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Chapter 1
The New System Works

Does your organization judge its product or service quality by the day's rejection rates? Does it foster competition between its groups and individuals? Does it choose the supplier that makes the lowest bid? Does it mainly focus on the quality of its products? Is it confident that its waste amounts to no more than 5 to 10 percent of sales? Although these practices and attitudes have long been accepted in 20th-century Western corporations, they will not be part of most corporations in the 21st century.

Only high-quality organizations doing high-quality work can inevitably survive global competition, but Western management is just beginning to realize that the science of eliminating waste is linked to the creation of consistent quality at low cost. People tend to attack waste haphazardly, when they trip over it. And because they trip over relatively little waste, they imagine that there is very little in their organizations. But we have found that 30 to 40 percent of the work in most organizations is wasted. Most of the waste is hidden in work processes where it is difficult to find unless the organization methodically searches for it, using the kinds of methods that this book discusses. In particular, it is often in the work processes of the Senior Management Team.

This book is different from many others about quality because our obsession with eliminating waste leads us to focus not on quality products--which any company can make if it is willing to discard or rework a lot of inferior products--but on quality processes. We will show you how to find the waste in your organization, determine which processes need the most immediate attention, and improve those processes to eliminate waste, lower costs, AND deliver high consistent quality products and services that please customers. Rather than prescribe a method for infusing quality into one particular area of business, this book offers an entire system--connecting external and internal customers and suppliers, the boardroom, the office, the research and development lab, and the factory--as well as the tools to analyze and improve that system.

QUALITY

The two halves of this book's title—*The Quality Secret and The Right Way To Manage*—summarize both our goal and our method for reaching that goal. The purpose of the system of management we advocate is to satisfy and please customers by creating low cost goods and services of consistent high quality. And the secret to producing high quality products and services is a management approach that emphasizes the continuous improvement of work processes through the elimination of waste.

Quality is no longer just an overused marketing buzzword or a goal to mention once a year at board meetings. Quality is SURVIVAL. Your organization will not last long if it does not use high quality processes to produce high quality products and services. A growing number of organizations around the world--your competitors--have already joined the quality revolution. But many organizations have been slow to see the light. The next ten to twenty years will reveal whether their delay will prove damaging or even fatal.

The popular press has been swamped with buzzwords about quality: quality assurance, quality control, quality management, quality function deployment. This profusion indicates a lot of confusion as to just what QUALITY means. Most of us instinctively recognize a high quality product or service. It meets our functional and aesthetic needs in a superior manner. But we have more difficulty trying to apply the word to an organization. How does an organization produce high quality

Section II
Using The Tools and Applying The Concepts

Organizations get rid of the waste in their work processes by applying the concepts introduced in the last section and using the tools of The Right Way To Manage, including work analysis, variation, charting, and imagineering. Imagineering comes last in the sequence, even though it is the most important tool, because work analysis and charting provide the facts upon which to base imagineering.

This section explains how to apply the concepts discussed in Chapter 2, introduces the tools, and then puts the tools to work in the war against waste. Chapter 9, the last in this section, presents a process improvement methodology, an approach that draws upon everything else in the section.

and it is measured in terms of the time it takes, what it costs, and the quality of the work product. To measure the time taken, the organization breaks down the work into tasks and sub-tasks. To measure quality, the organization picks a method appropriate for the task being measured. Calculating percentage of errors is a good method for many clerical operations. It takes ingenuity to find the best quality measure for types of work that do not have error rates, rejection rates, or the like.

To analyze work, divide it into the six categories shown in the pie chart. Obviously, the objective is to eliminate the unnecessary work and unauthorized non-working time, minimize the time spent on purely necessary work, and improve the quality of value added work by reducing waste during the time spent on it. Since much "necessary" work that does not add value gets performed for internal customers—people or groups within the same organization—analyze closely whether the internal customer really needs something from the point of view of the whole company and the external customer. Consider what things the company really pays employees to do.

Figure 3-1 lists examples of the six categories of work:

***Value Added Work** (This is the only kind of work our customers pay us to do!)*

- Working on the right things
- Doing the right things right
- Doing the right things right most of the time
- Working at the right pace

Necessary Work

- Filling out expense reports
- Approving expense reports
- Traveling between plants
- Filing tax returns
- Taking physical inventory

Unnecessary Work (Rework)

- Making errors
- Finding errors
- Fixing errors
- Complexities
- Interruptions
- Inspection
- Customer complaints
- Redesign, etc.

Unnecessary Work (All Other)

- Preparation of reports that no one uses
- Tasks that are part of system but no one wants/needs
- Reading reports or attending meetings of no value to you
- Working on the wrong things

Not Working

- Waiting time
- Idle time
- Breaks
- Holidays
- Vacations
- Personal time
- Arrive late
- Leave early

Figure 3-1

Surveying The Experts

To find out what the experts know about the problems, survey them. Sit down with each one and talk. You can find out a great deal about problems in a process without getting into a gripe session. Have certain questions prepared but also encourage a general discussion. Or use a written survey.

Besides designing the survey to find out what you want, you need to

1. Explain the purpose of the survey,
2. Tell what you plan to do as the result of the survey,
3. Give the results to the people surveyed,
4. Do what you said you were going to do in Item 2.

Sticking with those four elements may make the survey difficult to design, but if you ignore them, your survey may be inaccurate and may damage your relationship with the people.

If you are not prepared to do something with the results of a survey, it is obviously a waste of time. And if you want people's thoughtful cooperation, they must know what you are trying to do, and that you plan to take action based on the results. That doesn't mean you have to take every suggestion, but you should be prepared to explain to people what you can and cannot do, when, and why. If nothing comes out of a survey, not even any communication, you will have lost people's cooperation. Therefore, limit your initial objectives. People will understand that you can't work on everything at once. In surveying the experts, your main goal is to find problems, complexities, errors, and unexploited opportunities.

A survey with limited objectives helped determine the cause of erratic swings in yield in a "clean room" coating process for computer memory discs. People suspected dirt or contamination but couldn't find the source. A survey of all people working in the area resulted in many suggestions but little progress. But people kept working together, and finally a janitor

Process Improvement Methodology

Conway Process Improvement Methodology

1. Search for opportunities; decide what to work on.
2. Clearly define the project. Select the improvement team.
3. Study the current process/situation.
4. Analyze causes; plan the improvement.
5. Carry out the improvement plan.
6. Study the effect of the changes.
7. Standardize the improved process.
8. Assess progress and plan for the future.

Figure 9-1

1. Search For Opportunities; Decide What To Work On.

The objectives of this step are to identify the waste; identify the problem. Gather information in the ways discussed in Chapters 3, 4, 5, and 8: 1) collect data, 2) survey customers, suppliers, and the people doing the work, and 3) study the work and the work processes. Use Pareto thinking to decide what to work on and clearly define the problem. The more specific you can be, the better.

2. Clearly Define The Project; Select The Improvement Team

The objectives of Step 2 are to clearly communicate the problem, objective, scope and constraints of the project; identify key performance measures; and select appropriate team members and help them get started. Assign the waste/opportunity a monetary value, even if it is only an estimate, to help set priorities and to measure progress. Remember, waste includes wasted opportunities.

Identifying the key performance measures is critical and sometime difficult, although it can be simple for straightforward operations. For preparation of invoices, for instance, the number of invoices prepared per hour and the number of errors per hundred invoices are obvious measures of performance. Less obvious factors may affect the process in more complex operations. For example, the ambient temperature and humidity may have a profound effect on some manufacturing processes. But you won't know for sure until you perform some experiments. Try to isolate the key factors that correlate with process performance. If you are specific in Step 2, you will have an easier time establishing what to measure. Check with appropriate customers of the process—"do we have the right problem/ measure?"

These factors need to be measurable, preferably on a real-time basis, so that corrective action can be taken immediately if one of the factors goes out of control. Devising how to measure the critical factors may require some ingenuity. For example, invoice errors may not become known until much later, if at all, unless you can devise some type of checking mechanism. You also may need to break a performance factor down into sub-factors. Invoice errors may need to be classified as pricing errors, data entry errors, and product identification errors, since they may have different causes.

Performance factors are commonly measured in time, money, quality, volume and per cent. Identifying these factors is worth a lot of effort, because when you are measuring the right things you are more than halfway toward finding the causes of the waste.

3. Study The Current Process/Situation

The objectives of this step are to: find our what the process looks like now - the steps and the level of performance. Imagineer the level of performance/the amount of variation if the team and what is good for the enterprise. At the end of this chapter are five questions against which people should regularly test all personal and organizational behavior.

Rewards

Both monetary and non-monetary rewards retain their importance in the new system. Monetary rewards include pay, bonuses, stock gifts, and merit raises. Non-monetary rewards include special prizes, dinners, plaques, tickets to events, and all the other ways organizations can show their appreciation for an individual or a team without fattening anyone's wallet. The effectiveness of the traditional human relations tools, including non-monetary rewards, should not be underestimated.

Advancement

People learn what the organization wants by observing the behavior of people who get promoted. Therefore, managers who are serious about working in the new way promote people who have joined the team in the battle against waste, and managers who are most committed to continuous improvement climb the management ladder most quickly. If people see that striving for continuous improvement is a major criterion for advancement, they will quickly realize that it is in their self-interest to work in the new way. And if people understand that teamwork is expected as part of their job performance, they will more readily share credit for accomplishments.

Recognition

People want their effort and contribution recognized, and that desire is a powerful motivator. Non-monetary recognition can be just as important as monetary recognition, and it more directly supports teamwork. Too often, management recognizes accomplishments with money when what people crave is a word of praise.

CHAPTER 15
TAKING ACTION

The process of creating the system is different for each organization, depending especially on the organization's size and existing culture. A very large organization needs to plan how to choose pilot divisions or locations and how to phase in the process throughout all areas. Centralized, authoritarian organizations need to plan changes in their culture and strive in both words and deeds to convince people that the organization now wants their input and will listen.

This chapter discusses our Quality Planning Process that can be successfully modified to fit any organization that has leaders who have, or can develop, a strong commitment to make the necessary changes. A schematic of this system is shown in Figure 15-1.

COMMITTING TO CHANGE

For the process even to begin, a leader or leaders in the organization need a strong desire to change the status quo and the energy to influence others and commit resources to the effort. In order to take action, they must have the will, belief, and wherewithal described in the previous chapter. Eventually a critical mass of leaders in the organization must embrace this desire to change, believing that a shift to the new way of management is possible, practical, and capable of working apparent miracles. Otherwise the will to carry it off will not be strong enough. This belief most often comes from education and obtaining results by doing it, and perhaps a leap of faith based on seeing what other organizations have accomplished.

At some point, the leaders should make a commitment to start the shift to the new way. This commitment is not casual

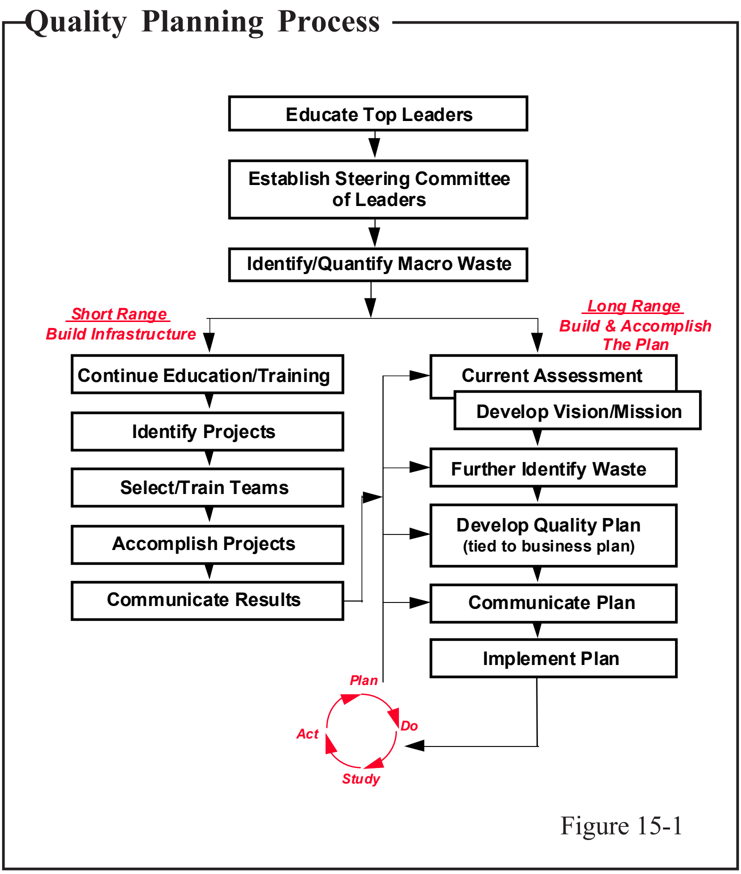

Figure 15-1

or easy. Nor can it be half-hearted. This process requires major changes and a major commitment. Sometimes in the past, a leader in an organization has started this process with the idea, “We can give it a small trial and see if anything comes of it.” This approach is generally doomed to failure. Only a serious commitment will generate the momentum to overcome the barriers and resistance to change generated by such a management transformation.

Other leaders may be unwilling to make a commitment because of the risk of failure. Such fears can be self-fulfilling; failure is most likely to result from top management’s lack of

Chapter 16
Questions That Spur Process Improvement

"They don't know what to look for. They don't even know what questions to ask." When Dr. Deming made this statement about U.S. executives visiting Japanese companies, people reacted defensively. But Dr. Deming was not implying that asking appropriate questions is easy. Asking the right questions is difficult and must be preceded by a lot of work and thought to understand thoroughly what you are questioning.

It is a critical skill for managing in the new way. Continuous improvement requires change, and much of that change is initiated by asking the right questions about the way things are being done now. The right questions increase the alternatives for attacking problems and opportunities. They force people to examine new directions and get the creative juices flowing. The right question can sometimes make a dramatic improvement in the way an organization works. For these reasons, it is important to examine the process of questioning the status quo.

To ask the right questions, first you need a thorough knowledge of the work and work processes. As Edison said, genius is 99% perspiration and only 1% inspiration. To ask a perceptive question, you must first perceive what is happening in the work process. Walking around and observing is fine but often not enough. You must be willing to put forth the effort to learn in some detail what is happening to be able to see how things might be done differently.

The second requirement is perception, understanding or insight that goes beyond merely seeing something. Some people are naturally more perceptive than others, but they have become that way by being observant, noticing differences, and continually asking themselves what caused those differences and how things could be changed.

Perceptive people also are curious and dissatisfied. At work, they are curious about how the work is done and where the waste occurs. They find some waste and are suspicious that there is much more. Then they gather facts. They look for variation, for differences in the way things happen. They interpret facts about the differences by using statistical tools. Often they perceive as important facts that others dismiss. They may find that one salesperson's calling pattern, one customer's packaging, one order clerk's work process, is better than the others.

To turn perception into action, you must be dissatisfied. Unless you are dissatisfied with the present, you will never ask the right questions and make the required changes. Often people use budgets or other goals and say, "I'm doing fine; I'm 20% over my projection." With that attitude they will remain on a plateau and not improve continuously. People must have a sense of urgency, because resistance to change is endemic in most organizations.

Besides this sense of urgency, anyone trying to change an organization must have a sensitivity to the needs of the people in the organization. Overcoming resistance to change is a topic that could fill another book. In essence, people must perceive that changing is in their own best interests because, for instance, it will provide them with a more meaningful job or more employment security as it makes their organization stronger.

The most successful questioners learn to pick an important area and then focus on it intently, look at all its aspects over a period of time, and question how it could be done differently. They don't accept the obvious way to structure a work process. They begin, in their imagination, with a clean slate and try to see how it should be done if the operation were just starting.