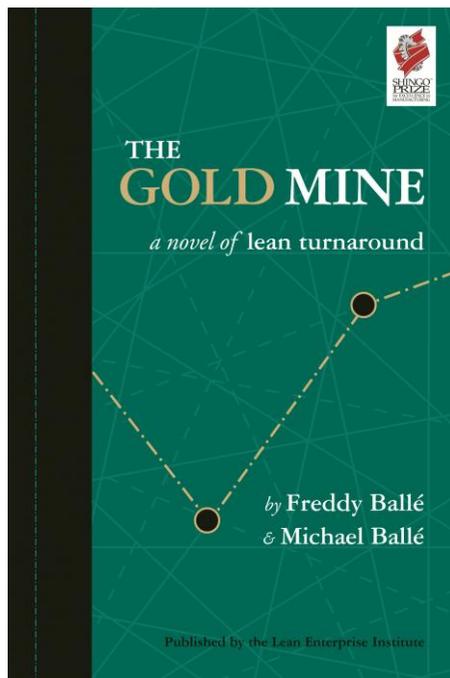


A BRIEF GUIDE TO

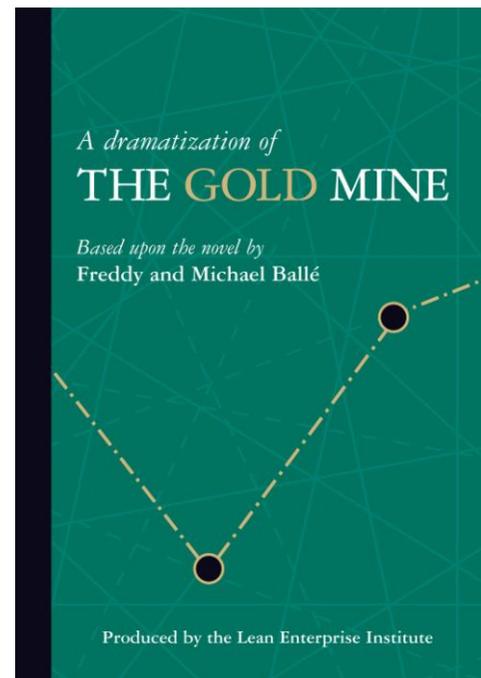
The Gold Mine

by Tom Ebreinfeld

Available as a paperback or e-book



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A BRIEF GUIDE TO

The Gold Mine

The Gold Mine: a novel of lean turnaround, by Freddy and Michael Ballé, is an attempt to capture the human challenges facing leaders in a lean transformation. The company in this story is fortunate to work with a sensei. A true sensei (taken from the Japanese for teacher, or in this case master) does more than simply teach. He or she makes sure that lean leaders and team members stay on the straight and narrow path of lean outcomes, and avoid politics, rationalizations, or other human obstacles. Above all, a sensei helps generate the continuing lean discussion at the heart of continuous improvement. Indeed, this is why *The Gold Mine* was originally written as a novel and produced in audio format as a dramatization: it highlights the nature of the human interaction beyond the cold dry facts of lean principles and tools. Learning lean has far more to do with emotion and behavior than simple cognition.

This study guide is designed to help lean practitioners who do not have access to a lean sensei. It seeks to generate collective reflection, or in lean terms, *hansei*. Author Jeffrey Liker says hansei “is not simply a philosophical belief system at Toyota, but a practical tool for improvement.” The practice of hansei can help you confront your experiences with the stories told in the book so as to deepen your understanding. This process should help you to develop the critical insight to see a problem and then apply lean tools as a solution. As easy as this may sound, many people try to apply the tools without doing the upfront thinking first.

As you discuss the principles of lean that are uncovered in *The Gold Mine*, keep a few points in mind:

Lean is a system. Lean is far more than a toolbox of techniques. It’s a system in which each tool is linked to all others according to fundamental principles. One of the key roles of a sensei is to make sure practitioners don’t get so enamored with their favorite tool that they forget to keep their bearings on both the purpose of the tools (visualize problems and solve them), and the links with all the other tools (how often do you hear of successful tool changeover reduction without reduction of batch size?).

Lean is a practice, not just a philosophy. Learning only occurs by doing, and lean happens at the kaizen focal point, when something in the system is changed to reduce waste. The senseis constantly reinforce this practical blend: learn to see, take action, compare results, reflect, and take the next required steps. It is part of their job to be impatient with talk and concepts, with over-cautious plans, and to constantly remind practitioners of genchi genbutsu: go and see for yourself, and then, just do it. This aspect of the sensei’s teaching is best conveyed by stories and vignettes in the lean tradition, which form the underlying basis for *The Gold Mine*. Every situation in the book is based on a sensei anecdote or story taken from the oral tradition of lean.

Lean is fundamentally about knowledge gained from rigorous problem-solving. Indeed, the sensei’s role is to push the lean practitioner not to be satisfied with the first answer that comes to mind, but always to explore the question further, experiment, and ultimately learn, so as to continuously improve systems and operations.

So please put *The Gold Mine* to work. This study guide is designed to help working groups to explore and apply lean principles, regardless of where you may currently be on your own lean journey. This guide presents a summary and the key challenges in each of the book’s chapters. The discussion points and resources that follow are selected to support further team discussion and learning. At the end of the guide you will find a lexicon of relevant lean terms. The Ballés recommend that you read one chapter a week, and meet to discuss its principles and to explore the key questions. Keep in mind that no one company will find an exact “fit” in terms of industry, or situation, or level of mastery: the point is to learn by reflecting on the experience shared in this story.

The Ballés’ experience with numerous lean turnarounds (both sustained and failed) revealed to them that successful lean managers get obsessed with lean. They continually talk about lean, they explain everyday occurrences in terms of muda, flow, and takt; and they spend far more time on the shop floor driving lean than they do dealing with corporate politics. While this guide can never substitute for such gemba learning, it can help you take the next step forward on your path to perfection.

Chapter One

PROFIT IS KING, BUT CASH RULES

DISCUSSION POINTS

Before moving into the details of lean, it is important to have an overall grasp of the business challenge you're facing. Companies often treat a fleeting symptom, such as defects in one product or challenges training employees in a new policy, as the primary problem when in fact their core challenge lies deeper. So at the outset of any serious lean initiative, the participants must develop a shared understanding of the key challenge facing them. So ask yourself, as a fundamental beginning point for your lean journey:

What is your fundamental business challenge?

RESOURCE

Ohno, Taiichi. 1988. *The Toyota Production System: Beyond Large-Scale Production*. Portland, OR: Productivity Press. By providing a vivid history of TPS, Ohno explains the particular context in which it evolved, which is another way of explaining the specific problem the system was designed to address.

Chapter Two

GOLD IN THE FLOW

DISCUSSION POINTS

At this early stage, Bob is basically trying to open Phil's eyes, to see his shop floor as a flow of value that is broken by many obstacles that reduce productivity and erode cash flow. Seeing the shop floor in this manner is a key lean skill. Without it, you are prone to implement lean tools as isolated improvements instead of parts of an integrated system. In practice, of course, learning to see is challenging in one's own plant, where old habits, politics, and other human considerations often blind us to the real work. So ask yourself if you can "see" the process by which you create value for your customer.

Can you trace the value stream all the way from raw material through production and into the arms of the customer? And more importantly: what problems have been revealed as a result? What factors are causing value not to flow?

RESOURCE

Rother, Mike, and John Shook. 1998. *Learning to See: Value Stream Mapping to Add Value and Eliminate Muda*. Cambridge, MA: Lean Enterprise Institute, Inc.

This detailed workbook represents an excellent introduction to value-stream mapping.

Chapter Three
TAKT TIME

DISCUSSION POINTS

While there are several key challenges posed in this chapter, start with this simple query:

Where—and how—are you producing waste?

Do you react immediately to correct the cause of this waste every single time we find an example? Remember, the point of this exercise is not simply to identify waste, but to train yourselves to eliminate it permanently.

As a starting point try the following exercise. With your team, develop a list of items that reveal waste. How can you tell, just by seeing and without asking any questions, how well the plant is operating? Then, pick a product and follow it through the plant or office, noting where inventory builds up, finished pieces sit unnecessarily, defects are built in, and so forth. Consider how often your work produces examples of the seven wastes:

1. overproduction of parts beyond customer demand
2. waiting of the operator
3. transport of parts or components
4. unnecessary processing
5. inventory of parts at the workstation
6. motion of the operator
7. non-conformities and rework

You can use your discoveries from this exercise as a starting point for kaizen work. Remember that you have *created* this waste through flawed process. Now that you have identified it, you can use the following methods to eliminate the systemic causes of muda.

Takt time, which figures prominently in the chapter under discussion, represents a key area to start: What is the takt time of the line or cell your team is focusing on? (This can be the same product family identified in the mapping exercise) Over how many weeks have you averaged the customer demand to calculate the takt time? How many shifts are you taking into account? What are the main sources of process instability on this cell or line?

In exploring these questions, you will gain a finer understanding of what is truly working, and what isn't, on the gemba. Operators should note unreliable equipment which has never been fixed by maintenance or engineering; spot non-conforming components which have to be reworked before they can be used; and identify material handling glitches which cause waiting, additional storage, and transport. In an office or other setting, this disciplined analysis will reveal examples of unnecessary work and rework, systemic failures to close loops, and overlapping and often varying forms and procedures.

RESOURCE

Rother, Mike, and Rick Harris. 2001. *Creating Continuous Flow: An Action Guide for Managers, Engineers, and Production Associates*. Cambridge, MA: Lean Enterprise Institute, Inc.

This workbook explains, a sequel to *Learning to See*, in simple step-by-step terms, how to introduce and sustain lean flows in pacemaker cells and lines. In particular, this guide explains why producing to takt time in a continuous flow is tied so strongly to identifying waste.

Chapter Four

STANDARDIZED WORK

DISCUSSION POINTS

Use a discussion—or better yet a practice—of the Five S exercise to assess standardization in your workplace. This understanding can be gleaned from the following question:

How well is the work defined, and how rigorously does the team focus on doing the same activities in the same sequence?

Discuss the impact of non-standardization on your every day factory and/or office environment and find the most glaring cases of waste. Remember that standardized work is dynamic because the standard is always being improved; it's creative, and not just following routine.

RESOURCE

Liker, Jeffrey, and Meier, David, 2006. *The Toyota Way Fieldbook: A Practical Guide for Implementing Toyota's 4Ps*. New York, NY: McGraw-Hill.

This comprehensive guide to implementing lean represents one of the most practical and wide-ranging resources for students. In addition to providing strategies and tips for establishing standardized processes and procedures, the authors clarify why it matters.

Chapter Five

IT'S ALL ABOUT PEOPLE

DISCUSSION POINTS

Use the themes of this chapter to explore the role and actions of supervisors and line workers. One of the secrets of sustaining lean improvement is investing in enough management and technicians to resolve problems as they appear on the gemba, rather than simply listing them as priorities set by management in their offices. This investment in shop-floor leadership pays for itself in spectacular productivity gains. The primary question raised is:

Are supervisors truly involved with work standards and daily shop-floor improvement?

Examine this topic through questions such as: How much support do our front-line people really get? When a machine is stopped, or a defect appears, or a problem arises with a customer being served, do we see shop-floor management and/or technicians come running? Are operators ever left to fend for themselves with technical problems? Are supervisors focused on solving operators' problems rather than ordering them about? An interesting shop floor exercise for your supervisors is to ask them daily: "What have you done to help operators reach their targets today?"

Above all, simply having this discussion should raise and explore some fundamental questions about how well the team leaders are supporting the workers. The way in which individuals grapple with the questions should shed light

into how well they are being empowered to be problem solvers, and how well management works with the workers to identify and solve problems.

RESOURCE

Liker, Jeffrey. 2004. *The Toyota Way: 14 Management Principles from the World's Greatest Manufacturer*. New York, NY: McGraw-Hill.

An excellent, detailed book that combines a thorough reporting of Toyota's practices with an insightful codification of the company's practices.

Chapter Six

LEVEL TO PULL

DISCUSSION POINTS

As you explore the details of push and pull production, or even the finer nuances of Steve McAllister's "square, circles, and triangles" demonstration as a way of understanding the dual implications of reducing batch size and increasing internal delivery in order to reduce WIP, focus on the idea of creating level pull. Have all your discussions to date given you the ability to track products along the value stream, identifying waste and standardizing operations, so that you can now pace the production and ensure "pull"?

Does the work flow, and is it regulated by the pace of customer demand?

RESOURCE

Smalley, Art 2004. *Creating Level Pull: A Lean Production System Improvement Guide for Production Control, Operations, and Engineering Professionals*. Cambridge, MA: Lean Enterprise Institute

This excellent workbook works through the details of facility-wide pull systems in an instructive manner and clearly addresses the thorny issues of leveling in mix and volume.

Chapter Seven

KANBAN RULES

DISCUSSION POINTS

Is your team familiar with all the basics rules of kanban?

- The following process comes to withdraw from the preceding process.
- The preceding process only produces what has been withdrawn.
- Production or withdrawal only happens with corresponding kanban cards.
- No parts are allowed on the shop floor without a kanban attached to them.
- Zero defects in the parts delivered by the upstream process.

- Reduce the number of kanban over time.

Regardless of whether you work in an office or factory, the principles of kanban apply. Discuss each kanban rule with your team, and clarify its purpose. Talk about the broader purpose of kanban as an indicator of where the process is broken or suboptimal.

Can you draw out on paper a complete kanban loop with:

- Heijunka board
- Kanban posts
- Kanban waiting file

Are all members of your team clear on the difference between a production instruction kanban, and a withdrawal kanban? Can your kanban help standardize the flow of material and information throughout the plant or office?

Does your kanban reveal the sources of waste and the health of your processes? And how are you addressing the problems in topics such as delivery and flexibility?

RESOURCE

Harris, Rick, Chris Harris, and Earl Wilson. 2003. *Making Materials Flow: A Lean Material Handling Guide for Operations, Production Control, and Engineering Professionals*. Cambridge, MA: Lean Enterprise Institute, Inc.

This hands-on workbook teaches how to create continuous flow by supplying purchased parts to the value stream in an optimal manner.

Chapter Eight GEMBA ATTITUDE

DISCUSSION POINTS

This chapter addresses the practical details of your lean implementation effort, and should prod you to examine the reality of your initiative. Remember, the “just-do-it” nature of lean means you should be doing lean rather than simply discussing it. And as this chapter reveals, tackling and even resolving difficult challenges only exposes new ones. And so you must set aside time to continually examine the quality of its efforts. Ask yourself: are our lean improvement initiatives as robust as the processes we are improving? How much time do we really spend simply looking at operations? Do we walk the gemba at the very least once a day to look at production boards and check the response time from technicians to operator problems? Do we hold all meetings at the gemba, with the real people in front of the real parts?

Finally, how committed are we to these efforts? Once we’ve achieved progress, is everyone willing to press forward? At this point, the question for your group is more of a challenge:

What was the last lean experiment we ran on our gemba and what did we learn from it?

RESOURCE

Ohno, Taiichi. 1988. *Workplace Management*. Portland, OR: Productivity Press.

In this modest and accessible series of short pieces, Ohno shares the most personal perspective of Toyota management.

Chapter Nine

THE HEIJUNKA WAY

DISCUSSION POINTS

In recent years, much has been made of value-stream mapping as a first step to lean transformation. Oddly enough, this is a well-known Toyota tool which the senseis often introduce late in their supplier plants they help, fearing the tool could become a distraction from genchi gembutsu: go and see. So be sure that your maps are serving the right purpose of focusing your attention on the work itself. And at this point, it's important to see the whole of the work, to see how the elements of the system relate and support one another, and to see the extended value streams in the workplace.

The key question here addresses the systematic impact of your lean efforts. Armed with the tools and principles discussed to date, take a step back and assess how well the system works as a whole. Ask yourself:

How are the different elements of our lean system supporting or hindering each other? And how is this overall system helping us to improve customer satisfaction?

RESOURCE

Womack, James, and Daniel Jones. 2002. *Seeing the Whole: Mapping the Extended Value Stream*. Cambridge, MA: Lean Enterprise Institute, Inc.

Learning to see, and to map, value streams, represents a powerful step in identifying and removing waste. But there's always room for improvement.

Chapter Ten

KAIZEN FOREVER

DISCUSSION POINTS

After reading *The Gold Mine*, and discussing it with your team, ask if you are truly ready to seek out a sensei to help you in your transformation. Seeking a sensei is not an admission of defeat. On the contrary, as this appears in every serious lean conversion, it is the first sign of real commitment. Seeking a sensei helps you sort out true lean wisdom from mere drivel. And the process will naturally bring your team in contact with the lean community at large, which will have increasing returns as true Lean Thinkers are always eager to share their successes and pass on free

advice. So ask: who's your sensei? And more important, once you've established this, ask the most important question of all:

What's next?

RESOURCE

Womack, James, and Daniel Jones. 1996. *Lean Thinking: Banish Waste and Create Wealth in Your Organization*. New York: Simon & Schuster.

This fundamental resource, which popularized the principles of lean production to a broad audience, could just as easily serve as the first resource to consult for further learning. Yet the nature of lean's unending continuous improvement qualifies this book as an important ally at any point in a lean lesson.