Lean Six Sigma Business Transformation FOR DUMMIES®

A Wiley Brand

Learn to:

- Transform your business
- Manage continual change
- Develop and implement processes that eliminate waste
- Successfully deploy Lean Six Sigma over time

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Lean Six Sigma Business Transformation For Dummies

Visit www.dummies.com/cheatsheet/lssbusinesstransformation to view this book's cheat sheet.

Table of Contents

Introduction

This book builds on *Lean Six Sigma For Dummies* (Wiley), which we wrote to make the topic easy to understand and apply. It's important to understand and apply it because we feel that Lean Six Sigma can help organisations of all shapes and sizes, both private and public, improve their performance. We also feel that Lean Six Sigma can help organisations in their transformation journeys, enabling them to deploy their strategy more effectively.

Readers of this book need to have at least some knowledge of Lean Six Sigma. If this isn't the case, we recommend you have a copy *of Lean Six Sigma For Dummies* (Wiley) to hand, as we make a number of references to that book which will help explain some of the terms and techniques we refer to in this book. Referring to another book so often isn't the usual *For Dummies* practice, but in this instance we wanted to avoid repeating everything about Lean Six Sigma and making this book twice as long.

We also stress that an organisation can deploy Lean Six Sigma without going through a business transformation. Likewise, an organisation can go through a transformation without using Lean Six Sigma. Our focus in this book is to demonstrate how Lean Six Sigma can help an organisation deploy its strategy and successfully undertake transformation.

Lean Six Sigma provides a rigorous and structured approach to both help manage and improve performance, and to support the transformation of an organisation. It helps you use the right tools, in the right

place, and in the right way, not just in improvement but also in your day-to-day management of activities.

As often as not, an organisation's strategy fails because it hasn't been effectively deployed rather than because the strategy itself was ill-conceived. Lean Six Sigma and the DRIVE model (Define, Review, Improve, Verify and Establish) can provide a way forward that will keep deployment on track and ensure key milestones are met.

Lean Six Sigma really is about getting key principles and concepts into the DNA and lifeblood of your organisation so that it becomes a natural part of how you do things.

About This Book

The potential of Lean Six Sigma is still nowhere near as well harnessed as it could be. We feel that this is especially the case when it comes to helping organisations successfully deploy their strategies and transform their operations and culture.

It seems that many organisations lose sight of their strategic goals and ambitions and find it hard to focus appropriately on what needs to be done. Everyone's too busy, but it's important to recognise the difference between business and busyness – to know what's important.

We wrote this book with the aim of helping individuals and organisations identify a road map that can help them drive their organisations to their intended destinations. In particular, we wanted to draw out the role of the leaders and managers and introduce our DRIVE model and capability maturity road map as a route to success. We refer to these throughout the book, along with a collection of concepts, tools and techniques to help you on your transformation journey.

Foolish Assumptions

In Lean Six Sigma, avoiding the tendency for people – and managers in particular – to jump to conclusions and make assumptions about things is crucial. Lean Six Sigma really is about managing by fact. Despite that, we've made some assumptions about why you may have bought this book:

- ✔ You're contemplating a full deployment of Lean Six Sigma in your business or organisation, and you need to understand what you're getting yourself into.
- ✔ Your organisation is looking to transform in some way, and you're interested in knowing how Lean Six Sigma can help in the improvement of performance and the deployment of policy and strategy.
- ✔ Your organisation has already implemented either Lean or Six Sigma and you're intrigued by how it might help you achieve more.
- ✔ You're a student in business, operations or industrial engineering, for example, and you realise that Lean Six Sigma and its link to the deployment of strategy could help shape your future.

We also assume that you realise that Lean Six Sigma demands a rigorous and structured approach to understanding how your work gets done and how well it gets done, and how to go about improving your processes.

Icons Used In This Book

Throughout the book, you'll see small symbols called *icons* in the margins; these highlight special types of

information. We use these to help you better understand and apply the material. Look out for the following icons:

This icon pops up alongside examples that show you how to apply an idea to your business.

Bear these important points in mind as you get to grips with Lean Six Sigma.

Information that isn't necessary for implementing your transformation but which you may find interesting.

Keep your eyes on the target to find tips and tricks we share to help you make the most of Lean Six Sigma.

We share true stories of how different companies have implemented Lean Six Sigma to improve their processes. We also share true stories of when things go wrong so that you learn from others' mistakes.

This icon highlights potential pitfalls to avoid.

Beyond the Book

Find out more about Lean Six Sigma Business Transformation by checking out the bonus content

available to you at www.dummies.com.

You can locate the book's e-cheat sheet at www.dummies.com/cheatsheet/lssbusinesstransformation, where you'll find handy hints and tips.

Be sure to visit the book's extras page at www.dummies.com/extras/lssbusinesstransformation for further Lean Six Sigma business transformation-related information and articles.

Where to Go From Here

We hope you'll want to go for a drive! Grab the steering wheel and map and transform your organisation. But do remember it takes time, preparation and planning. And a lot of commitment.

Please also remember that, with a *For Dummies* book, you can begin wherever you like. Each part and, indeed, each chapter, is self-contained, which means you can start with whichever parts or chapters interest you most.

That said, if you're new to the topic, starting at the beginning makes sense. Either way, there's lots of cross-referencing throughout the book to help you see how things fit together and how to put them in the right context.

Part I
Getting Started with Lean Six Sigma

For Dummies can help you get started with lots of subjects. Visit www.dummies.com to learn more and do more with *For Dummies*.

In this part ...

- Find out more about Lean Six Sigma and 'transformation' and why it's needed.

- Learn about transformation and the link to Strategy deployment.

- Get to know the DRIVE Model and how to apply it.

Chapter 1

Introducing Lean Six Sigma

In This Chapter

▶ Understanding what transformation means

▶ Breaking down the PDCA cycle

▶ Choosing between DMAIC or DMADV

As well as an overview of the broad content of this book, this chapter provides an introduction to what we mean by transforming an organisation and why your organisation may need it. We take a brief look at the DRIVE and Plan, Do, Check, Act models that provide the framework for deploying the strategy that leads to transformation. The chapter also provides a reminder of the key principles of Lean Six Sigma and the DMAIC and DMADV methods used to improve existing processes or design and create new ones.

Defining Transformation

The *Oxford English Dictionary* describes transformation as 'a marked change in form, nature or appearance'. And in the context of business transformation that definition is a pretty accurate fit.

You may need to address organisational problems such as high error rates in dealing with customer orders, which in turn lead to increased complaints and ultimately loss of market share. But a burning platform

situation may not exist at all. The organisation may be targeting growth in some way, perhaps through an entirely new market or product range, for example. It might even be seeking to change its identity and with it the perceptions of the marketplace.

One way or another, though, your organisation is seeking a marked change, be it in performance, appearance or both. And almost certainly, the change is likely to require a change of thinking and behaviour on the part of the people in the organisation, especially the leaders and managers.

Whatever the rationale that's driving the need for transformation, a crystal clear link to the organisation's strategy and its deployment is essential. The Plan–Do–Check–Act (PDCA) cycle comes into play here in terms of the planning for and support of the transformation and the deployment of strategy.

A business transformation takes time to achieve and requires the organisation to utilise an effective implementation methodology – the DRIVE model (Define, Review, Improve, Verify and Establish) – and to create a capability maturity roadmap to support the changes. The capability maturity roadmap provides a phased approach to deploying Lean Six Sigma capability in the organisation. Chapter 3 covers the DRIVE model and the capability maturity roadmap in more detail.

This book focuses on Lean Six Sigma as the vehicle to support and drive the changes needed in thinking and behaviour, and that also provides a framework for the improvement projects that emerge through the journey ahead. We provide only a relatively brief summary of the ins and outs of Lean Six Sigma, however, as it is described in detail in *Lean Six Sigma For Dummies* (Wiley).

Before we look at Lean Six Sigma in a little more detail, however, we need to take a look at the PDCA cycle.

Introducing the Plan–Do–Check–Act Cycle

The Plan–Do–Check–Act (PDCA) cycle, as illustrated in Figure 1-1, provides a foundation for strategy deployment.
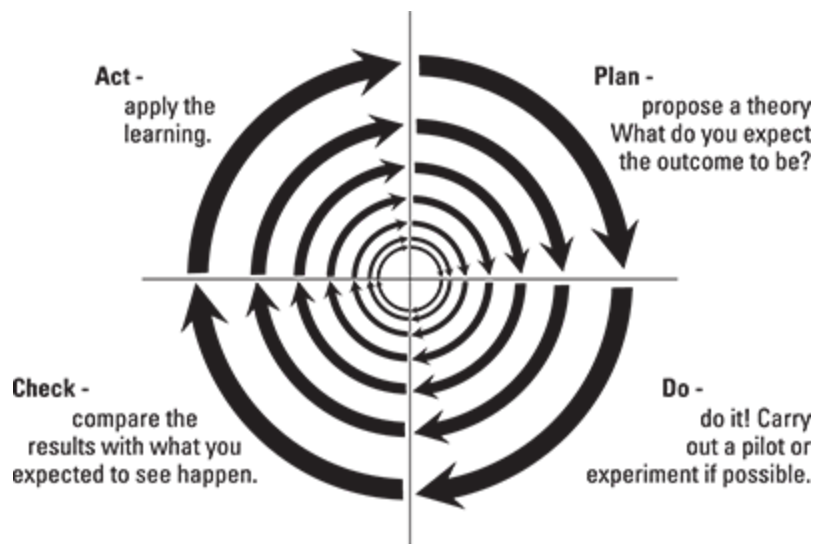
Figure 1-1: The Plan–Do–Check–Act (PDCA) cycle.

Although not overtly referred to in the Lean Six Sigma methodology, the PDCA cycle is very much at the heart of the DMAIC improvement method described in Chapter 2. The PDCA cycle breaks down as follows:

- ✔ **Plan:** This element refers to your theory or hypothesis. If you do this, you expect that to happen.
- ✔ **Do:** Here you put your theory to the test. Ideally, you undertake pilot activities or tests.
- ✔ **Check:** Here you look to see whether the outcomes of your actions in the Do phase are producing the results

your Plan led you to expect. To do that properly, you need to ensure you gather the right data and also that you're viewing things from the correct perspective, something you will have determined in the Plan phase. Lean Six Sigma helps you get the measures right, but you need to recognise the importance of going to see actual results in the workplace – the 'gemba', as the Japanese call it.

✔ **Act:** Depending on your findings in the Check phase, you may need to make adjustments to the theory you developed in the Plan phase and then run through another PDCA cycle. If things have gone according to plan, however, you can act to put your theory formally in place, or run a larger test depending on the scale of the pilot.

We return to the PDCA cycle throughout the book.

Showing the Way with Lean Six Sigma

To apply the Lean Six Sigma approach successfully, you need to recognise the need for different thinking. To paraphrase Albert Einstein:

> *'The significant problems we face cannot be solved at the same level of thinking we were at when we created them.'*

You want to change outcomes but you also need to realise that they are themselves the outcomes from your systems. Not the computer systems, but the way in which people work together and interact. And these systems are the product of how people think and behave. So, if you want to transform and change the outcomes

you have to change your systems, and to do that, you have to change your thinking.

You need to adopt thinking that focuses on improving value for the customer by improving and smoothing the process flow and eliminating waste. Since the establishment of Henry Ford's first production line, lean thinking has evolved over many years and in the hands of many people and organisations, but much of the development has been led by Toyota through the creation of the Toyota Production System. Toyota was able to build on Ford's production ideas to move from 'high volume, low variety' to 'high variety, low volume'.

Six Sigma thinking complements the lean approach through a systematic and robust approach to improvement that is based on management by fact. In particular, it looks to get the right data, in order to understand and reduce the variation in performance being experienced in the organisation's products, services and processes.

Identifying the key principles of Lean Six Sigma

Lean is not about cutting things to the bone. Rather, it's about providing value for your customers. Taiichi Ohno, the architect of the Toyota Production System, sums up the approach in a nutshell:

> *'All we are doing is looking at a time line from the moment the customer gives us an order to the point when we collect the cash. And we are reducing that time line by removing the non-value-added wastes.'*

And value is what customers are looking for. They want the right products and services, at the right place, at the

right time and at the right quality. Value is what the customer is willing to pay for.

Explaining Lean thinking

We're sure you're aware of the half-full, half-empty glass analogy applied to whether someone looks on the positive or negative side. A Lean practitioner might well respond by saying 'it's the wrong sized glass!' Either way, you first need to understand the customer and their perception of value. You have to know how the value stream operates and enable it to flow, perhaps by removing waste and non-value-added activities.

The value stream and the process are one and the same; they're simply different terms. Essentially, you're talking about 'how the work gets done'.

Lean thinking also means looking for ways of smoothing and levelling the way the work flows through the process and, where possible, working at the customer's pace – in other words, it's a pull rather than a push process. And, of course, in the pursuit of perfection, you're always looking to improve things through the concept of continuous improvement.

Linking up with Six Sigma thinking

Six Sigma thinking is very similar to Lean thinking. Six Sigma also focuses on the customer. A key principle of Six Sigma is understanding customer requirements and trying to meet them. If you don't understand those requirements, how can you expect to provide the customer with value?

Again, as with Lean thinking, to understand your processes you need to understand how the work gets done. Data comes into play more so with Six Sigma

thinking than with Lean thinking. If you're to manage by fact, you need to have the right measures in place and the data presented in the most appropriate way.

An appreciation and understanding of the variation in your process results enables you to more effectively interpret your data and helps you know when, and when not, to take action.

Six Sigma thinking also means equipping the people in the process so that they're fully involved and engaged in the drive for improvement.

Accessing the best of both worlds

Similarity and synergy exist between Lean thinking and Six Sigma and combining the two approaches creates a 'magnificent seven' of Lean Six Sigma key principles:

1. **Focus on the customer.**
2. **Identify and understand how the work gets done – the value stream.**
3. **Manage, improve and smooth the process flow.**
4. **Remove non-value-adding steps and waste.**
5. **Manage by fact and reduce variation.**
6. **Involve and equip the people in the process.**
7. **Undertake improvement activity in a systematic way.**

In Lean Six Sigma the key focus is on the customer. You need to understand their perception of value and their critical-to-quality customer requirements – the CTQs. The CTQs provide the basis for your measurement set; you can measure how well you're performing in relation to them. Focusing on the customer, and the concept of value-adding, is especially important because, in our

experience, when we start work with new clients, typically only 10 to 15 per cent of process steps add value and often represent only 1 per cent of total process time. Naturally, many organisations have discovered that their continuous improvement efforts have significantly improved process performance; unfortunately, plenty still exist that have yet to realise the benefits of Lean Six Sigma.

Lean Six Sigma provides a set of criteria to help you determine whether or not a process step is value-adding:

- The customer has to care about or be interested in the step. If they knew you were conducting this step, would they be prepared to pay for it?
- The step must either change the product or service in some way or be an essential prerequisite.
- The step must be actioned 'right first time'.

A value-adding step meets all three criteria. Non-value-adding steps must be removed. Obviously, some steps may not meet these criteria but are nonetheless essential for regulatory, fiscal or health and safety reasons, for example. By identifying and understanding how the work gets done – the value stream – you highlight the non-value-adding steps and waste. In doing so, you ensure that the process is focused on meeting the CTQs and adding value. Understanding, managing and improving the value stream is key to eliminating non-value-adding steps as it sets out all of the actions, both value creating and non-value creating, that bring a product or service concept to launch or process a customer order.

Ensuring the senior team's understanding of the organisation's high level value streams provides a foundation for the prioritisation of value-adding steps in

the various processes. 'Order to Cash' is a good example and is illustrated in Figure 1-2. Can you identify process steps that can be removed or reduced in some way? How can you close the gap, speed up the process and smooth the flow?
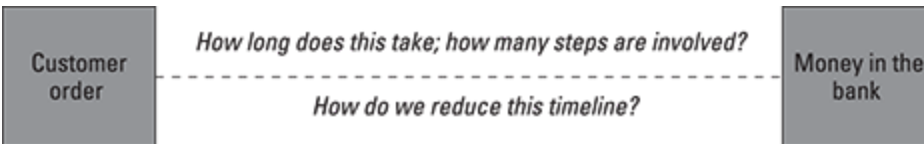

Figure 1-2: Looking at 'Order to Cash': Lean Six Sigma thinking in a nutshell.

Managing, improving, and smoothing the process flow provides another example of different thinking. If possible, use single piece flows, moving away from batches or at least reducing batch sizes. Either way, identify the non-value-adding steps in processes and try to remove them; at the very least, look to ensure that they don't delay value-adding steps. The concept of pull, not push, links to understanding the process and improving flow.

Pushing not pulling can be an essential element in avoiding bottlenecks. Overproduction, or pushing things through too early, is a waste. One way to improve flow and performance is to identify, remove and prevent waste or, as the Japanese call it, 'muda'.

Managing by fact, using accurate data, helps you avoid jumping to conclusions and solutions. You need the facts! And that means measuring the right things in the right way. Data collection is a process and needs to be managed accordingly. Using control charts enables you to interpret the data correctly and understand the process variation. You'll then know when, and when not, to take action and will be able to accurately describe the state of your process. You can find out more about control charts in *Lean Six Sigma For Dummies* (Wiley)

and also in *SPC in the Office* by Mal Owen and John Morgan (Greenfield Publishing).

Involving and equipping the people in the process is vital. The 'soft stuff' mustn't be overlooked. In simple terms, the soft stuff refers to how you work with the people involved in the process, and the key stakeholders who can so easily make or break the improvements you plan. A *key stakeholder* is anyone who controls critical resources, who can block the change initiative by direct or indirect means, who must approve certain aspects of the change strategy, who shapes the thinking of other critical parties, or who owns a key work process impacted by the change initiative. And it's about their acceptance of what you're trying to do. You may well have developed an ideal solution, but its effectiveness is dependent on how well you've gained acceptance from the people in the organisation. Chapters 2 and 3 cover the soft stuff in more detail.

Lean Six Sigma provides two frameworks for improvement. The action you take in improving or designing your processes needs to be undertaken in a systematic way. DMAIC provides the framework to improve existing processes and DMADV covers the design of new products, services and processes.

Improving Existing Processes with DMAIC

The DMAIC cycle is a systematic approach to solving problems and improving existing processes. DMAIC stands for Define, Measure, Analyse, Improve and Control, and these phases are illustrated in Figure 1-3.