



How to get the most  
from Lean Six Sigma

# Lean Six Sigma for the services industry

By Peter Guarraia, Gib Carey, Alistair Corbett, and Klaus Neuhaus

BAIN & COMPANY

**Peter Guarraia is a partner in Bain & Company's Los Angeles office,  
Gib Carey is a partner in Chicago, Alistair Corbett is a partner in Toronto,  
and Klaus Neuhaus is a partner in Dusseldorf.**

## How to get the most from Lean Six Sigma

As Lean Six Sigma's popularity grows in the services industries, so can the disappointing results. An upfront diagnostic X-ray helps companies get more from their efforts.

Lean Six Sigma was originally devised to eliminate waste and improve manufacturing quality to no more than 3.4 defects per million opportunities. But now the method—made popular at companies like General Electric Co., Xerox Corp., and Johnson & Johnson—is increasingly finding a home in the services industry.

We have seen banks use Lean Six Sigma to support their growth strategy; financial services companies to put mergers back on track; energy companies to lower costs; telecommunications companies to improve customer service; and retailers to increase efficiency while boosting customer service in the store.

But Lean Six Sigma's growing popularity in the services industry masks a downside. Many organizations have trained and deployed legions of Lean Six Sigma experts—known as black belts—only to see little value result from their work. In a recent Bain & Company management survey of 184 companies, 80 percent say their Lean Six Sigma efforts are failing to drive the anticipated value, and 74 percent say they are not gaining the expected competitive edge because they haven't achieved their savings targets.

Drilling deeper, we discovered that mobilizing large and costly squads of black belts in some cases actually slows performance improvement efforts. Managers are unsure how best

to deploy the Lean Six Sigma experts, and too often black belts treat all problems, big and small, with the same approach, resulting in less-effective solutions. Moreover, they fail to prioritize the improvements that will make the biggest difference.

This last issue is particularly vexing to companies as they search for ways to reduce costs or boost revenues. While Lean Six Sigma can be excellent at remedying obvious maladies like call-center bottlenecks, it is less adept at uncovering the *hidden* sources of pain and identifying and sizing the largest opportunities for cost savings, waste reduction, or revenue generation. It's unnecessary and wasteful to run every process through Lean Six Sigma. Knowing where to focus *before* unleashing the black belts can make all the difference.

Companies that are yielding the biggest gains from Lean Six Sigma are deploying an upfront diagnostic X-ray to help them identify the most critical opportunities. Performed by a small advance team of black belts, the diagnostic X-ray consists of three steps:

**Enterprise Value Stream Mapping**, in which the X-ray team scans the enterprise and maps its primary processes to identify the biggest opportunities to reduce cost by reducing wasted time and materials.

**Benchmarking**, in which the performance of processes is measured against internal and external benchmarks to gauge shortcomings and establish improvement targets.

**Prioritizing**, in which the X-ray team determines which process improvements will yield the greatest results when the Lean Six Sigma teams are deployed.

**Lean Six Sigma for the services industry**

Only after the X-ray has identified the most pressing issues do companies begin the traditional five-step Lean Six Sigma DMAIC process—Define, Measure, Analyze, Improve, and Control—on the targeted areas.

**An insurance company's biggest source of pain**

This methodology paid off for a major UK insurance company that found itself at a crossroads. Plans to grow its market share by 150 percent were threatened by market changes that put new pressure on profits. The firm knew its internal processes were inefficient, but prior efforts to streamline them had failed. So, the insurer decided to take a diagnostic X-ray of its business to determine where to focus its efforts. By first examining its processes within a single business unit, the X-ray team was able to compare similar processes used by other business units to create benchmarks and set performance targets and priorities for reducing waste. The result was a dramatic reduction in annual processing time and revenue savings.

**1. Enterprise Value Stream Mapping**

The first move taken by the X-ray team is to develop a map of the operation's processes and the costs associated with them. The goal is to understand what activities a company performs, the source of its biggest expenses, and where inefficiencies or performance gaps exist. For instance, during the mapping stage, the insurance company's team started by creating a business-process fact base, which involved looking at processes from end to end—everything from account setup to claims handling—and gathering data on 189 activities. An analysis showed that there were seven major steps in the value chain. Each step then was broken out to look at time spent and staffing levels. This break-

down helped the company zero in on major inefficiencies. The company found that it was spending the same amount of time and money on every claim—be it for a highly valued customer like a global corporation, or a single individual.

With the value stream maps in hand, the team could see where improved performance would deliver the greatest and fastest cost savings.

**2. Benchmarking**

Determining how much performance might be improved is the purpose of the second step of the X-ray. The aim of this phase is to establish valid benchmarks, both internal and external, for each process to identify appropriate performance-improvement targets. Benchmarking was key to the dramatic reduction in processing time and cost savings achieved by the insurance company.

Using the results of value stream mapping, the X-ray team at the insurance company then established internal benchmarks by examining how various business units carried out similar processes. They found costly differences. For example, in one unit, the claims-handling process represented 11 percent of total costs, while at another business unit it was only 6 percent. The X-ray team found that the "placement" process—gathering customer information, placing insurance, issuing certificates, handing over processing to the back office, and chasing client payments—took twice as long in one business unit as it did in another. Armed with this knowledge, the company could establish valid performance targets for its less-efficient processes and develop standardized processing times.

Lean Six Sigma for the services industry

Benchmarking also helped the team track its costs by activity—an exercise that allowed the company to better understand client risk. The company was able to see where it made money, exposing the most- to least-profitable business units. The cost curve starkly showed how the company could tailor service to better align costs to what clients value, breaking customers into three segments based on overall profitability.

3. Prioritizing

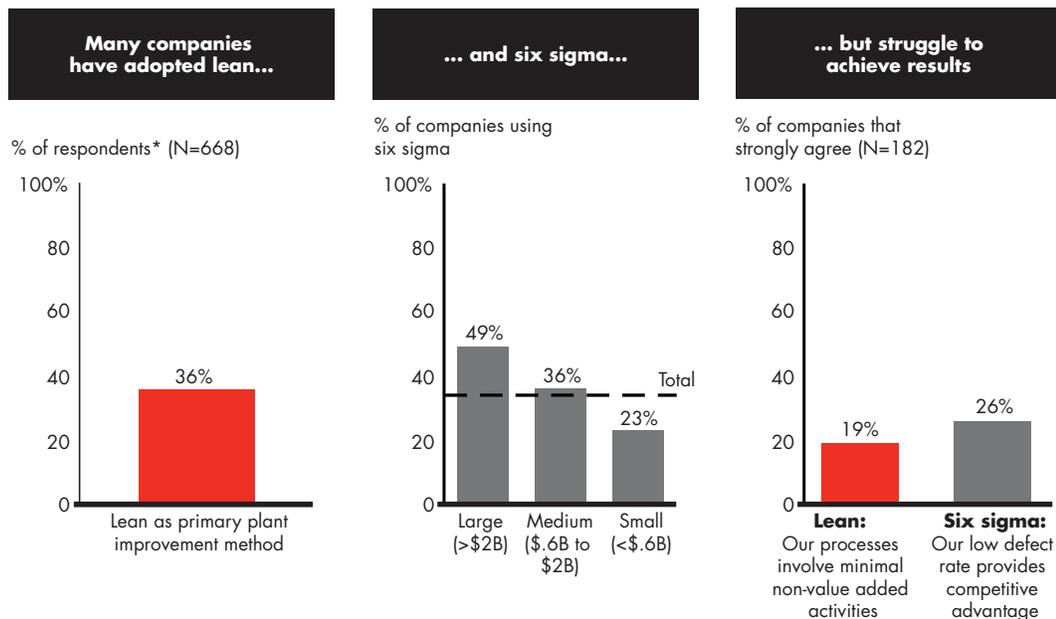
In this final phase of the X-ray, the team decides which problems to pursue in which order. For the insurance company, this meant plotting the value of solutions against how difficult they'd be to implement. At the top of the list: three opportunities for boosting revenues and cost savings, while also more effectively meeting customer needs. With its priorities firmly established, the black belts embarked on the Lean Six Sigma process.

First, the company set out to re-price some policies—charging more to clients that were expensive to serve, and raising prices for smaller clients that demanded tailored service. Within the first year, re-pricing alone earned the insurer an additional 10 percent of profits.

Second, the black belts worked on a series of organizational changes like standardizing the processing times across business units—boosting profits by a further 10 percent.

Third, over the next 30 months, the insurer invested in technology upgrades that included sophisticated cost-modeling tools. Over time, the investment paid off by allowing business units to calculate such details as how many hours employees need to spend on gold standard clients versus other customer segments. The cost analysis changed staffing assumptions, like how large a sales team it needed. Ultimately, IT investments helped deliver a final 30 percent profit increase.

Figure 1: Lean Six Sigma problem: many have adopted but few are satisfied with results



\*Note: Predominantly manufacturing companies; 25% with rev. > \$100M, 75% below  
 Source: PI Diagnostic Survey, n=182; Tools and Trends Survey, n=960; 2005  
 IW/MPI Census of Manufacturers by Industry Week

**Lean Six Sigma for the services industry**

**Putting the X-ray to work: Valuable surprises and great results**

The UK insurance company’s experience demonstrates how a technique originally designed to improve efficiency and quality on the factory floor is finding a home in the services industry. As Lean Six Sigma spreads to new industries, it is being deployed to help companies meet a range of new objectives. When paired with the diagnostic X-ray, the Lean concept becomes an even more powerful tool, showing companies how they can do everything from spending less on equipment to redesigning stores for efficiency to performing a better job of stocking and replenishing inventory. The following five case studies illustrate the breadth of the diagnostic X-ray’s potential.

**A bank supports its growth strategy**

A major Australian commercial bank wanted to take advantage of a market shift that was

pushing more business in its direction. But it wouldn’t be able to handle larger, more complex loan applications unless it overhauled credit processes at every level of the organization—from loan processing to credit policies to the sales force and credit approval teams. The bank needed new capabilities that would increase the speed, accuracy, and efficiency of credit processes and decision making. The protracted loan approval process was driving away new investments from valued customers who needed—and expected—quick action.

Value stream mapping of the bank’s credit processes revealed major trouble spots in the bank’s systems, including a lack of uniformity in loan approvals. Too often, credit officers made judgment-based, instead of rule-based, loan decisions. Also, all loans—large or small—had to move through the same initial layers of approval, with 20 percent sent through a more rigorous screening, even when the bank was familiar with a client’s

**Why Lean Six Sigma fails to satisfy**

Our experience and research has identified five common pitfalls that derail Lean Six Sigma efforts.

- There’s a lack of accountability for aggregate results, with teams working independently. Bain tackles this by establishing a central program office that tracks Lean Six Sigma efforts, stops what’s not working, and resets priorities.
- Efforts aren’t tied to corporate goals, and sponsorship is diffused. Bain works directly with senior leaders to keep Lean Six Sigma on their daily agenda and tightly linked to the achievement of corporate priorities.
- The company loses sight of the goal in the heat of training an army of black belts. Bain’s approach is pragmatic with the emphasis on dramatic improvements and the most critical metrics.
- The problem returns after a couple of years. The Bain approach embeds change by training staff to ensure continuity. It also ensures programs aren’t operating in silos.
- Lean Six Sigma efforts are wasted on areas that will not make a difference. To remedy the problem, Bain’s diagnostic X-ray enables a relentless focus on top opportunities with the highest value.

---

**Lean Six Sigma for the services industry**

risk history. Finally, the process was riddled with inefficiencies and downtime and many applications required reworking due to errors. During a series of workshops, loan managers who dealt directly with clients expressed their frustration with credit approval officers who often failed to update them about a loan's status. As a result of poor communication and delays, loan managers found it harder to win new business.

The bank used benchmarking to determine how long, where, and why loans were stuck in the approval process, as well as the reasons behind rejections. By comparing systems at different branches, the team could see which ones were working and what differences resulted in improvements. For example, one branch had expedited its loan approvals by placing a more experienced credit approval officer on the floor to work with loan managers. This partnering helped customers get a better sense of both timing and approval odds.

With mapping and benchmarking results in hand, the bank prioritized a list of high-value opportunities for Lean Six Sigma. Top priorities: developing a fast track for lower-risk loans, standardizing processes, and improving risk assessment. And, borrowing a lesson from the branch that was able to speed up loan approvals, credit approval officers would work with loan managers on a customized application process that included such steps as asking a customer up front for specific information.

The diagnostic X-ray helped the bank focus its black belts on opportunities that promised the best results. With the improvements in place, new business is fueling growth rates at 2.5 times the market. Almost 50 percent of loan applications now go through the new fast-track approval process, which has trans-

lated into a 30 percent quicker approval time for customers. Approval times now take 3-6 days less, ranging from 7-14 days, down from 10-20 days. With more experienced credit officers working in the field, the number of loans requiring more time-intensive reviews has dropped from 20 percent to 5 percent. And there are fewer errors—streamlining and standardizing processes has cut by 25 percent the number of applications that need reworking.

**A mobile phone provider improves customer service—and also cuts costs**

A leading European mobile phone company in a highly competitive marketplace knew it had to beef up customer service to prevent competitors from winning away its customers. At the root of the problem was the company's customer service center. Operators were swamped with calls, they had a poor track record for resolving customer problems, and the call-center was operating with a limited budget. The company needed a two-pronged solution: a new call-center strategy that would transform the center into a revenue generator; and the ability to zero in on the most critical initiatives to improve customer service.

The diagnostic X-ray laid the groundwork for the Lean Six Sigma work that would develop both solutions. It exposed key call-center inefficiencies, which in many cases were driving customer defections. The X-ray showed that the biggest cost saver would be to redesign systems so operators could resolve problems on the first call, allowing the company to reduce staffing. And to turn the call center into a revenue generator, the X-ray process used customer and competitor surveys to create benchmarks for identifying three distinct customer groups based on their customer value. That ultimately led to creating service

**Lean Six Sigma for the services industry**

plans for each customer segment. By knowing where to focus its efforts, the mobile phone operator's new call-center strategy has improved customer service and started generating revenue. The company is on track to save 25 percent of its operating costs in less than three years.

**Saving a merger: Figuring out who does what best**

A major financial institution used the diagnostic X-ray and Lean Six Sigma to resolve cultural differences that threatened the success of a recent merger. When a merchant bank acquired the market leader in its segment, management couldn't reach a consensus on how to run the merged business. The former competitors used vastly different business practices and processes. The resulting culture clash was driving top talent out the door. By employing the diagnostic X-ray, management was able to build a consensus around merged operating practices and quickly prioritize high-value areas for improvement.

The key to resolving the culture clash was developing a "best of both worlds" approach. In the value-stream mapping phase, they looked at loans both institutions had reviewed. The comparison allowed bank officials to see how differences in their processes affected loan approvals and client relationships.

The mapping uncovered a key difference in how the two banks handled more-complex, higher-risk deals. While the larger merchant bank did a better job assessing the risk of bigger deals, approvals took as much as two times longer. Even on easier deals, the approval process was slow. By comparison, the acquired bank was smoother and faster at loan approvals, and was better at customer service—but its deals typically were smaller.

To get a sense of the industry standard, the diagnostic team benchmarked the banks against competitors' approval processes for deals over \$50 million. They discovered that the acquiring bank had many unnecessary steps, especially for easier deals. Customer interviews revealed that while large loan approvals were handled appropriately, the bank needed to take a tip from its acquired partner and improve customer relations by better managing the expectations of its highly-valued private equity clients.

Once areas for improvement were identified, the bank prioritized them by asking "What are the two or three high-impact, easy-to-implement ways to improve the loan approval process and retain talent?" Since pay raises weren't in consideration, the bank looked at changes that would streamline the process without dramatically changing the way employees were accustomed to working.

The answer—a loan approval system with a path that allows for two choices: a simpler route with fewer hurdles for low-risk deals; a more rigorous, standardized process for more-complex deals. The solution incorporated the acquired bank's ease and predictability with the acquiring bank's sophistication for handling larger deals. To let the marketplace know that the merged bank could handle both higher-risk private equity loans as well as smaller ones with the same speed and dependability, it sent out a newsletter showcasing recent loans and the time it took to get them done.

By using the diagnostic X-ray, the two banks built a strong business case for merging their two cultures. The concrete data and specifics helped them acknowledge relative strengths and agree on which processes required improvements. Black belts then

**Lean Six Sigma for the services industry**

went to work using Lean Six Sigma’s DMAIC methodology, drilling down on specific improvement initiatives and developing metrics to ensure continuous results. This “best of both worlds” approach has allowed the merged entity to increase its average deal size by 35 percent, and by streamlining processes, management is able to quickly move applications through the approval process.

**A retailer uncovers small fixes for substantial gains**

A US big-box retail market leader needed to stave off competition from general merchandise discounters to keep its strong growth on track. But the cost of its solution—making stores more customer friendly—was skyrocketing faster than it was delivering results. The retailer needed a customer-focused strategy that it could afford over the long haul. The diagnostic X-ray in advance of Lean Six Sigma played a crucial supporting role, uncovering ways to cut costs that would be invisible to customers.

The diagnostic X-ray team used value stream mapping for up to 100 operations to determine how many hours were spent each week on routine tasks, everything from opening and closing stores, pricing, taking inventory, restocking shelves, and filling orders placed through the retailer’s website. Tasks with high numbers relative to the activity’s importance went to the top of the target list for improvements. Armed with the list of potential targets, the diagnostic team headed to stores where they observed processes—looking for those that seemed ripe for streamlining. The team surveyed employees and conducted internal benchmarking by comparing systems, store to store.

No process was too small for review—like the existing process of requiring employees to fill out a special form each time a customer requested price matching. Employees explained that the time-consuming form never was looked at again. Also on the target list: the inefficient system for filling online orders. While the retailer was encouraging customers to place orders on its website for

**Other ways to get more from Lean Six Sigma**

- 1) Put strong players on the LSS team and train them thoroughly. Assigning less-qualified people to the team because they happen to be available is a recipe for disaster. You want strong, driven players on the team who have credibility in the organization and who will build momentum for success. Make sure you give them adequate training; if they don’t know how to apply Lean Six Sigma methodology, they won’t be able to meet their goals.
- 2) Check progress regularly and establish a few simple success metrics. There should be a weekly meeting devoted to tracking dollars saved versus dollars invested, number of projects or opportunities identified, and the number of issues resolved. A key question: Are the savings generated manifesting to the bottom line?
- 3) Refocus the team if needed. Often, problems get resolved more quickly than expected and don’t need team attention for as long as planned. Managers also need to review LSS efforts continually to make sure the highest-value opportunities are getting attention.

**Lean Six Sigma for the services industry**

pickup at a nearby store, the system for getting orders into customers' hands was unreliable and time consuming. The team found out why: unless an employee was stationed at a computer, the store had no way of knowing when an order arrived. There were further inefficiencies when it came to filling the order. Items weren't placed near the pickup area in any particular order, causing delays as employees searched for the right product.

The X-ray team examined another process it had red-flagged: the system used to keep a steady stream of high-profit items on store shelves. It was more important to have a \$100 high-margin core item in stock than a \$5 accessory. By watching employees and checking merchandise holes on shelves, the team realized that workers weren't following a weekly plan for restocking inventory. When asked why, employees said the plan was so detailed, it felt impossible to get through the entire inventory in a week.

Back at corporate headquarters, the team prioritized tasks for retooling by estimating the value of each opportunity measured against the cost of implementation. What's impressive is that instead of a few big home runs, the retailer found \$50 million in annual cost reductions from small process changes. Top priorities included:

- Redesigning the restocking calendar so employees could easily see which products to check at what times each day throughout a month. Projected annual savings was \$10 million.
- Eliminating those time-consuming customer forms for \$3 million annually in savings (\$2.3 million from labor and \$800,000 from paper).

- Fixing the online order pickup process. By adding new ways to ensure that the store was aware when an order was received, and changing how and where items were stored for easy retrieval, the retailer could save another \$1.2 million.
- Standardizing the daily setup of cash register drawers. The company found it could save another \$700,000 annually simply by knowing how much change is needed.

When the retailer finally unleashed its black belts, the diagnostic allowed it to focus immediately on creating results that matter.

**An energy leader discovers a savings windfall—and fends off competitors**

A leading UK energy company saddled with \$1 billion in operating expenses needed to improve its cost performance to protect its market leadership. To curb customer defections and better compete, the company sought to transform its business processes, which were riddled with inefficiencies. The company decided to increase its odds of success by taking a diagnostic X-ray before unleashing its Lean Six Sigma black belts.

By performing a detailed mapping of costs related to all aspects of customer service—from pursuing new customers, setting up accounts, measuring energy use, and collecting payments—the diagnostic team developed a detailed analysis of cost-saving opportunities. The biggest one was a surprise. During the mapping phase, the company determined how often its representatives read a meter; then in the benchmarking phase, the company found that nearly 50 percent of its meter-reading expenses were avoidable. Most of the opportunity came from

simply reducing the number of times it reads a meter. No team of black belts was even required—in this case, the diagnostic X-ray convinced the company it didn't need to use the Lean Six Sigma methodology to fix its meter-reading operation.

As it prioritized other cost-saving opportunities, the company found additional ways to score several quick wins. By more effectively targeting new customers and reducing call-center costs, it could trim customer acquisition expenses—automating routine calls alone would save over \$5 million annually. It could trim support costs by 20 percent to 30 percent with a redesign of billing, payment, and debt-collection processes. In the end, the detailed X-ray of core processes showed the company how it could reduce 30 percent of its total costs, while at the same time more effectively competing for new customers and improving customer service. Once the black belts set to work on these initiatives, the energy leader was on track to achieve stronger cost performance—and its long-term competitive strategy. Such is the power of the diagnostic X-ray. 

## **Bain's business is helping make companies more valuable.**

Founded in 1973 on the principle that consultants must measure their success in terms of their clients' financial results, Bain works with top management teams to beat competitors and generate substantial, lasting financial impact. Our clients have historically outperformed the stock market by 4:1.

## **Who we work with**

Our clients are typically bold, ambitious business leaders. They have the talent, the will and the open-mindedness required to succeed. They are not satisfied with the status quo.

## **What we do**

We help companies find where to make their money, make more of it faster and sustain its growth longer. We help management make the big decisions: on strategy, operations, technology, mergers and acquisitions, and organization. Where appropriate, we work with them to make it happen.

## **How we do it**

We realize that helping an organization change requires more than just a recommendation. So we try to put ourselves in our clients' shoes and focus on practical actions.



## BAIN & COMPANY

For more information, please visit [www.bain.com](http://www.bain.com)

AMSTERDAM • ATLANTA • BEIJING • BOSTON • BRUSSELS • CHICAGO • COPENHAGEN • DALLAS • DUBAI • DÜSSELDORF • FRANKFURT • HELSINKI • HONG KONG  
JOHANNESBURG • KYIV • LONDON • LOS ANGELES • MADRID • MELBOURNE • MEXICO CITY • MILAN • MOSCOW • MUNICH • NEW DELHI • NEW YORK  
PALO ALTO • PARIS • ROME • SAN FRANCISCO • SÃO PAULO • SEOUL • SHANGHAI • SINGAPORE • STOCKHOLM • SYDNEY • TOKYO • TORONTO • ZURICH