of activities." In his forthcoming book, *Integrated Enterprise Excellence – Volume 4: A Management and Black Belt Guide for taking Lean Six Sigma and Traditional Scorecards to the Next Level*,

Breyfogle tackles this conundrum and outlines an approach for taking Lean Six Sigma and scorecards “to the next level” with his Integrated Enterprise Excellence (IEE) methodology.

Keith Moe, former group vice president of 3M’s Electro and Communications Markets Group Division, has called IEE “the most complete and effective operational management system available,” providing management with “a crystal-clear picture of all aspects of corporate performance” and allowing management “to orchestrate the deployment of activities that provide the highest yields at points where they will have the greatest impact on the bottom line.”

In the following excerpt from the upcoming book, Breyfogle offers his own view of the shortcomings of the traditional Lean Six Sigma approach and provides an introduction to Integrated Enterprise Excellence.

Integrated Enterprise Excellence – Volume 4: A Management and Black Belt Guide for taking Lean Six Sigma and Traditional Scorecards to the Next Level

By Forrest W. Breyfogle III



Management Systems and Their Evolution

Learning disabilities are tragic in children, but fatal in organizations. Because of these disabilities, few corporations live half as long as a person; most die before they reach the age of forty. This book describes an Integrated

Enterprise Process Excellence (IEE) system where organizations become a learning organization that defies the odds and overcome learning disabilities.

With an IEE system, an organization builds upon what it has done right and wrong in the past so that in the future it becomes more profitable and better meets customers needs. Through this IEE approach, an organization evolves into a learning organization, which has aligned organizational activities leading to improved effectiveness and

efficiencies that positively impact the bottom-line. IEE takes Lean Six Sigma and Scorecards to the next level.

Everyone within a business should be focusing his/her efforts toward creating More Customers and Cash. The Existence and Excellence of organizations depend on it; i.e., $E=MC^2$, the same formula as Albert Einstein’s famous equation. However, in reality, people can often be very busy but are not necessarily doing the right thing at the correct time, from an organization’s enterprise

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process point of view. People can be working very hard in their functions, which might not be the best use of their time from an enterprise process perspective. Organizations can have a very difficult time orchestrating activities so that all personnel are in step to the rhythm that is necessary to obtain their business objectives and goals.

When we think about accomplishing activities in the workplace, we might immediately think of the phrase “What you measure is what you get” as being the cornerstone for this organizational orchestration. However, we must be careful. If we do not measure the right things correctly, we can be stimulating the wrong activities. I prefer to paraphrase this statement as “What and how you measure can stimulate what you get.”

Traditional management metrics often include tabular reporting and perhaps classic trend and bar charts. Management can also use a scorecard system to monitor and track both financial and non-financial areas of the business against measurement goals established for each of these metrics. With this scorecard approach, metric owners can be tracked against and are responsible for achieving the goals established for their respectively balanced scorecard metrics; i.e., financial, customer, internal business, and innovation and learning perspectives. Benefits can be achieved from these traditional performance measurement systems; however, if care is not exercised, many of these systems can lead to the wrong business activities and the sub-optimization of processes.

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Processes and Metrics

Everyday, we encounter devices that have an input and an output. For example, the simple movement of a light switch causes a light to turn on. An input to this process is the movement of the switch. Within the switch, a process is executed whereby internal electrical connections are made, and the output is a light turning on. This is just one example of an input-process-output (IPO).

As users of a light switch, toaster, or a radio, we are not typically interested in the details of how the process is executed; i.e., the mechanics of the light switch, toaster, or radio. We typically view these processes like a black box. However, there are other processes with which we are more involved. For example, the process we use when preparing for and traveling to work/school. For this process, there can be multiple outputs such as arrival time at work/school, whether we experienced an automobile accident or other problems, and perhaps whether your children/spouse also arrived at school on time. The important outputs to processes can be called Key Process Output Variables (KPOVs), Critical to Quality (CTQ) characteristics, or Ys.

For both a black box process and other processes, we can track output over time to examine the performance of the system. Inputs to processes can take the form of inherent process inputs (e.g., raw material), controlled variables (e.g., process temperature) and uncontrolled noise variables (e.g., raw material lots). For our go-to-work/school process, consider that we daily quantified the difference between our arrival time and our planned arrival time and then tracked this metric over time. For this measure, we might see much variability in the output of our process. We might then wish to examine why there is so much variability by either consciously or unconsciously trying to identify the inputs to the process that can affect the process output. For reducing the variability of commuting time, we might list inputs to our process as departure time from home, time we got out of

bed, traffic congestion during the commute, and whether someone had an accident along our route to work/school.

If we examine the inputs to our process, there are both controllable inputs and uncontrollable or noise inputs. A controllable input might be setting the alarm clock, while an uncontrollable input is whether someone had an accident on our route that affected travel time. By examining our arrival times as a function of the time departing home, we might find that if we left the house five minutes earlier we could reduce our commute time by twenty-five minutes. For this situation, departure time is a key process input variable (KPIV) that is an important X, which affects our arrival time. When this KPIV is controlled in our go-to-work/school process, we can reduce the amount of variability in our arrival time at work/school (KPOV).

Another tactic to reduce the variability of our arrival time is to change our process so that we can reduce the commute time or make our process robust to uncontrollable/noise input variables. For example, we might change our travel route to work/school so that our travel time is reduced during the high-traffic hours of the day. This change could also reduce the likelihood of lengthy delays from accidents; i.e., we made our process robust to the occurrence of accidents, which was a noise input variable.

Similarly, in business and other organizations we have processes or systems. For the go-to-work/school process, the identification of inputs and potential process changes that positively impact our process output is not too difficult. Easy fixes can also occur within business processes when we view our process systematically through an IEE strategy. However, the identification and improvement systems for some business processes can be more involved. For these more complex situations within IEE, I view this search for KPIVs and process improvement strategies as a murder mystery where we use a structured IEE approach for the uncovering of clues that lead us to how we can improve our process outputs.

Let's now consider the following example KPOVs (Ys) that a company could experience along with one, of perhaps many, KPIV (Xs) for each of these processes:

	Ys or KPOVs	Xs or KPIVs
1	Profits	Actions taken to improve profits
2	Customer Satisfaction	Out of stock items
3	Strategic Goal	Actions taken to achieve goal
4	Expense	Amount of WIP
5	Production cycle time	Amount of internal rework
6	Defect Rate	Inspection procedures
7	Critical dimension on a part	Process temperature

These Ys are at various levels within an organization's overall system of doing business. One should note that the inputs to one process can be the output from another. For example, a described input for expense is WIP, which is a high-level output from other processes.

In IEE, a cascading measurement system can be created, which aligns metrics to the overall needs of the organization. The tracking of these measurements over time can then pull (using a Lean term) for the creation of IEE projects, which addresses common cause variability improvement needs for the process output. Through this pragmatic approach, where no games are played with the numbers, organizations have a systematic way to improve both customer satisfaction and their bottom-line. IEE is much more than a quality initiative; it is a way of doing business.

IEE utilizes a 30,000-foot-level metric terminology to describe a high-

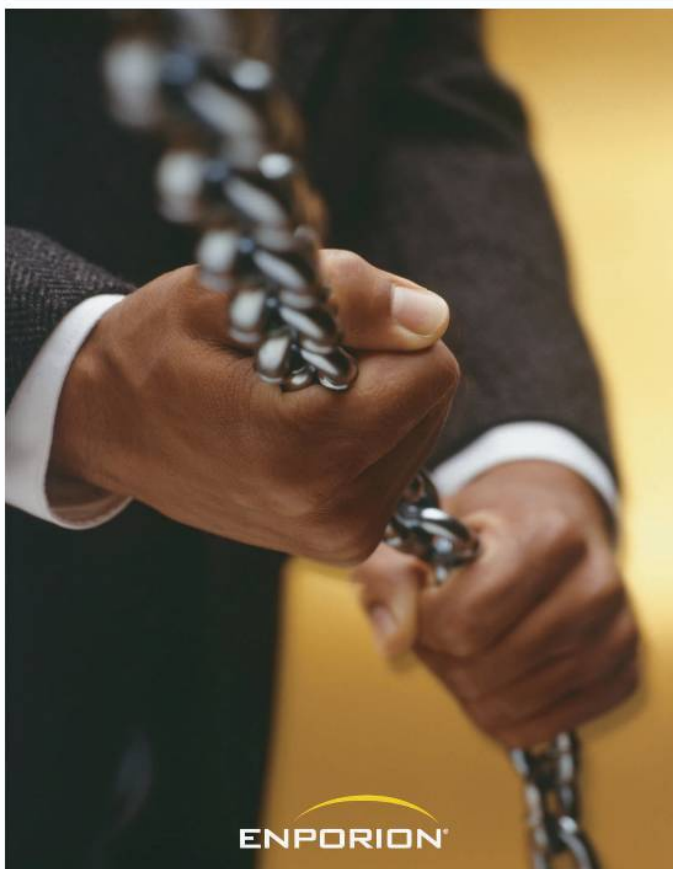


level view for KPOV, CTQ, or Y variable responses. This high-level, "in-flight airplane view" for operational and project metrics has infrequent subgrouping/sampling so that short-term variations, which might be caused by KPIVs, will result in charts that view these perturbations as common cause issues. A 30,000-foot-level individuals control chart can reduce the amount

of organizational firefighting when used to report operational metrics.

In IEE, there is an alignment and management of metrics throughout the organization so that there is an orchestration of the right activity being done at the correct time. Meaningful measurements are statistically tracked over time at various functional levels of the business. This leads to an enterprise cascading measurement methodology where meaningful measurements are statistically tracked over time at various functional levels of the business. In this system there is an alignment of important metrics throughout the organization. This alignment extend from the satellite-level business metrics to high-level KPOV operational metrics, which can be at the 30,000-foot-level, 20,000-foot-level, or 10,000-foot-level (infrequent subgrouping/sampling), to KPIVs at the 50-foot-level (frequent subgrouping/sampling). This metric system helps organizations run the business so that there is less firefighting and a pull (used as a Lean term) system for the creation and execution of projects whenever operational metric improvements are needed. **SDC**

About the Author: *Forrest W. Breyfogle III is founder and CEO of Smarter Solutions (Austin, Texas). He is author or co-author of seven books on Six Sigma, including Implementing Six Sigma (winner of the Crosby Medal from the American Society for Quality), Managing Six Sigma, Wisdom on the Green: Smarter Six Sigma Business Solution and Lean Six Sigma in Sickness and in Health. More information at www.smartersolutions.com.*



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