GEMBA KAIZEN

A COMMONSENSE APPROACH TO A CONTINUOUS IMPROVEMENT STRATEGY

Masaaki Imai

GEMBAKAIZEN®

Praise for *Gemba Kaizen*

It's exciting to see an updated version of a classic book, *Gemba Kaizen*, which shares a wealth of new healthcare examples and case studies from around the world. A true *sensei* and master of *kaizen*, Mr. Imai shares sage and timeless advice on engaging all team members in process improvements and radical redesigns which are deeply meaningful to all stakeholders. The methods in this book will help you improve quality and safety, reduce waiting times, and improve the long-term financial position of your organization. Highly recommended!

—Mark Graban, author of *Lean Hospitals*
and co-author of *Healthcare Kaizen*

Every business faces the iron triangle of quality, cost, and delivery. Conventional thinking claims you cannot have all three. Not only does Mr. Imai turn that thinking on its head, but he shows you in *Gemba Kaizen* exactly how to do it.

—Matthew E. May, author of *The Elegant Solution*
and *The Laws of Subtraction*

Masaaki Imai has done it again. The second edition of his famous book *Gemba Kaizen* not only describes all the tools necessary for any type of business to implement a lean strategy but also includes a large number of excellent case studies. These show how *kaizen* can be used to improve hospitals, supermarkets, airport management, a bus line, and even software development. This is a must-read for the leadership of any business.

My first exposure to lean [the term hadn't been invented yet, we called it Just-in-Time or the Toyota Production System] was at the beginning of 1982, during my first General Manager job at the General Electric Company. We created a simple *kanban* system between one of my plants and one of my suppliers. We dropped raw material inventory from 40 days to 3 days and got a lot of unexpected side benefits in the areas of productivity, quality, freed up space, 5S improvements, etc. Professor Schoenburger later did a story on this where he said that this was the first real lean activity at The General Electric Company. In late 1985 I joined the Danaher Company as one of two Group Executives. One of my company presidents, George Koenigsaecker, and I began introducing lean to Danaher in 1986. One of

the things that really helped us improve our knowledge of lean at the time was Masaaki Imai's first book, *Kaizen*. This was the most definitive work on the subject and was a great help. Imai helped us even more in early 1987 when he ran a seminar in the Hartford, CT area [just down the street from Jake Brake]. Imai used a Japanese consulting firm, Shingijutsu, to help run his seminar and be responsible for the hands-on factory *kaizen* part of the week. The three principals of Shingijutsu all had spent years working for Taiichi Ohno, the father of the Toyota production system. Koenigsaecker and I agreed that getting Shingijutsu to help us at Danaher would be a home run for us and George worked diligently the rest of the week convincing them. We became their first, and for four years, *only* American client and our lean knowledge increased dramatically.

In 1991, I left Danaher to become CEO of The Wiremold Company, also in the area. I, of course, brought Shingijutsu along with me and by 1996 Masaaki Imai was back in my life as he included a chapter on Wiremold and what we had done in his new book, *Gemba Kaizen*. We have stayed in touch over the years and Imai has become a true leader in the lean movement throughout the world through his Kaizen institute. He clearly understands that lean is a strategy, not just "some manufacturing thing" and that it can apply to any business. He and I have discussed why is it so difficult for most business leaders to understand this and to embrace lean. Unfortunately there is no simple answer to this other than the fact that most people just don't like to change and implementing lean is massive change (everything has to change) if you are to be successful. This latest edition of *Gemba Kaizen* goes a long way to helping to solve this problem. First of all, it lays out the lean philosophy and tools in a very simple way so that executives should not only understand them but more importantly, not be afraid to try them. More importantly however, Imai makes the case that lean is a *strategy* and that it can be applied to any business. His case studies of non-manufacturing companies where lean has had a dramatic impact really help to make the point. Every leader of any type of organization should read this book and follow what it says.

—Art Byrne, Operating Partner at J W Childs Associates, LP
and author of *The Lean Turnaround*

Gemba Kaizen

About the Author

More than any other business authority in the world, **Masaaki Imai** has championed the concept of *kaizen* over the past three decades in thought, word, and action. Mr. Imai is considered one of the leaders of the quality movement and a pioneer of modern business operational excellence. Mr. Imai is an international lecturer, consultant, and founder of the Kaizen Institute, a leading continuous improvement consultancy with offices worldwide. Mr. Imai's first book, *Kaizen*—translated into 14 languages—is the reference on the subject. *Gemba Kaizen* picks up where *Kaizen* left off, introducing real-world application of continuous process improvement methods in production and service businesses. The second edition is fully revised with brand-new case studies, updated chapters, and current references. In 2010 Mr. Imai was honored for his lifetime of achievement with the first ever Fellowship of the Quality Council of India, the apex quality body of the government of India.

Gemba Kaizen

A Commonsense Approach to a
Continuous Improvement Strategy

Masaaki Imai

Second Edition

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PREFACE

My two books, *Kaizen: The Key to Japan's Competitive Success* (McGraw-Hill, 1986) and *Gemba Kaizen: A Commonsense, Low-Cost Approach to Management* (McGraw-Hill, 1997) laid the foundation for exploration of *kaizen* as both a personal philosophy and business improvement system for people outside of Japan. Initially grasped as a set of methods such as total quality control, total productive maintenance, just-in-time management, quality circles, and suggestion systems, the West is ever closer to understanding *kaizen* for what it truly is: a strategy to win by developing people into problem solvers.

The second edition of *Gemba Kaizen* reveals how *kaizen* has spread to every continent and culture, met with various unique challenges and demonstrated its success. *Gemba* means "actual place" or "workplace" in Japanese, and this book gives you a look into more than thirty actual places where *kaizen* was successfully made a part of the culture. The book explains how to use a commonsense, low-cost approach to managing the workplace—the place where value is added—whether that place be the production line, hospital, government department, shopping center, airport, or engineering firm. This is not a book of theory, but a book of action. Its ultimate message is that no matter how much knowledge the reader may gain, it is of no use if it is not put into practice daily. *Gemba Kaizen* provides not more theoretical knowledge, but a simple frame of reference to use in solving problems. To that purpose, it provides many checklists, examples, and case studies.

The Commonsense, Low-Cost Approach to a Continuous Improvement Strategy

Today's managers often try to apply sophisticated tools and technologies to deal with problems that can be solved with a commonsense, low-cost approach. They need to unlearn the habit of trying ever more sophisticated technologies to solve everyday problems. Furthermore, leaders must

embrace *kaizen* and business excellence not as a tool or technique but as a never-finished pillar of their strategy.

Putting common sense into practice is the subject of this book. It is for everybody: managers, engineers, supervisors, and rank and file employees. Along with putting common sense into practice, *Gemba Kaizen* deals with the roles of managers and the need to develop a learning organization. I believe that one of the roles of top management should be to challenge all managers to attain ever higher goals. In turn, first-line supervisors need to challenge workers to do a better job all the time. Unfortunately, many managers today have long ceased to play such a role.

Another problem besetting most companies today is the tendency to place too much emphasis on *teaching* knowledge, while disregarding group *learning* of fundamental values derived from common sense, self-discipline, order, and economy. Good management should strive to lead the company to learn these values while achieving "lean management."

There are two approaches to problem solving. The first involves innovation—applying the latest high-cost technology, such as state-of-the-art computers and other tools, and investing a great deal of money. The second uses commonsense tools, checklists, and techniques that do not cost much money. This approach is called *kaizen*. *Kaizen* involves *everybody*—starting with the CEO in the organization—planning and working together for success. This book will show how *kaizen* can achieve significant improvement as an essential building block that prepares the company for truly rewarding accomplishments.

Back to Basics: Housekeeping, *Muda* Elimination, and Standardization

During the past 27 years since *Kaizen* was first published, many have looked for and asked "what is next?" but many times they are overlooking what is directly in front of them. We must go back to the basics and ask how well we have kept a steady, long-term focus on *kaizen*. Everyone in the company must work together to follow three ground rules for practicing *kaizen* in the *gemba*:

▲ Housekeeping
▲ *Muda* elimination

▲ Standardization

Housekeeping is an indispensable ingredient of good management. Through good housekeeping, employees acquire and practice self-discipline. Employees without self-discipline make it impossible to provide products or services of good quality to the customer.

In Japanese, the word *muda* means waste. Any activity that does not add value is *muda*. People in the *gemba* either add value or do not add value. This is also true for other resources, such as machines and materials. Suppose a company's employees are adding nine parts *muda* for every one part value. Their productivity can be doubled by reducing *muda* to eight parts and increasing the added value to two parts. *Muda* elimination can be the most cost-effective way to improve productivity and reduce operating costs. *Kaizen* emphasizes the elimination of *muda* in the *gemba* rather than the increasing of investment in the hope of adding value.

A simple example illustrates the cost benefits of *kaizen*. Suppose that operators assembling a household appliance are standing in front of their workstations to put certain parts into the main unit. The parts for assembly are kept in a large container behind the operators. The action of turning around to pick up a part takes an operator five seconds, while actual assembly time is only two seconds.

Now let's assume the parts are placed in front of the operator. The operator simply extends his or her arms forward to pick up a part—an action that takes only a second. The operators can use the time saved to concentrate on the (value-adding) assembly. A simple change in the location of the parts—eliminating the *muda* involved in the action of reaching behind—has yielded a four-second time gain that translates into a threefold increase in productivity!

Such small improvements in many processes gradually accumulate, leading to significant quality improvement, cost benefits, and productivity improvements. Applying such an approach throughout all management activities, especially at top management levels, gradually achieves a just-in-time, lean management system by teaching people the skills to see their work in a new way and by teaching them the skills to change how they work. By contrast, management primarily focused on innovation and breakthroughs might be inclined to buy software, equipment or capabilities that would enable the organization to perform their work much faster. But this would not eliminate the *muda* inherent in the current system. Furthermore,

investing in the new device or capability costs money, while eliminating *muda* costs nothing. We must innovate, but on a foundation of *kaizen*. The case study from Densho Engineering and others in this book reveal how this is done.

The third ground rule of *kaizen* practices in the *gemba* is standardization. Standards may be defined as the best way to do the job. For products or services created as a result of a series of processes, a certain standard must be maintained at each process in order to assure quality. Maintaining standards is a way of assuring quality at each process and preventing the recurrence of errors.

As a general rule of thumb, introducing good housekeeping in the *gemba* reduces the failure rate by 50 percent, and standardization further reduces the failure rate by 50 percent of the new figure. Yet many managers elect to introduce statistical process control and control charts in the *gemba* without making efforts to clean house, eliminate *muda*, or standardize.

Supporting these rules of *kaizen* is the foundation of the house of *gemba*—namely, the use of such human-centered activities as learning together, teamwork, morale enhancement, self-discipline, quality circles, and suggestions. These are all methods not only for generating improvements in safety, quality and cost, but positive means to *kaizen* and develop our people.

Management (especially Western management) must regain the power of common sense and start applying it in the *gemba*. These low-cost practices will provide management with the opportunity for a future phase of rapid growth via innovation—something Western management excels at. When Western management combines *kaizen* with its innovative ingenuity, it will greatly improve its competitive strength.

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ABOUT KAIZEN INSTITUTE

Founded by Masaaki Imai in 1985, Kaizen Institute is the pioneer and global leader in promoting the spirit and practice of *kaizen*. Its global team of professionals is dedicated to building a world where it is possible for everyone, everywhere, every day is able to "*kaizen* it."

Kaizen Institute guides organizations (public and private) to achieve higher levels of performance in the global marketplace—easier, faster, better, and with lower costs. Kaizen Institute experts challenge clients to help develop leaders capable of sustaining continuous improvement in all aspects of their enterprise, which ultimately leads into Kaizen Institute's vision of a worldwide community of practice in *kaizen*.

Major services of Kaizen Institute, include, but are not limited to:

▲ Consulting and Implementation
  ▼ Partnering with clients for long-term *kaizen* implementation
  ▼ Operating system design and deployment
  ▼ Breakthrough projects and turnarounds
▲ Education, Training, and Events
  ▼ Business training, academic, and online training curriculum design
  ▼ Kaizen practitioner, coach, and manager level certification
  ▼ On/off-site training, workshops, seminars, corporate events, and leadership sessions
▲ Tours and Benchmarking
  ▼ "Kaikaku" benchmark to best-in-class organizations in Japan and around the world
  ▼ Building peer-to-peer learning and tour exchange network

Visit www.kaizen.com to learn more about *kaizen* and the world-changing purpose of Kaizen Institute.

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An Introduction to *Kaizen*

Since 1986 when the book *Kaizen: The Key to Japan's Competitive Success* was published, the term *kaizen* has come to be accepted as one of the key concepts of management. In the first decade of the twenty-first century as the Toyota Motor Company surpassed General Motors to become the top automotive manufacturer in the world, awareness of the vital difference played by *kaizen* in Toyota's success also increased.

Today, organizations worldwide from manufacturers, to hospitals, to banks, to software developers, to governments are making a difference by adopting *kaizen* philosophies, mind-sets, and methodologies. Even though the names of these strategies may change over the decades from continuous quality improvement and total quality management, to just-in-time and operational excellence, to six sigma and lean manufacturing, the most successful of these strategies are customer-focused, *gemba*-oriented, and *kaizen*-driven.

The 1993 edition of the *New Shorter Oxford English Dictionary* recognized the word *kaizen** as an English word. The dictionary defines *kaizen* as "continuous improvement of working practices, personal efficiency, etc., as a business philosophy." Readers who are unfamiliar with *kaizen* may find it helpful to begin with a brief summary of the concepts of *kaizen*. For those who are already familiar with *kaizen*, this chapter may serve as a review.

In Japanese, *kaizen* means "continuous improvement." The word implies improvement that involves everyone—both managers and workers—and entails relatively little expense. The *kaizen* philosophy assumes that our way

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of life—be it our working life, our social life, or our home life—should focus on constant improvement efforts. This concept is so natural and obvious to many Japanese that they don't even realize they possess it! In my opinion, *kaizen* has contributed greatly to Japan's competitive success.

Although improvements under *kaizen* are small and incremental, the *kaizen* process brings about dramatic results over time. The *kaizen* concept explains why companies cannot remain static for long in Japan. Western management, meanwhile, worships innovation: major changes in the wake of technological breakthroughs and the latest management concepts or production techniques. Innovation is dramatic, a real attention-getter. *Kaizen*, on the other hand, is often undramatic and subtle. But innovation is one-shot, and its results are often problematic, whereas the *kaizen* process, based on commonsense and low-cost approaches, ensures incremental progress that pays off in the long run. *Kaizen* is also a low-risk approach. Managers always can go back to the old way without incurring large costs.

Most "uniquely Japanese" management practices, such as total quality control (TQC) or companywide quality control and quality circles, and our style of labor relations can be reduced to one word: *kaizen*. Using the term *kaizen* in place of such buzzwords as *productivity*, *total quality control* (TQC), *zero defects* (ZDs), *just-in-time* (JIT), and the *suggestion system* paints a clearer picture of what has been going on in Japanese industry. *Kaizen* is an umbrella concept for all these practices. However, I hasten to add that these practices are not necessarily confined to Japanese management but rather should be regarded as sound principles to be applied by managers everywhere. By following the right steps and applying the processes properly, any company, no matter what its nationality, can benefit from *kaizen*. The widespread acceptance of *kaizen* into management thinking, including the successes of Kaizen Institute clients in more than 50 countries, bears this out.

Major *Kaizen* Concepts

Management must learn to implement certain basic concepts and systems in order to realize *kaizen* strategy:

- ▲ *Kaizen* and management
- ▲ Process versus result

▲ Following the plan-do-check-act (PDCA)/standardize-do-check-act (SDCA) cycles
▲ Putting quality first
▲ Speak with data.
▲ The next process is the customer.

By way of introduction, top management must put forth a very careful and very clear policy statement. It then must establish an implementation schedule and demonstrate leadership by practicing a *kaizen* procedure within its own ranks.

Kaizen *and Management*

In the context of *kaizen*, management has two major functions: maintenance and improvement (see Figure 1.1). *Maintenance* refers to activities directed toward maintaining current technological, managerial, and operating standards and upholding such standards through training and discipline. Under its maintenance function, management performs its assigned tasks so that everybody can follow standard operating procedures (SOPs). *Improvement*, meanwhile, refers to activities directed toward elevating current standards. The Japanese view of management thus boils down to one precept: Maintain and improve standards.

As Figure 1.2 shows, improvement can be classified as either *kaizen* or innovation. *Kaizen* signifies small improvements as a result of ongoing efforts. Innovation involves a drastic improvement as a result of a large investment of resources in new technology or equipment. (Whenever money is a key factor, innovation is expensive.) Because of their fascination
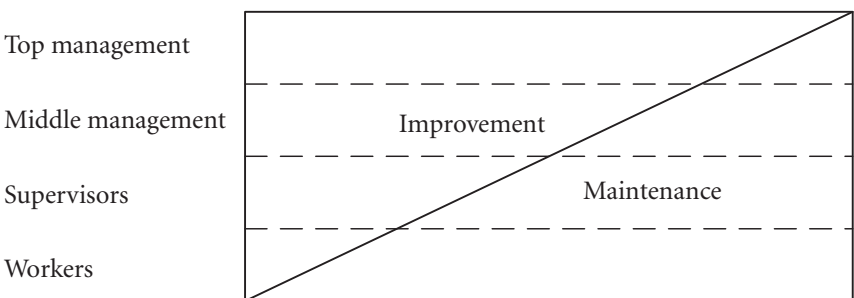
Figure 1.1   Japanese perceptions of job functions.
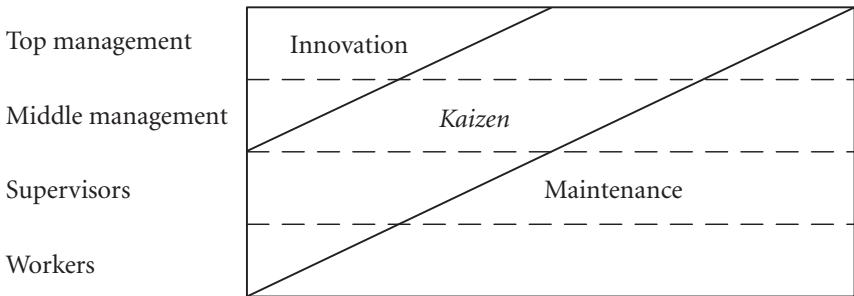
Figure 1.2   Improvement broken down into innovation and *kaizen*.

with innovation, Western managers tend to be impatient and overlook the long-term benefits *kaizen* can bring to a company. *Kaizen,* on the other hand, emphasizes human efforts, morale, communication, training, teamwork, involvement, and self-discipline—a commonsense, low-cost approach to improvement.

Process versus Result

Kaizen fosters process-oriented thinking because processes must be improved for results to improve. Failure to achieve planned results indicates a failure in the process. Management must identify and correct such process-based errors. *Kaizen* focuses on human efforts—an orientation that contrasts sharply with the results-based thinking in the West.

A process-oriented approach also should be applied in the introduction of the various *kaizen* strategies: the plan-do-check-act (PDCA) cycle; the standardize-do-check-act (SDCA) cycle; quality, cost, and delivery (QCD); total quality management (TQM); just-in-time (JIT); and total productive maintenance (TPM). *Kaizen* strategies have failed many companies simply because they ignored process. The most crucial element in the *kaizen* process is the commitment and involvement of top management. It must be demonstrated immediately and consistently to ensure success in the *kaizen* process.

Following the PDCA/SDCA Cycles

The first step in the *kaizen* process establishes the *plan-do-check-act (PDCA) cycle* as a vehicle that ensures the continuity of *kaizen* in pursuing a policy
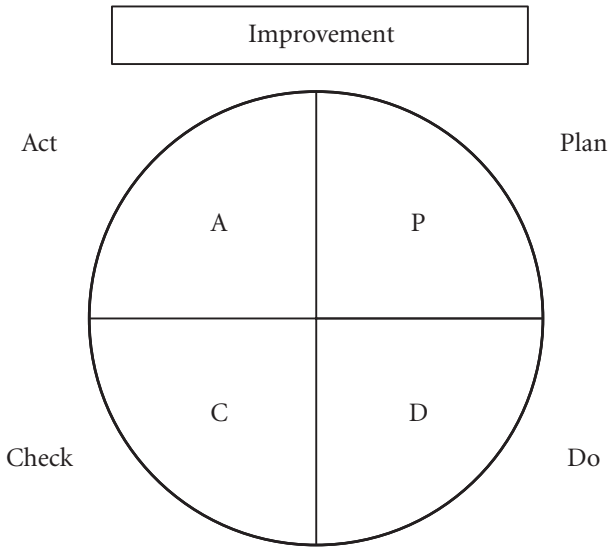
Figure 1.3 The plan-do-check-act (PDCA) cycle.

of maintaining and improving standards. It is one of the most important concepts of the process (see Figure 1.3).

Plan refers to establishing a target for improvement (since *kaizen* is a way of life, there always should be a target for improvement in any area) and devising action plans to achieve that target. *Do* refers to implementing the plan. *Check* refers to determining whether the implementation remains on track and has brought about the planned improvement. *Act* refers to performing and standardizing the new procedures to prevent recurrence of the original problem or to set goals for the new improvements. The PDCA cycle revolves continuously; no sooner is an improvement made than the resulting status quo becomes the target for further improvement. PDCA means never being satisfied with the status quo. Because employees prefer the status quo and frequently do not have initiative to improve conditions, management must initiate PDCA by establishing continuously challenging goals.

In the beginning, any new work process is unstable. Before one starts working on PDCA, any current process must be stabilized in a process often referred to as the *standardize-do-check-act (SDCA) cycle* (see Figure 1.4).

Every time an abnormality occurs in the current process, the following questions must be asked: Did it happen because we did not have a standard?
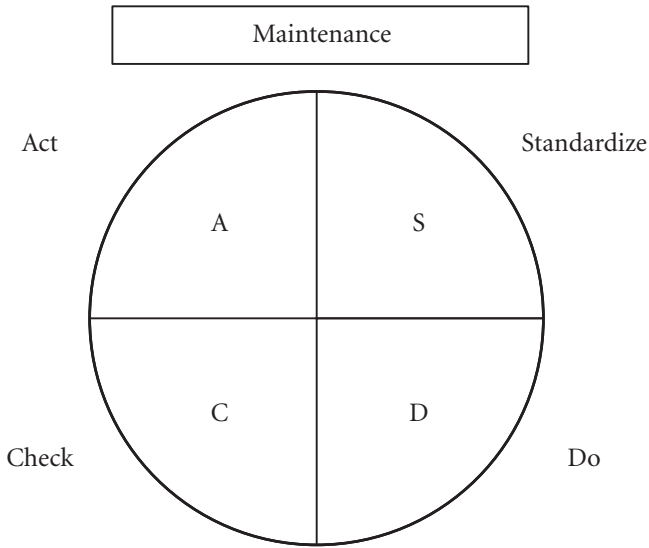
Figure 1.4   The standardize-do-check-act (SDCA) cycle.

Did it happen because the standard was not followed? Or did it happen because the standard was not adequate? Only after a standard has been established and followed, stabilizing the current process, should one move on to the PDCA cycle.

Thus the SDCA cycle standardizes and stabilizes the current processes, whereas the PDCA cycle improves them. SDCA refers to maintenance, and PDCA refers to improvement; these become the two major responsibilities of management.

Putting Quality First

Of the primary goals of quality, cost, and delivery (QCD), quality always should have the highest priority. No matter how attractive the price and delivery terms offered to a customer, the company will not be able to compete if the product or service lacks quality. Practicing a quality-first credo requires management commitment because managers often face the temptation to make compromises in meeting delivery requirements or cutting costs. In so doing, they risk sacrificing not only quality but also the life of the business.

Speak with Data

Kaizen is a problem-solving process. In order for a problem to be correctly understood and solved, the problem must be recognized and the relevant data gathered and analyzed. Trying to solve a problem without hard data is akin to resorting to hunches and feelings—not a very scientific or objective approach. Collecting data on the current status helps you to understand where you are now focusing; this serves as a starting point for improvement. Collecting, verifying, and analyzing data for improvement is a theme that recurs throughout this book.

The Next Process Is the Customer

All work is a series of processes, and each process has its supplier as well as its customer. A material or a piece of information provided by process A (supplier) is worked on and improved in process B and then sent on to process C. The next process always should be regarded as a customer. The axiom "the next process is the customer" refers to two types of customers: internal (within the company) and external (out in the market).

Most people working in an organization deal with internal customers. This realization should lead to a commitment never to pass on defective parts or inaccurate pieces of information to those in the next process. When everybody in the organization practices this axiom, the external customer in the market receives a high-quality product or service as a result. A real quality-assurance system means that everybody in the organization subscribes to and practices this axiom.

Major *Kaizen* Systems

The following are major systems that should be in place in order to successfully achieve a *kaizen* strategy:

▲ Total quality control (TQC)/total quality management (TQM)
▲ A just-in-time (JIT) production system (Toyota Production System)
▲ Total productive maintenance (TPM)
▲ Policy deployment
▲ A suggestion system
▲ Small-group activities

Total Quality Control/Total Quality Management

One of the principles of Japanese management has been total quality control (TQC), which, in its early development, emphasized control of the quality process. This has evolved into a system encompassing all aspects of management and is now referred to as *total quality management* (TQM), a term used internationally.

Regarding the TQC/TQM movement as a part of *kaizen* strategy gives us a clearer understanding of the Japanese approach. Japanese TQC/TQM should not be regarded strictly as a quality-control activity; TQC/TQM has been developed as a *strategy* to aid management in becoming more competitive and profitable by helping it to improve in all aspects of business. In TQC/TQM, *Q*, meaning "quality," has priority, but there are other goals, too—namely, cost and delivery.

The *T* in TQC/TQM signifies "total," meaning that it involves everybody in the organization, from top management through middle managers, supervisors, and shop-floor workers. It further extends to suppliers, dealers, and wholesalers. The *T* also refers to top management's leadership and performance—so essential for successful implementation of TQC/TQM.

The *C* refers to "control" or "process control." In TQC/TQM, key processes must be identified, controlled, and improved on continuously in order to improve results. Management's role in TQC/TQM is to set up a plan to check the process against the result in order to improve the process, not to criticize the process on the basis of the result.

TQC/TQM in Japan encompasses such activities as policy deployment, building quality-assurance systems, standardization, training and education, cost management, and quality circles.

The Just-in-Time Production System

Originating at Toyota Motor Company under the leadership of Taiichi Ohno, the just-in-time (JIT) production system aims at eliminating non-value-adding activities of all kinds and achieving a lean production system that is flexible enough to accommodate fluctuations in customer orders. This production system is supported by such concepts as *takt* time (the time it takes to produce one unit) versus cycle time, one-piece flow, pull production, *jidoka* ("autonomation"), U-shaped cells, and setup reduction.

To realize the ideal JIT production system, a series of *kaizen* activities must be carried out continuously to eliminate non-value-adding work in *gemba*. JIT dramatically reduces cost, delivers the product in time, and greatly enhances company profits.

Total Productive Maintenance

An increasing number of manufacturing companies now practice *total productive maintenance* (TPM) within as well as outside of Japan. Whereas TQM emphasizes improving overall management performance and quality, TPM focuses on improving equipment quality. TPM seeks to maximize equipment efficiency through a total system of preventive maintenance spanning the lifetime of the equipment.

Just as TQM involves everybody in the company, TPM involves everybody at the plant. The five S of housekeeping (discussed in Chapter 5), another pivotal activity in *gemba*, may be regarded as a prelude to TPM. However, 5S activities have registered remarkable achievements in many cases even when carried out separately from TPM.

Policy Deployment

Although *kaizen* strategy aims at making improvements, its impact may be limited if everybody is engaged in *kaizen* for *kaizen*'s sake without any aim. Management should establish clear targets to guide everyone and make certain to provide leadership for all *kaizen* activities directed toward achieving the targets. Real *kaizen* strategy at work requires closely supervised implementation. This process is called Policy Deployment, or in Japanese, *hoshin kanri*.

First, top management must devise a long-term strategy, broken down into medium-term and annual strategies. Top management must have a plan-to-deploy strategy, passing it down through subsequent levels of management until it reaches the shop floor. As the strategy cascades down to the lower echelons, the plan should include increasingly specific action plans and activities. For instance, a policy statement along the lines of "We must reduce our cost by 10 percent to stay competitive" may be translated on the shop floor to such activities as increasing productivity, reducing inventory and rejects, and improving line configurations.

Kaizen without a target would resemble a trip without a destination. *Kaizen* is most effective when everybody works to achieve a target, and management should set that target.

The Suggestion System

The *suggestion system* functions as an integral part of individual-oriented *kaizen* and emphasizes the morale-boosting benefits of positive employee participation. Japanese managers see its primary role as that of sparking employee interest in *kaizen* by encouraging them to provide many suggestions, no matter how small. Japanese employees are often encouraged to discuss their suggestions verbally with supervisors and put them into action right away, even before submitting suggestion forms. They do not expect to reap great economic benefits from each suggestion. Developing *kaizen*-minded and self-disciplined employees is the primary goal. This outlook contrasts sharply with that of Western management's emphasis on the economic benefits and financial incentives of suggestion systems.

Small-Group Activities

A *kaizen* strategy includes *small-group activities*—informal, voluntary, intracompany groups organized to carry out specific tasks in a workshop environment. The most popular type of small-group activity is *quality circles.* Designed to address not only quality issues but also such issues as cost, safety, and productivity, quality circles may be regarded as group-oriented *kaizen* activities. Quality circles have played an important part in improving product quality and productivity in Japan. However, their role often has been blown out of proportion by overseas observers, who believe that these groups are the mainstay of quality activities in Japan. Management plays a leading role in realizing quality—in ways that include building quality-assurance systems, providing employee training, establishing and deploying policies, and building cross-functional systems for QCD. Successful quality-circle activities indicate that management plays an invisible but vital role in supporting such activities.

The Ultimate Goal of *Kaizen* Strategy

Since *kaizen* deals with improvement, we must know which aspects of business activities need to be improved most. And the answer to this question is quality, cost, and delivery (QCD). My previous book, *Kaizen: The Key to Japan's Competitive Success*, used the term *quality*, *cost*, and *scheduling* (QCS). Since that time, QCD has replaced QCS as the commonly accepted terminology.

Quality refers not only to the quality of finished products or services but also to the quality of the processes that go into those products or services. *Cost* refers to the overall cost of designing, producing, selling, and servicing the product or service. *Delivery* means delivering the requested volume on time. When the three conditions defined by the term QCD are met, customers are satisfied.

QCD activities bridge such functional and departmental lines as research and development, engineering, production, sales, and after-sales service. Therefore, cross-functional collaborations are necessary, as are collaborations with suppliers and dealers. It is top management's responsibility to review the current position of the company's QCD in the marketplace and to establish priorities for its QCD improvement policy.

Following the chapters of this book, I have assembled a number of cases that illustrate how various companies from both manufacturing and service sectors have implemented the concepts and systems of *gemba kaizen*.

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