

# The power of lean sigma

Lean sigma is a business strategy that relentlessly pursues the reduction of lead time and the absence of variation throughout the value chain, ensuring Six Sigma process capabilities in business and manufacturing processes. When Six Sigma emerged as a quality-control methodology, it was recognised that the principles of lean do not conflict with the techniques used in Six Sigma. In fact, they integrate very well when applied in a planned, coordinated approach...

## Anand Sharma

**L**ean uses a kaizen breakthrough methodology. It incorporates cross-functional teams to develop and implement changes that bring about immediate results within a week. Six Sigma's strength is in its fact-driven problem solving capabilities. It is an analytical methodology that uses data collection and analysis to reduce variation and improves quality, thereby reducing costs in both products and processes. A typical Six Sigma project may take eight to twelve months. It is possible to capitalise on the strengths of both by integrating the two programs.

### **The starting point**

Undertaking a lean journey unfolds in three phases: entry, synchronisation, and

growth. Each leads logically to the next, but is not replaced, because the value of each phase neither diminishes nor ends.

The goal of the entry phase is to get one's house in order. Some leaders view that's exactly what they need to survive the crises their companies face. Others think of specific struggling areas that are struggling and could use some help. A third group believes their companies really don't have problems that would lead them to do business differently.

Unless a company has devoted years to eliminate waste in its processes, its culture has changed from slow and rigid to fast and flexible, and unless it has continuously improved its ability to deliver valued solutions to its customers, its house is not in order. It is missing opportunities to improve quality and responsiveness. It is wasting resources on non-value-added activities. And it is fertile ground for stagnant market share, flat revenues, shrinking profits, and eager competitors.

It doesn't mean that this journey is for everybody. Not everyone is ready to put his house in order because doing so demands permanent changes in how one runs his business.

### **Kaizen explained**

Kaizen is a Japanese word that combines two roots: kai meaning change and zen meaning good, which roughly translates into english as continual improvement. A kaizen



breakthrough event is a cross-functional, team-based, rapid-fire, action-packed process for rapid improvement. Hold these events every month, and you create a culture that values operational excellence.

Senior leaders are invited to experience a kaizen breakthrough event in a company skilled at conducting them. The experience can be shocking. Events focus on the physical transformation of a process within one week. Equipment is moved. Desks are relocated. Unnecessary steps are eliminated. The bias for action compels team members to learn by doing, to test their ideas immediately, to take risks. The mantra is creativity before capital. Solve problems quickly and simply with resources at hand, learn, and improve. The key emphasis during kaizen breakthrough events is action. When you combine action and common sense, you always make progress, even if you fail. It is truly a ready-fire-aim culture, where quick and crude way is preferred over slow and perfect.

This new culture gets things done either in a week, a couple of days or few weeks. Instead of stretching projects out to address every possible contingency and problem, the new culture demands action-make and observe-make changes. It works in every sector, whether you make products or sell services or work in non-profit and government agencies.

Most companies reward success, ignore inaction, and punish failure. As a result, they are slow and risk averse and produce limited, random improvements. They won't stand a chance against fast, agile, flexible, lean companies that exist or will exist in their industries.

The first kaizen breakthrough event a company holds is often a turning point for the organisation. Senior leaders involved in the team (one-third of the team is recommended to participate in the first event) witness the power of the process, how it energises people, stimulates creativity, eliminates waste, and improves productivity. Employees recognise leadership's personal commitment to the process and feel valued for their contributions. Everyone involved in the event see a new hope for the future of their company and the work they do.

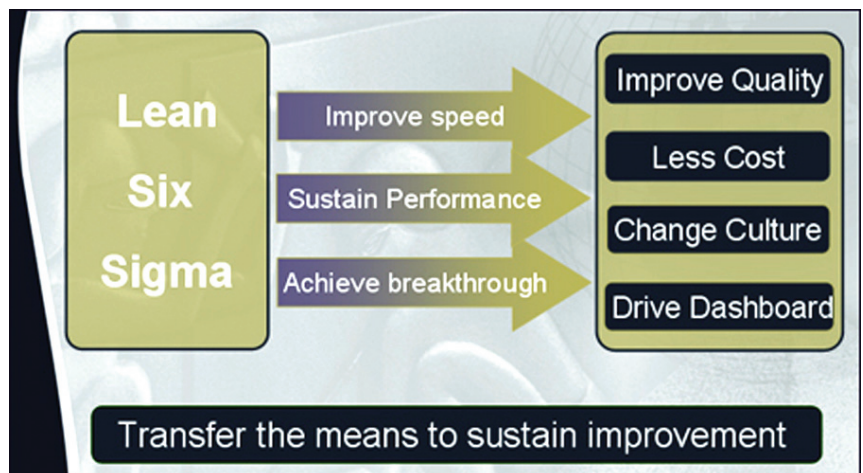
### Setting the stage for success

To make sure the first kaizen breakthrough event becomes a turning point for the organisation, it must unfold under the best conditions. This involves assessing the organisation, determining the best areas for kaizen breakthrough events, identifying opportunities for growth, and preparing for the event.

To prepare for the first kaizen breakthrough event, a three-day launch meeting for 15 to 20 managers is held. On the last day, the operations and technical teams figure out which specific area to focus on, select the cross-functional team, set the objectives for the week, arrange logistics, identify who will support the event, and determine how it will be communicated.

The best project areas have a product or service line focus, serve a strategic business need, and have large improvement potential. One-third of the team of eight to ten people work the process, one-third come from support areas, and one-third are outsiders who have nothing to do with the area. Team members commit to get totally involved in the full time, week-long event with no distractions. After the event, the team members who work the process, own the process and have more knowledge and tools to continuously improve it.

A key element in the preparation is getting people ready for its immediate impact. The event lasts just one week and leads to action, often to a radically new and better process. The goal of kaizen breakthrough



event is not to make recommendations but to physically change the process to eliminate waste right away. That's a shock to a slow-moving organisation.

## Kaizen breakthrough event

Week-long kaizen breakthrough events are so effective because physical changes are made to critical processes that have been running the same way for years or even decades. The bias for action compels teams to finish the week with a significantly better process than the one they started with on Monday. Where 'slow and elegant' ruled the day, 'quick and crude' ways are pushed. Where months of studies led to recommendations of huge investments, 'creativity before capital' is encouraged. Act. Simplify. Innovate. Flow. This is what happens during a typical kaizen breakthrough event for any type of process:

**Monday:** Conceptual training on transformational management system, kaizen breakthrough methodology, and standard operations, identify areas of initial focus.

**Tuesday:** Analyse the current process; formulate process improvements; physically make improvements to implement one-piece flow; make safety and workplace organisation improvements.



Stacks of work in process are clear evidence of overproduction — a type of waste that involves making products that no one has ordered

**Wednesday:** Continue hands-on improvement; re-time the process; make major equipment moves, if necessary; make fixtures, tools, and other enhancements.

**Thursday:** Refine the improvements; run trials on the new, improved process under actual production conditions; establish standard work; run and re-time the improved process; document the new standard operation.

**Friday:** Present the results to senior management team and celebrate.

## Finding and removing waste

Think for a moment about a process that is important to you. It may be a process for selling your products or services or reviewing your group's performance or reporting financial results, or may be another process that dictates how successful is your organisation. Pick one, think for a moment about when that process starts and when it ends, and estimate what per cent of the time from start to finish is wasted.

Here's what we mean by wasted time:

- **Defective products or services:** The cost of repair, rework, scrap, replacement, inspection, warranty claims, etc.
- **Overproduction:** Making anything that someone has not ordered.
- **Excessive inventories:** The 'extra' produced by the process that has to be moved and stored, that hides defects and other problems, and causes long lead times and obsolescence.
- **Unnecessary processing:** Steps in the process that seem to add value but aren't needed.
- **Unnecessary transportation:** Making stuff in one place and then hauling it to another floor or another facility, or storing it for the next step.
- **Waiting:** People don't have any work to do, or they're waiting for someone, a supplier or another employee/department upstream in the process to give them work, or they're watching a machine do the work.
- **Excessive motion:** The wasted movements that employees must make to perform their work those are ergonomically incorrect or cause fatigue.

We have found that as much as 95 per cent of the time in any process is wasted time. It doesn't matter what the process is, most of the time it takes, does not add value. The goal is to reduce processes to their core values, eliminating steps that don't add value, and retaining only those steps that do add value.

When you do this, you dramatically reduce lead time, which profoundly improves quality, responsiveness, and customer satisfaction; lowers costs; and generates new enthusiasm and team spirit.

A kaizen breakthrough event finds and removes waste in one week, but the streamlining doesn't stop there. As people work the new process, backlogs and excess inventory are pared down. Enthusiastic employees start to view the process through 'kaizen eyes', noticing opportunities for improvement that were hidden in plain sight before people knew how to observe.

Simpler issues or projects with a narrow focus may be the target of a point kaizen, an abbreviated one- to three-day kaizen event that also involves a cross-functional team. Companies use point kaizens for such areas as removing a bottleneck in a key process, identifying and eliminating the causes of a

high error rate, and resolving an item from an earlier kaizen week.

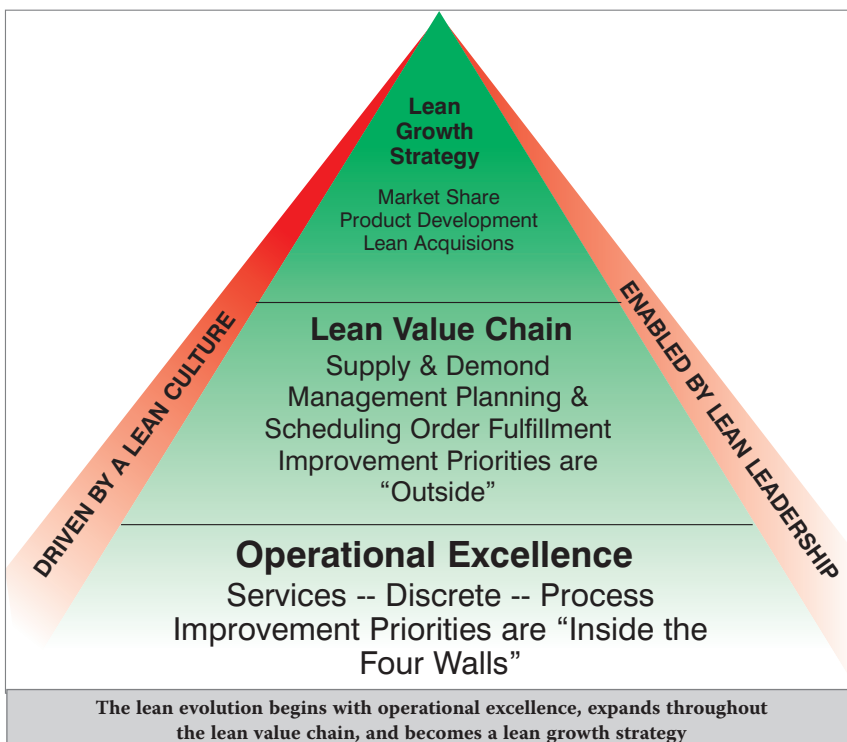
## Operational excellence first

The first phase of transformational management system is to get your house in order, to develop a culture that will not tolerate waste in any form, in any process. By doing so, you can grow your business significantly without having to hire more people or build new facilities. You can improve productivity by improving employee satisfaction. You can dramatically accelerate key processes and reduce inventory, while gaining market share. And that's just the payoff for Phase I!

There comes a point during this phase when the focus begins to turn from inside the organisation to outside of it. Nearly all key processes depend on suppliers on the front end and customers, dealers, and/or distributors on the back end to improve flow. As you get your house in order, issues with supply and demand surface and must be addressed to continue the transformation.

Here's one example. We worked with a company that had drastically reduced its lead time and wanted to turn its newfound responsiveness into a competitive advantage. The company approached dealers and outlets about ordering and receiving its products on a daily basis instead of monthly, so the dealers and outlets wouldn't have to store inventory on their shelves. When it balked at the added cost of sending out trucks every day, the company said, "Just give us your order by 10 pm and we'll ship it to you the next day, and you'll know when it's coming because the route will be predictable." The company promised to absorb the cost. Most customers couldn't resist the offer. As they took their inventories down, they relied more and more on the company to supply them and bought less and less from its competitors. At the same time, the daily demand improved the flow of products through the company because they were now being built to specific, daily orders.

The initiation of Phase II typically



begins one to two years after one starts Phase I, although some areas may be ready for it in just six months. Phase II focuses on synchronisation through supply/demand chain alignment and listening to the voice of the customer.

The dramatic improvements made in Phases I and II free human and capital resources that can be used to fuel growth. All clients are advised to communicate to their employees, early and often, that no one would be laid off because of the improvements that would be made. This can be a hard promise to be kept when up to 95 per cent of every key process is being eliminated.

Phase III involves translating the voice of the customer through value innovation into new products and services that serve markets you're not supplying and customer needs you're not serving. If your company is in a mature industry and you are growing at the industry rate, which is typically 2 to 4 per cent, and if your productivity improves 10-15 per cent a

year, you need to grow three to five times faster than your industry to keep your people gainfully employed. We want to accelerate the product/service development process to leverage the gains made during Phases I and II. This will build brand loyalty, lock in customers, and increase market share.

### Time to start the journey

The power of lean sigma is undeniable. In an increasingly global and competitive marketplace, if you want to achieve the kind of success that has made Toyota the world's top automaker, you need to consider transforming your business, and the place to start is with lean sigma. **MMT**

### Reference:

*Adapted from The Antidote: How to Transform Your Business for the Extreme Challenges of the 21st Century, by Anand Sharma and Gary Hourselet, TBM Consulting Group, Inc. Copyright 2006, Managing Times Press, Durham, North Carolina, USA.*



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