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Quality Control

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Larry Webber
Quality control expert and Six Sigma Black Belt

Michael Wallace
Quality control and information systems expert

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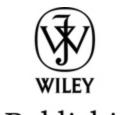
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Quality Control For Dummies

by Larry Webber and Michael Wallace

Quality Control For Dummies®

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About the Authors

Larry Webber is a certified Six Sigma Black Belt and holds a Masters of Project Management degree from West Carolina University. He has supported quality initiatives at multiple major manufacturers and in software development companies. He's currently a Project Manager and Six Sigma Black Belt working for Computer Science Corporation. Larry is also retired from the Army Reserve as an infantry First Sergeant, is a certified Master Business Continuity Planner and a certified Project Manager, and holds an MBA and BSBA from Rockhurst College. He can be reached at ljwljw88@hotmail.com.

Michael Wallace has more than 25 years of experience in the information systems field. He graduated magna cum laude from Wright State University with a bachelor of science degree in Management Science. Michael has worked as an application developer, a systems analyst, and a technical and business consultant and has assisted the state of Ohio in developing statewide IT policies. He's active in the local technical community, is President of the Columbus International Association of Microsoft Certified Partners (IAMCP), is a Competent Toastmaster with Toastmasters International, and graduated from the Executive MBA program at the Fisher College of Business at The Ohio State University. Michael is now the Vice President of Application Engineering at Result Data, which provides its clients with guidance on IT strategy, application development, business intelligence,

disaster-recovery planning, and policies and procedures. He's also an adjunct faculty member at The Ohio State University and at DeVry University's Keller Graduate School of Management, and he has published several articles and books on business and technology topics. He can be reached at michaelw@columbus.rr.com.

Larry and Michael have co-authored several books, including *The Disaster Recovery Handbook* (American Management Association, 2004). Here are their annually updated works:

IT Policies and Procedures, 2003–2007 editions (Aspen Publishing)

IS Project Management Handbook, 2004–2006 editions (Aspen Publishing)

Larry recently co-authored a book with his son, Fred, called *IT Project Management Essentials* (Aspen Publishing, 2007).

Dedication

Larry dedicates this book to his wife, Nancy, in honor of their upcoming 25th anniversary, and Michael dedicates the book to his wife, Tami, and his children, Phillip and Sarah, for their patience and support while this book was being created.

Authors' Acknowledgments

We would like to acknowledge the contributions of several people who made this book possible. First, Dennis Dreyer (www.DreyerSolutions.com) for his contribution of the chapter on Lean techniques, based on his many years of experience implementing supply-chain-management and logistics solutions at General Motors and at many other organizations. Thanks also to Larry's son, Fred Webber, for his assistance in researching several of the chapters, and to his daughter, Katrina Webber, for cleaning up his poor grammar and oversized words. We would also like to thank literary agent extraordinaire Marilyn Allen for all her help in getting this book off the ground, acquisitions editor Mike Lewis for sharpening the book's focus, and editors Georgette Beatty and Josh Dials for guiding us to a safe landing. Finally, we would like to thank Rob Bryant for his many fine-tuning points, which we borrowed heavily from in our chapters.

Publisher's Acknowledgments

We're proud of this book; please send us your comments through our Dummies online registration form located at www.dummies.com/register/.

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Contents

Introduction

Welcome to *Quality Control For Dummies,* the book that helps anyone unfamiliar with quality control find their way around a quality program. Quality improvement techniques have been around for a very long time. They apply to every type of endeavor — business (most likely why you're here), educational (the reason you may have taken those test-taking courses or joined study groups), and even personal (self-help books, anyone?). We all want to do things faster and for less cost while getting more desirable results. A company's quality system strives for the same goals: better, faster, and cheaper. With this book, you'll be able to understand the various and ever-changing quality initiatives underway or under discussion at your company.

About This Book

Most quality control books have a single theme: They push their own theory as the "one right way" to solve all of a company's problems. But this book isn't like that. It addresses every major quality improvement program and describes how to choose the applicable parts for a company.

The design of this book allows you to pick it up and begin reading at any point — much like a reference book — so

we suggest you start with a topic that interests you. You can use the table of contents to identify general areas of interest or broad topics. You'll come to find, however, that the index is your best friend for identifying detailed concepts, related topics, or particular quality issues. After you find what you need, you can toss the book on a shelf on your way out the door and tackle whatever tasks you set for yourself with confidence — and without wading through unrelated details.

Conventions Used in This Book

To guide you through this book, we include the following conventions:

- ✔ *Italics* point out defined terms and emphasize certain words.

- ✔ **Boldface** text indicates key words in bulleted lists and actions to take in numbered lists.

- ✔ `Monofont` highlights Web addresses.

During printing of this book, some Web addresses may have broken across two lines of text. If you come across a Web address spread over two lines, rest assured that we haven't put in any extra characters (such as hyphens) to indicate the break. Just type in exactly what you see, pretending as though the line break doesn't exist.

What You're Not to Read

You can safely skip any text that we mark with the Technical Stuff icon; the information is interesting, to be sure, but it's not essential to your understanding of quality issues. You can also skip sidebars (those shaded gray boxes within the chapters); we like the stories in them, but we won't be offended if you don't read them.

Foolish Assumptions

We don't think that anything in this book is foolish, but we *have* made the following assumptions about our readers:

➤ You're a business owner or CEO who needs to know more about quality and the right quality methods for your organization.

➤ You're a staff member or mid-level manager who's in charge of introducing quality methods to your organization.

➤ You're a team leader looking for ideas on improving how a team works to reduce costs and improve service.

➤ You're an average worker trying to figure out what all the funny names for the different quality techniques really mean.

How This Book Is Organized

This book is organized into the following five parts, each of which has several chapters. Each chapter discusses a major topic related to quality control, and we divide the chapters into sections, which discuss particular issues related to those topics. The book is organized to support both a linear and modular read, but how you read it is up to you. Choose a part, a chapter, or a related topic — whatever floats your boat — and start reading!

Part I: Understanding the Basics of Quality Control

Part I reviews the basic concept of "quality" and how it fits into an organization's products, services, and strategies. We provide an overview of what quality really means, why it's important in the modern business world, and the standards used to govern it. We also cover quality assurance, which examines the tools used to create a product or service, and inspection, which examines the results of a process to determine the degree to which it conforms to what it's supposed to be.

Part II: Putting Fundamental Quality Control Methods to Use

In Part II, we explore some fundamental processes for improving quality. For example, we explain how the customer defines quality with what's called the *voice of the customer.* We also explore ways to measure and evaluate quality characteristics, such as Statistical Process Control (not as scary as it sounds).

Part III: Whipping Quality Control into Shape with Lean Processes

Part III provides you with an explanation of the various Lean techniques in order to show how they build on one another. A *Lean organization* has examined all its processes and has squeezed out all the waste by cleaning up the workplace. Identifying waste and squeezing it out of your processes provides many savings, because a big money sink in many companies is an excess-materials inventory. Eliminating this bloat saves money and improves quality all around. Let us show you how!

Part IV: Surveying Other Quality Control Techniques

Part IV looks at some of the better-known quality methodologies that have been in fashion recently. Interestingly enough, the methods we outline here seem to use varying amounts of the Lean tools we identify in Part III — they just add their own spins on how to use them. And as you're probably aware, all "expert" consultants have their own spins on things because that's how they justify their fat salaries.

Part V: The Part of Tens

Part V follows in the grand tradition of *For Dummies* books providing Parts of Tens. Here you find ten steps for incorporating quality into a new process and ten Web sites that give you some quality control tips and present some quality techniques. This supplemental information is designed to be both helpful and informative.

Icons Used in This Book

The icons used in this book point you to important (and not so important) topics in the text:

Keep these facts in mind when making decisions about different aspects of the quality control process.

This icon signals that helpful advice is at hand. We use it to offer insights that we hope make quality control interesting or easier.

This icon means what it says and says what it means — you'd better be careful with the information that comes after. It warns you to avoid situations that can have nasty consequences for your organization.

This icon tips you off to interesting but nonessential information. Read it or skip it — the choice is yours.
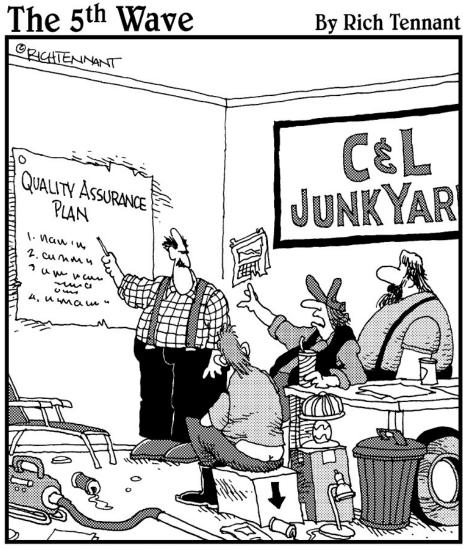
Where to Go from Here

Each chapter in this book can stand on its own and will provide you with unique, useful information. So, find a subject that interests you or that you need to bone up on, turn to the page, and be ready to learn! Feel free to mark up the book, fill in the blanks, copy any tables, dog-ear the pages, or do anything else that would make a librarian blush. The important thing is that you make good use of the book and enjoy yourself in the process.

If you're new to quality systems, we suggest that you read Parts I and II in their entirety. You'll find that many quality improvement techniques are built on previous models, and they all point back to the basics of quality control.

One last thing: Check out the Web page at www.dummies.com. Feel free to take the opportunity to register your purchase online or to send the authors e-mail with feedback about your reading experience.

Part I

Understanding the Basics of Quality Control

The 5th Wave — By Rich Tennant

"Okay, I'm getting confused. Can we define 'quality junk' again?"