

Combining Hoshin Planning with the Balanced Scorecard to Achieve Breakthrough Results

By Gerald K. DeBusk and Chuck DeBusk

Many organizations today are adopting the Lean and Lean Six Sigma tools and philosophies. Studies conducted by the authors have revealed that four of every 10 organizations are using Lean or Lean Six Sigma. (Hereafter we will use the designation LSS to refer to both Lean and Lean Six Sigma.) Earlier research we performed on LSS raised our curiosity as to what complementary effects, if any, exist for organizations that adopt both LSS and strategy or policy deployment tools such as the Balanced Scorecard (BSC) and Hoshin Planning, which originated in Japan. If such strategy deployment tools were being used in LSS organizations, would their use have an effect on LSS benefits? We surveyed more than 200 members of the Execution Premium Community (XPC), asking them about their use of LSS and of the BSC and Hoshin Planning. The results reveal that the combination of the BSC and Hoshin Planning can be especially helpful for those organizations pursuing LSS.

What Is Lean Six Sigma?

Before defining Lean Six Sigma, we must first define its separate components: Lean and Six Sigma.

The term “Lean” was first introduced in the writings of James Womack and Daniel Jones in the 1990s.¹ We define Lean as an overarching philosophy or system focusing on delivering value to the customer, improving flow of products/services, eliminating waste, and respecting people. Often Lean is construed to be mainly about downsizing or waste elimination. Many, including the authors, feel that waste elimination is secondary to the main tenets of providing customer value and improving flow. Lean organizations concentrate on improving flow of products and services through the entire system rather than optimizing individual and departmental performance reports. Unfortunately, traditional accounting and performance measure-

ment systems—with their emphasis on departmental efficiencies and absorption of overhead—work, at least in part, against Lean goals.

The most recognized and best example of a Lean system is the Toyota Production System. Many of those not involved with Lean may fail to realize that the Toyota Production System originated from the revolutionary automobile manufacturing practices Henry Ford developed in the early 1900s. Today, Toyota can claim a long track record (with only a few exceptions) of providing customer value by delivering high-quality, low-cost products. Waste, especially in the form of inventory, is kept low by increasing flow (reducing cycle times) and producing to meet customer demand. Perfection is relentlessly pursued through kaizen, or continuous improvement efforts, throughout the organization.

Current Lean practitioners believe business processes should be organized and facilities should be arranged along “value streams.” There are two main types of value streams: 1) the order fulfillment value stream and 2) the new-product value stream. The order fulfillment value stream includes all the activities necessary to bring a product or service from customer order to delivery. New-product value streams comprise the steps necessary to develop a new product for the market. Value streams cut across the traditional departmental organization structure and thus require new ways of managing and measuring the business. The value stream approach requires, to the extent possible, dedicated resources (people and machinery).

Six Sigma was first developed at Motorola in the 1980s. Early adopters included such firms as General Electric, Honeywell International, and Raytheon. Six Sigma is a structured, data-driven methodology for improving business processes and quality. The name refers to the quality goal of 3.4 defects per million opportunities. Like Lean, Six Sigma focuses on providing customers the products and services they desire.

There are two submethodologies included in Six Sigma: DMAIC and DFSS (or DMADV). DMAIC (Define-Measure-Analyze-Improve-Control) is used in existing processes to reduce variability. It includes collecting data to establish baselines, performing statistical analysis to determine causality of errors, using tools such as “Design of Experiments” to improve processes, and monitoring processes and improvement efforts to ensure they remain under control. DFSS (Design for Six Sigma) is the more common acronym for the second submethodology, but DMADV (Define-Measure-Analyze-Design-Verify) is also used. DFSS is used for new-product development with a focus on quality and meeting customer requirements.

¹ D. Jones and J. Womack, *Lean Thinking: Banish Waste and Create Wealth*, Simon and Schuster, 1996.

NUMBER OF RESPONSES: THE LEAN SIX SIGMA ADOPTION WAS...						
Balanced Scorecard	1 Not Beneficial	2 Somewhat Beneficial	3 Beneficial	4 Very Beneficial	Total Responses	Average Response
Yes	1	8	18	17	44	3.16
No	0	12	20	7	39	2.87
Total	1	20	38	24	83	3.01

FIGURE 1: BENEFITS OF LEAN SIX SIGMA BY BALANCED SCORECARD USE

Those who use the Balanced Scorecard are more than twice as likely to rate their LSS adoption as “very beneficial” compared with non-Balanced Scorecard users. This finding reflects a benefit of using both approaches together.

NUMBER OF RESPONSES: THE LEAN SIX SIGMA ADOPTION WAS...						
Adoption Timing	1 Not Beneficial	2 Somewhat Beneficial	3 Beneficial	4 Very Beneficial	Total Responses	Average Response
BSC Preceded LSS Adoption or Adopted Simultaneously	0	7	13	15	35	3.23
BSC Adopted After LSS	1	1	5	2	9	2.89
Total	1	8	18	17	44	3.16

FIGURE 2: BENEFITS OF LEAN SIX SIGMA BY ADOPTING BALANCED SCORECARD BEFORE OR SIMULTANEOUSLY WITH LEAN SIX SIGMA

Organizations that adopted the Balanced Scorecard prior to or in conjunction with adoption of LSS reported more successful LSS adoptions. This raises the question “What is it about the Balanced Scorecard that aids users of LSS?”

NUMBER OF RESPONSES: THE LEAN SIX SIGMA ADOPTION WAS...						
Balanced Scorecard for Strategy Deployment	1 Not Beneficial	2 Somewhat Beneficial	3 Beneficial	4 Very Beneficial	Total Responses	Average Response
Yes	1	6	13	15	35	3.20
No	0	2	5	2	9	3.00
Total	1	8	18	17	44	3.16

FIGURE 3: BENEFITS OF LEAN SIX SIGMA BY BALANCED SCORECARD USE FOR STRATEGY DEPLOYMENT

Organizations that use both the Balanced Scorecard and LSS tend to see more success with their LSS adoption. The Balanced Scorecard is an effective mechanism to achieve strategy deployment and LSS can be more effectively leveraged using this approach.

NUMBER OF RESPONSES: THE LEAN SIX SIGMA ADOPTION WAS...						
Hoshin Planning for Strategy Deployment	1 Not Beneficial	2 Somewhat Beneficial	3 Beneficial	4 Very Beneficial	Total Responses	Average Response
Yes	1	0	2	7	9	3.78
No	1	6	11	8	26	3.00
Total	1	6	13	15	35	3.20

FIGURE 4: BENEFITS OF LEAN SIX SIGMA BY COMBINING HOSHIN PLANNING WITH THE BALANCED SCORECARD FOR STRATEGY DEPLOYMENT

Hoshin Planning can be an effective tool to augment the Balanced Scorecard in deploying strategy in LSS organizations. Users of both Hoshin Planning and Balanced Scorecard significantly outperform those only using the scorecard approach.

Organizations often combine Lean and Six Sigma. Many feel that Lean is great for improving flow and eliminating waste but does little to reduce process variability. Six Sigma, with its focus on reducing variability, can be used to not only improve quality but also increase flow. However, Lean provides a more all-hands-on-deck emphasis on flow that many prefer. Therefore, combining these two approaches allows an organization to better achieve breakthrough performance results.

Survey

The BSC has long been recognized as a strategy execution tool. But would the BSC or a similar strategy deployment tool be effective in LSS organizations? Kaplan and Norton discuss quality and process improvement methodologies in their book *The Execution Premium: Linking Strategy to Operations for Competitive Advantage*.²

Quality and process improvement projects will generate the highest payoffs when they are selected based on criteria linked to the company's strategic objectives. ... [B]etter, faster, cheaper local processes does not a strategy make. Companies should emphasize improving those processes that contribute the most to the success of the company's strategy. (p. 164)

Our experience in studying LSS organizations led us to inquire about the relevance of the BSC and other strategy deployment tools to these new approaches to managing organizations. With the much-appreciated assistance of the Palladium Group, Inc., we surveyed members of its Execution Premium Community (XPC) about BSC and LSS use. We received 208 usable responses, with approximately 40% (83) of these organizations identifying themselves as LSS users (using either Lean alone or Lean Six Sigma). Service organizations (including finance, insurance, and real estate plus public administration) were the largest block of LSS organizations at 58%, followed by manufacturing firms at 27%.

2 R. Kaplan and D. Norton, *The Execution Premium: Linking Strategy to Operations for Competitive Advantage*, Harvard Business Press, 2008.

Effect of BSC on Perceived Benefits of LSS

Of the 83 LSS organizations, 44 also were using the BSC. Survey participants were asked to evaluate their adoption of LSS as “not beneficial,” “somewhat beneficial,” “beneficial,” or “very beneficial.” We assigned a numerical score of 1 (not beneficial) to 4 (very beneficial) to these choices. The survey results provide strong evidence that those who combine the BSC with LSS receive more benefits from their use of LSS. The average rating for those using the BSC was 3.16, 10% higher than those who did not use the BSC. The difference was statistically significant ($p = .044$ one-tailed). An examination of the data reveals that 39% of BSC users rated their LSS adoption as “very beneficial” compared with 18% of non-BSC users. See *Figure 1*.

We further subdivided the BSC users into two groups, those who adopted the BSC before or in conjunction with LSS and those who adopted the BSC after LSS. Those organizations with BSC adoptions preceding or in conjunction with LSS had more successful LSS adoptions. Their average rating on benefits was 3.23 (on the same 1-to-4 scale) versus 2.89. Nearly twice as many respondents rated their LSS as “very beneficial” if they did not wait to adopt the BSC until after adopting LSS. See *Figure 2*.

The above analysis should lead the reader to ask the questions, “What is it about the BSC that aids LSS users?” and “Why do those organizations need the BSC in place when adopting LSS?” Organizations manage their business differently after adopting LSS. They are pursuing different strategies and using different performance measures.

Kaplan and Norton suggest the BSC is a method of deploying strategy throughout the organization. We asked LSS and BSC users if they were using the BSC to deploy strategy throughout the organization. Nearly 80% of the organizations said yes. Those who used the BSC

The case studies outlined in The Execution Premium provide evidence that Hoshin Planning can be an effective tool for augmenting the BSC in deploying strategy in LSS organizations. Our survey supports that hypothesis. Nine of the 35 organizations using the BSC for strategy deployment also used Hoshin Planning for strategy deployment. The Hoshin Planning and BSC users significantly outperformed those using only the BSC.

to deploy strategy tended to see more success with their LSS adoption, with an average rating of 3.20, compared with a rating of 3.00 for those companies that did not use BSC as a strategy deployment tool. See *Figure 3*.

Combining Hoshin Planning with the BSC in LSS Organizations

Hoshin Kanri is a Japanese term that many translate into English as “policy deployment” or “strategy deployment.” *Hoshin Kanri*—also referred to as Hoshin Planning—is a structured process using forms and rules for deploying strategic objectives throughout the organization and executing strategy effectively. It is data driven and based on the Plan-Do-Check-Act (PDCA) cycle. A central tenet of Hoshin Planning is that business fundamentals must be controlled first before breakthroughs can be achieved. Business fundamentals involve tactical decision making. Breakthrough plans involve strategic decisions.

Also central to Hoshin Planning is the “catchball” activity. Goals, objectives, and measures are effectively translated down and across the organization through a process of discussions and negotiations. The parties cannot proceed without agreement, which helps achieve broad support for the plan. Kaplan and Norton in *The Execution Premium* outline how mobile-phone producer Information and Communications Mobile used the catchball process to cascade BSC objectives (p. 166–68). They also discuss carbon black producer Thai Carbon Black’s use of Hoshin Planning and catchball to deploy objectives. Kaplan and Norton state:

In TCB’s [Thai Carbon Black’s] Hoshin Kanri catchball process, department heads translated BSC measures into specific measures for their units; then, via catchball, they cascaded those down to the next managerial level within each department, and then down to supervisors and local employee project teams. Each cascading stage used two-way communication between managers and their direct subordinates to agree on measures and targets. This systematic cascading process created alignment throughout the organization. (p. 169)

The case studies outlined in *The Execution Premium* provide evidence that Hoshin Planning can be an effective tool for augmenting the BSC in deploying strategy in LSS organizations. Our survey supports that hypothesis. Nine of the 35 organizations using the BSC for strategy deployment also used Hoshin Planning for strategy deployment. The Hoshin Planning and BSC users significantly outperformed ($p = .007$ one-tailed) those using only the BSC. See *Figure 4*.

Seven of the nine organizations (78%) using both Hoshin Planning and the BSC rated their LSS adoption as “very beneficial.” It appears from the information in *Figure 4* that Hoshin Planning turbocharges the effectiveness of BSC efforts to deploy and execute strategy in LSS organizations. The data suggests that Hoshin Planning and the BSC combine to achieve maximum effectiveness of LSS adoptions. Robert Guenard, senior strategic initiatives leader at Merck Manufacturing Division, states, “We are using the mind-sets, methodologies, and

NUMBER OF RESPONSES: THE LEAN SIX SIGMA ADOPTION WAS...						
BSC and Hoshin Planning Usage/ Strategy Deployment (SD)	1 Not Beneficial	2 Somewhat Beneficial	3 Beneficial	4 Very Beneficial	Total Responses	Average Response
BSC and Hoshin Planning used for SD	0	0	2	7	9	3.78
BSC used for SD without Hoshin Planning for SD*	1	6	11	8	26	3.00
BSC usage but not for SD**	0	2	5	2	9	3.00
Hoshin Planning usage without BSC***	0	3	4	0	7	2.57
Hoshin Planning and BSC not used	0	9	16	7	32	2.94
Total	1	20	38	24	83	3.01

* Two organizations in this category were using Hoshin Planning but not for SD. For simplicity, their results are combined with others using BSC for SD.

** Only one of the organizations is using Hoshin Planning in this category. For simplicity, their results are combined with other BSC users.

*** Three of the seven organizations in this category did not indicate specifically that their Hoshin Planning usage was for SD. Their results were slightly more favorable (average 2.67 compared with 2.50 for those claiming Hoshin Planning for SD). For simplicity, the results were combined into a single row.

■ **FIGURE 5: BENEFITS OF LEAN SIX SIGMA BY STRATEGY DEPLOYMENT METHOD**

Organizations using only Hoshin Planning achieve mediocre benefits from adopting LSS. But organizations that combined Hoshin Planning with the Balanced Scorecard achieved remarkable results. Hoshin Planning, alone, is not the answer.

tools for Hoshin Planning within the framework of the Kaplan and Norton Strategy Execution system, which we have already implemented.”

Additional Analysis and Summary

Prior literature on this topic and the authors agree that LSS organizations need a tool to deploy strategy in order to achieve what Kaplan and Norton call an “execution premium.” Unfortunately, our survey suggests those organizations using only Hoshin Planning achieve mediocre benefits from adopting LSS. Seven organizations in our survey used Hoshin Planning without the BSC. Three of these organizations rated their LSS adoption as “somewhat beneficial,” and four rated the adoption as “beneficial” (average response was 2.57 on a scale of 1 to 4). As

previously mentioned, the nine organizations that combined Hoshin Planning with the BSC for strategy deployment achieved remarkable results. Seven of the nine rated their LSS adoption as “very beneficial,” and the other two organizations rated it as “beneficial” (average response was 3.78). See *Figure 5*.

Summary

The results illustrated in *Figure 5* provide strong evidence that combining Hoshin Planning with the BSC is extraordinarily effective in achieving breakthrough results in LSS organizations. ■

“We are using the mind-sets, methodologies, and tools for Hoshin Planning within the framework of the Kaplan and Norton Strategy Execution system, which we have already implemented.”

— Robert Guenard, Senior Strategic Initiatives Leader, Merck Manufacturing Division



Chuck DeBusk is Vice President, Performance & Process Improvement for Universal Health Services. DeBusk’s current role is to provide leadership in identifying and realizing opportunities to reduce waste and rework, enhance processes, and improve execution. He has more than 30 years of experience in process improvement and is a Certified Lean Six Sigma Master Black Belt and a Registered Professional Engineer.



Gerald K. DeBusk is a UC Foundation Associate Professor of Accounting at The University of Tennessee–Chattanooga. His nearly 30 years of experience include his recent years in academia, 15 years in accounting departments of manufacturing firms—which included positions as a corporate controller/ secretary-treasurer, plant controller, and cost accounting manager—plus two years in public accounting with a Big Eight firm.

To learn more

“Has Your Accounting Department Evolved? Accounting and the Use of Lean Six Sigma,” G. K. DeBusk and C. DeBusk, *Cost Management*, 2011, 25 (3), pp. 15–19.

“Characteristics of Successful Lean Six Sigma Organizations,” G. K. DeBusk and C. DeBusk, *Cost Management*, 2010, 24 (1), pp. 5–10.

“The Effects of Adopting the Balanced Scorecard on Shareholder Returns,” A. D. Crabtree and G. K. DeBusk, *Advances in Accounting Incorporating Advances in International Accounting*, 2008, 24 (1), pp. 8–15.

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