

Kaizen Event Implementation Manual

Geoffrey Mika



Society of Manufacturing Engineers
Dearborn, Michigan

Copyright © 2006 Society of Manufacturing Engineers

987654321

All rights reserved, including those of translation. This book, or parts thereof, may not be reproduced by any means, including photocopying, recording or microfilming, or by any information storage and retrieval system, without permission in writing of the copyright owners.

No liability is assumed by the publisher with respect to use of information contained herein. While every precaution has been taken in the preparation of this book, the publisher assumes no responsibility for errors or omissions. Publication of any data in this book does not constitute a recommendation or endorsement of any patent, proprietary right, or product that may be involved.

Library of Congress Catalog Card Number: 2006928139

International Standard Book Number: 0-87263-849-9

Additional copies may be obtained by contacting:

Society of Manufacturing Engineers
Customer Service
One SME Drive, P.O. Box 930
Dearborn, Michigan 48121
1-800-733-4763
www.sme.org

SME staff who participated in producing this book:

Rosemary Csizmadia, Production Editor
Steve Bollinger, Manager, Book & Video Publications
Frank Bania, Cover Design
Frances Kania, Administrative Coordinator

Printed in the United States of America

Table of Contents

Preface	vii	Eight	After the Event	97
One				
The History of Lean	1	Nine	Kaizen in a One-piece Flow, Cellular Operation	103
Two				
Toyota Production System Training	11	Ten	Beyond Kaizen	115
Three				
Kaizen Worldwide	27	Appendix A	The Milestones of Lean	141
Four				
Introduction to Kaizen Events	31	Appendix B	Glossary of Lean Terms	151
Five				
Leading Kaizen Implementation	35	Appendix C	Team Exercise—Deluxe Elaborate Manufacturing Company (DEMCO)	169
Six				
Preparing for a Kaizen Event.....	43	Appendix D	Team Leader Checklists	211
Seven				
How to Lead a Team During the Event	61	Index		219

Preface

KAIZEN IS A BEGINNING

Kaizen is a tool, originally used by Toyota, to foster continuous improvement within its production system. It is now used around the world by many companies who have adapted it to suit their individual needs and customs.

The main goal of the *Kaizen Implementation Manual* is to bring a level of competence and understanding to kaizen event participants so they may be self-sufficient in the application and use of kaizen. Now in its fifth edition, this manual has seen use in many industries for wide-ranging applications. It is designed to help you understand, organize, plan, and implement your own kaizen event in any setting.

THE LEAN JOURNEY

The lean journey down the road to improvement is sometimes bumpy. Other times, it is a super-highway. It is a road that never ends. The journey is never dull or unchallenging. It is exciting, enlightening, and most of all, fun! Kaizen presents a chance to do things in ways that are new to many people. And, it is a chance for everyone to contribute, be recognized, and excel.

In the past, one complaint heard universally throughout companies was, “No one ever listens to me when I try to tell them how to fix something.” Or, “Management thinks we are all stupid. We are not smart enough to make good decisions.” Can it be any wonder that

workers are not too eager to submit improvement suggestions when they know their suggestions will never be implemented? Kaizen changes the paradigms of management. Leaders are responsible to solicit contributions and suggestions and implement them while enthusiasm is high and critics have not had time to object.

Organization, cleanliness, cooperation, communication, and training are all intangible assets, which are difficult to measure or quantify, but essential to the success of kaizen. Companies using the Toyota Production System understand it is everyone's job to make improvements on their jobs on a regular basis. Kaizen is a process that allows "good ideas" to become reality—ideas that team members submit as part of the continuous improvement process. With the new tools of lean, all answers come from within. Kaizen unlocks the talents and abilities of workers and allows decisions to be made at the lowest level in the organization, in the quickest time, by the people who know the situation best. The Toyota Production System forces workers to operate as teams, thus creating a synergy that is absent in most normal workplaces. This energy allows much

more to be accomplished as a team than as individual workers.

In the United States, kaizen usually refers to an event of from three to five days. It is comprised of intensive improvement activities directed at specific areas of a business. It may be called a "blitz," "five days and one night," "gemba kaizen," "blitz kaizen," "system kaizen," or "breakthrough kaizen." Whatever the name, it is a process based on improving quality, cost, and delivery by the elimination of waste (*muda*). Its main goals are the implementation of one-piece flow, working to takt time, and development of a pull system.

A kaizen event is a means to accelerate improvements that increase worker productivity, helping management find new ways to gain substantial savings in time, space, and labor output. Kaizen is never meant to be the method of getting rid of workers; instead it is a tool of growth. Focused on results, kaizen has been shown to collapse lead times, dramatically reduce work in process, and reduce scrap and defects while minimizing the need for capital expenditures. The results are real, proven, documented, and confirmed!

THE TOYOTA PRODUCTION SYSTEM

The Toyota Production System (TPS) is based on being *lean*. Its mantra is to manufacture only what is needed by the customer, when it is needed, and in the quantities ordered. The manufacture of these goods is done in a way that minimizes the time to deliver the finished goods, the amount of labor, and amount of floor space—while achieving the highest quality at the lowest cost. Time saved is the key measure of cost and efficiency in TPS. Kaizen seeks to minimize throughput time by eliminating non-value-added activities.

But TPS is more than just a new way to make things in a factory. It must be driven by a new way of thinking, which brings about cultural change. By thinking “lean,” everyone becomes involved in the elimination of waste, in all of its forms, at all levels, all the time. Workers are empowered to make changes and have a voice in the decision-making process. Flexibility, simplicity and the quest for constant improvement become the driving goals in the new lean operation.

TPS Tools

The Toyota Production System changes manufacturing from traditional, large batch, lot processing to product-based, one-at-a-time flow production. In undertaking this transformation, it is the guide by which lean manufacturing is achieved. The Toyota Production System uses many individual tools, including:

- kanban,
- jidoka,
- total quality management (TQM),
- total productive maintenance (TPM),
- single-minute exchange of dies (SMED),
- 5S (sort, shine, standardize, set in order, sustain)
- visual factory,
- cause-and-effect diagram with the addition of cards (CEDAC),
- hoshin kanri,
- andon,
- poka-yoke,
- 5 why analysis,
- the elimination of waste (muda), and

- constant teaching and training of the work force.

Kaizen uses these tools to model a new manufacturing process—one that is based on cells and just-in-time flow. Cells are representative of product families—parts that can be manufactured complete—as opposed to the traditional groupings of processes that manufacture many different products. The formation of cells creates mini factories-within-a-factory to make complete products.

The new shop floor cells use minimum in-process inventory and a pull system for inventory control. Thus most common problems are easily exposed. They are then fixed or minimized and improvements are immediately realized.

CHANGE

When it comes to dealing with change, each business is unique and so is each person. But change is a fact of life, and to gain acceptance, each situation must be adapted to the most suitable condition given the circumstances, which will bring about the best possible result. There is no substitute for common sense and prudent judgment in the implementation of kaizen. This manual

will point you in the right direction as you begin your journey.

**To order call
1-800-733-4763**

or visit

www.sme.org/store

and search on book title