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THE NEW RATIONAL MANAGER

EFFECTIVE ACTION
BEGINS WITH CLEAR THINKING



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THE SEARCH FOR ORGANIZATIONAL EFFECTIVENESS

The organization is one of mankind's all-time great inventions. An organization is intended to operate as one unit, with all its parts in efficient coordination. But, too often, it does not. The parts operate at disparate levels of efficiency, or they overlap, or they work against one another's best interests—therefore against the best interests of the organization as a whole. There is misunderstanding and miscommunication, sometimes by accident and sometimes not. Things get done, progress is made. But not enough of the right things get done as well as they should. Progress, however it is defined, does not meet expectations.

The search has been on for many years to find ways of improving organizational effectiveness. Everyone agrees that there is room for improvement, that the organization as we know it is not perfect. Failure of the organization to perform as a functional unit limits full realization of its potential. What to do about it and how to improve the organization to make it more productive and efficient are subjects of great disagreement.

In 1965, we wrote *The Rational Manager*. In that book, we described the concepts and techniques we had developed for using information in problem solving, decision making, and planning for the future. During the period before and after 1965, we conducted week-long workshops for twenty or so executives at a time, offering intensive training in the use of these concepts and techniques. How the executives would apply what they had learned when they returned to their jobs was left largely up to them. Nearly everyone left the workshop determined to put the new ideas to work.

Not surprisingly, results were better in the organizations that promoted and encouraged the continuing use of these ideas. Where there was little or no encouragement to use the ideas, where there were few or no other people who also had been exposed to them, their use dwindled.

Organizations recognized these facts. “Show us how to use these ideas on a team basis” became a familiar refrain. Since the mid-1960s, we have learned a great deal about the ways in which our concepts and techniques can be shared by the members of an organization in a common approach to addressing the tasks of problem solving, decision making, and planning. We have learned how to help our clients establish the teamwork they have come to value at least as highly as discrete management skills. From these clients we have learned what works and what does not. This book, then, has grown out of the experience we and they have amassed since the writing of *The Rational Manager*—years of research, trial, error, and innovation based on what they have told us they want and need.

THE GROUP AND THE TEAM

When interacting in a common cause, people can become a cohesive group. Understanding one another as individuals, being consciously sensitive to one another, and knowing how to adapt to individual peculiarities are trademarks of a functioning group that will hold together. Common regard and the psychological benefits that group members derive from the association make group activity desirable and reasonable to achieve. Such a group, however, is not a team.

A team is built primarily on the technical capabilities of its members working in pursuit of specific goals, only secondarily on attraction among the members as individuals. The members of a team must be able to tolerate one another enough to work closely together. Beyond this, all the members must be committed to a common goal and the same set of procedures for achieving that goal.

An athletic team does not win a game because the members like to be together. It wins because it plays smart, knows how to play the game better than the opposition, avoids unnecessary errors, and pulls together as a coordinated unit. Camaraderie may grow out of mutual respect for one another's abilities, but this is usually the result, not the purpose, of the team. Most certainly, it is not the mechanism that makes the team succeed. The overall goal of a team is to win, and every member keeps this firmly in mind. But when you analyze *how* a game is won, you discover that it happens because all the players know what to do and how to coordinate their efforts.

BUILDING A MANAGEMENT TEAM

Consider now the successful management team, so fervently sought after. The members are specialists in all required areas of expertise, with unique contributions to make by virtue of unique experiences and knowledge. They are necessarily different sorts of people: the entrepreneur with an aggressive, driving nature and quick insights; the financial expert, with a measuring kind of intelligence and a finely developed ability to move patiently while being pushed; the sales and marketing executive, with unbounded enthusiasm and, sometimes, unbounded impatience; the director of research and development, able to control the balance between the feasible and the desirable; and the production manager, motivated chiefly by the realities of what it takes each day to get the product out the back door. All these men and women were hired because they were different and had different things to offer. They might not choose each other's company for a weekend trip, but, given common organizational goals to work toward and a method for coordinating their efforts, they could become an unbeatable management team.

What kind of method for coordinating their efforts? One consisting of simple, common, sensible guidelines and procedures expressed in a commonly understood language. These guidelines and procedures should bridge the differences within the team and its individual functions, and allow the team members to jointly carry out their responsibilities without inhibiting each other's contributions. They should also keep the team focused and prevent the addition of new tasks that are not essential.

Just as you would give the members of an athletic team routines and techniques that would help them coordinate their individual abilities to win the game, you should give a management team common guidelines and procedures for gathering, sharing, and using information to solve problems, make decisions, and safeguard the organization's future. Now let's extend the analogy a bit further. Sports rise above local language and culture. A Brazilian soccer player, for example, can play the game in any country. He can move from one team to another because the rules are international and transcultural. The skills of good team playing are transferable in sports, and so it is in management. A competent manager can be a member of many teams, contributing wherever there is a need for his or her skills and experience, and be an active partner in the coordinated activity that makes an organization thrive.

One of our clients, a large commodity-trading corporation with operations in twenty countries, faced a series of difficult decisions. Should the company continue to rent storage and handling facilities in the Port of Antwerp or move to some other location in Europe? If the company were to seek another location, where? Once a location had been agreed upon, how should the company operate it? Build new facilities? Rent existing ones? Form a joint venture with someone having such facilities? Once the type of operation was decided, what would be the best way to communicate and sell the recommendation to all the others involved? How would foreign exchange, time and cost of shipping, and sales and marketing considerations be integrated into this decision?

A task force of executives from five nations convened in Europe. They were from different organizational levels, with different kinds of expertise and different native tongues. Many of them had never worked together—some had never even met—but all of them were familiar

with Kepner-Tregoe decision-making concepts. Although some of the managers had originally learned the concepts in French, German, or Italian, everyone was fluent enough in English to use that as the common language.

Over the next two days they worked their way through the entire set of decisions. “They knew where to start, what questions to ask, what to do,” said the vice president for international operations. “They really did work as a team. With that approach to decision making, a term such as ‘objectives’ had only one, very specific meaning. Such a simple thing, you might think, but it meant that with a minimum of internal translation, each person was able to grasp what was going on all along the way, to ask and answer questions so that everybody understood what everybody else was saying. Which is not usual in such a situation, I can tell you. I have never attended a meeting that covered so much ground, in which so little time was wasted trying to figure out what people meant by what they said.”

One does not have to go to Antwerp to find different backgrounds, points of view, or ways of speaking. Put sales, production, and finance people of any organization together in the same room, and you may see the same result. Knowing where to start, what questions to ask, and what to do is just as important, regardless of whether people all come from the same geographical area or even from the same building.

A team that functions efficiently can be put together, but it must be *managed* into being. If you wish to develop an organization to its full potential, many things must be done in addition to teaching and installing a common approach and a common language for addressing management concerns. Introducing the concepts presented in this book is only the first step toward realizing their benefits. Continual, routine, shared use of the concepts must be planned for and implemented by the organization if these benefits are to be achieved and maintained.

CASE HISTORY: INSTALLING RATIONAL PROCESS

After a number of highly successful years in office, an executive in one company of a medium-sized conglomerate was promoted to the position of president and chief executive officer of the entire organization. The organization was stale. This fact was denied by no one. Under tight

control by the previous president and major stockholders, with decision making confined almost exclusively to the top level, rifts and cliques had developed. One company within the conglomerate was played off against another to the detriment of overall productivity. The notion of mutual responsibility was unknown. Major problems had been ignored or swept under the rug for years. Now our executive was in the top position, not an altogether enviable one.

He contacted Kepner-Tregoe and explained that he wanted to build a management team around the use of our approaches. Five years earlier he had attended one of our workshops. He had believed then and ever since that the shared use of the ideas could do much to build teamwork among his organization's managers. Now he was able to put that belief to the test. He wanted managers at all levels—in all companies within the organization—to learn and use the Kepner-Tregoe approaches individually and together. He felt that this experience would enable the managers to begin to see themselves as managers of a single organization, not as vassals of a collection of fiefdoms.

Under his leadership, the new president and his twenty-four senior executives were the first to learn and use the concepts. They analyzed nearly thirty situations in the first week, some of which had been avoided for years. Some were resolved; decisions were made to correct many more. Soon after, another group of managers went through the same procedure. They learned to use the concepts, put them to work identifying and analyzing situations of major concern, and planned for continuing their analyses to the point of resolution. Shortly thereafter, a final group of managers followed suit. In this way, over a period of two months, eighty-four managers learned to use common approaches for addressing and resolving management concerns. New systems and procedures were established to support continuing use of these approaches.

By his actions, the new president said these things loudly and clearly, and everyone in the organization heard them:

- **This is one organization.**
- **By using common approaches to solving problems and making decisions, we can work together cooperatively as parts of one organization.**

- Everyone will use these approaches, beginning with me.
- You can think. Your knowledge and experience are important. You are in a position to effectively use the new approaches you have learned.
- What you do with these approaches will have an important impact on the organization.
- You are all valuable members of the management team.

The climate of that organization changed rapidly. People learned to talk about problems that had never been discussed openly before. They learned how to communicate good ideas so others could understand why they were important. Through the use of systematic, commonly shared approaches, they solved more problems and made better decisions than they had before. Who knows how much of this conglomerate's subsequent success was due to the use of systematic, commonly shared approaches, and how much to the sense of participation and pride engendered by the overall set of changes? The question is academic. One element without the other could not have produced the same result.

The president in this example let his people know he believed they could think. He wanted them to express their ideas; he would listen to them, and he wanted them to listen to each other. He provided them with new conceptual tools so they could do a better job of working with available information. He led the way by using the new ideas himself. He established credibility for the new approaches by putting them to the test on real and important situations. He let people learn for themselves that the approaches worked in solving the kinds of concerns faced by the conglomerate and all its components.

- He made a *planned intervention* into his organization.
- He introduced the kinds of *major changes* he believed would do the most good.
- He introduced a *new idea* to his people: I value your ability to think, to come up with good ideas, to express those ideas individually and cooperatively.

- He introduced *a means by which thinking could be coordinated and channeled. The climate of cooperation and teamwork followed and was a result of the intervention.*
- Finally, he modified the systems and procedures of the organization to *provide support* for the continuing use of the new ideas.

The new president did not set out to build teamwork or group cohesiveness as desirable things that would somehow improve the operation of the company. He did not try to heal the scars of past in-fighting and conflict. He let teamwork, cohesiveness, and mutual respect grow out of the experience of working together with common guidelines and procedures. He made sure the results of that experience—problems accurately identified and resolved, decisions well formulated and successfully implemented—were recognized and rewarded.

CONDITIONS FOR WORKABLE CHANGE

For years, social scientists have said that humans resist change—and so they do. But they resist only those changes they do not understand, are suspicious of, or consider to be against their interests. Humans embrace change that seems good for them or good for the world they live in and care about.

A new idea or a new expectation, in itself, will seldom bring about change. On the other hand, change can be very attractive if it is the product of a new idea or expectation that appears to be in the best interests of the people who are expected to adopt it, if it is accompanied by the means for its fulfillment, and if it results in recognition and approval. To improve an organization, we must introduce good ideas, establish the means for making them work, and provide a visible payoff for the effort involved.

No organization can reach its full potential unless it promotes and enjoys the coordination of productive activities among its members. The more complex the activities of the organization, the more need there is for coordination if the organization is to flourish. No one knows it all anymore. Teamwork is an increasingly critical element in organizational success. Fortunately, teamwork can be achieved by creating and nurturing the conditions that produce it.

FOUR BASIC PATTERNS OF THINKING

A foundation for effective teamwork can be laid by teaching the people involved to consciously use the four basic patterns of thinking they already use unconsciously. These four basic patterns of thinking are reflected in the four kinds of questions managers ask every day:

What's going on?

Why did this happen?

Which course of action should we take?

What lies ahead?

What's going on? begs for *clarification*. It asks for a sorting out, a breaking down, a key to the map of current events, a means of achieving and maintaining control. It reflects the pattern of thinking that enables us to impose order where all has been disorder, uncertainty, or confusion. It enables us to establish priorities and decide when and how to take actions that make good sense and produce good results.

Why did this happen? indicates the need for *cause-and-effect* thinking, the second basic pattern. It is the pattern that enables us to move from observing the effect of a problem to understanding its cause so that we can take appropriate actions to correct the problem or lessen its effects.

Which course of action should we take? implies that some *choice* must be made. This third basic pattern of thinking enables us to decide on the course of action most likely to accomplish a particular goal.

What lies ahead? looks into the future. This fourth basic pattern of thinking enables us to assess the problem that *might* happen, the decision that *might* be necessary next month, next year, or in five years.

Four kinds of questions. Four basic patterns of thinking. Of course, people ask other questions and think in other patterns. Nevertheless, every productive activity that takes place within an organization is related to one of these four basic patterns.

IN THE BEGINNING: THINKING PATTERNS FOR SURVIVAL

The four basic patterns of thinking have not altered substantially since the emergence of the human race. The patterns are universal and applicable to any situation. Over millions of years, through natural selection, these neurological structures—the patterns of thinking, response, and behavior that promoted survival—tended to be preserved and passed on; patterns with low survival value dropped out. Humans became adaptive (problem solving) in their way of life. The elements that made possible those patterns of thinking became part of human nature.

The ability to ask and answer these four questions—“What’s going on?” “Why did this happen?” “Which course of action should we take?” and “What lies ahead?”—made civilization possible. By accumulating answers to these questions, humans learned how to deal with complexity, how to discover why things are as they are, how to make good choices, and how to anticipate the future.

Survival was guaranteed by the ability to use these patterns, to think clearly, and to communicate with one another for a common purpose. To most people, “survival” implies a teetering on the edge of death and a need for constant individual effort to remain alive. In mankind’s distant past, when survival concerned the individual alone, this may indeed have been true. But survival depended more often upon the actions of a group of individuals working together, perhaps as a hunting or food-gathering group. The group became a team by working together. Teamwork ensured a food supply for everyone. Teamwork ensured shelter, protection, and a basis for living in a brutally competitive world. There was a place for physical strength, but brains combined with strength counted for far more.

PATTERN 1: ASSESSING AND CLARIFYING

For our earliest ancestors, the most important of the four basic patterns of thinking was the one that enabled them to assess, clarify, sort out, and impose order on a confusing situation. Humans could separate a complex situation into its components, decide what had to be done, and determine when, how, and by whom it would be done. They could set priorities and delegate tasks. This was an integral

part of human adaptability—the condition that permits us to change based on an assessment of “What’s going on?” Animals adapt and change in response to external changes, but human adaptation is a chosen behavior resulting from such assessment. Twenty thousand years ago, the answers to “What’s going on?” may have pointed to a slowly vanishing food source, a recurring flood, or an influx of animal pests. In response, humans took the steps necessary for survival. They moved to a new location, altered eating habits, adopted better hunting practices. In short, this fundamental pattern of thinking enabled humans to prevail in a variety of surroundings and against an array of profoundly adverse conditions.

PATTERN 2: RELATING CAUSE TO EFFECT

The second basic pattern of thinking—the one that permits us to relate an event to its outcome, a cause to its effect—gave early man the ability to assign meaning to what he observed. The earliest humans did not understand such natural events as birth, illness, and death, or the rising and setting of the sun. That understanding came much later, through the accumulation, contemplation, and communication of observations about their world. It was the refinement of cause-and-effect thinking that enabled humans to move beyond mere reaction to their environment, to make use of the environment instead of being forever at its mercy.

Small children constantly ask, “But *why?*” They are exhibiting this basic thinking pattern: the desire to know why things are as they are and why they happen as they do. This desire is so basic that even an inaccurate explanation of a puzzling fact is preferable to none at all. Early man was satisfied with an explanation of a universe that revolved around the activities of supernatural beings. It was far preferable to no explanation at all for such readily perceived phenomena as the changing nature of a star-filled sky. Even today we have relatively few answers to the gigantic puzzle of the universe, but the answers we do have are comforting.

The thinking pattern we use to relate cause to effect is as basic and natural as the pattern we use to assess and clarify complex situations. Both enable us to survive, flourish, and maintain a true measure of control over our environment.

PATTERN 3: MAKING CHOICES

The third basic pattern of thinking enables us to make reasoned choices. It is the pattern that permitted early man to decide whether to continue the hunt all night or wait until morning, hide in this cave or that tree, camp on this or that side of the river. Productive, coherent action—as opposed to simple reaction to the event of the moment—depends on a sound basis for choice. In a hostile environment populated with larger, stronger, and faster creatures, random action too often could have only one end for early man, and that sudden. The development of sophistication in the making of choices, along with goal setting and consideration of the consequences of one action as opposed to another, meant that humans could sometimes eat tigers instead of vice versa.

The choice-making pattern gives rise to three major activities:

- Determination of purpose (to what end the choice is being made).
- Consideration of available options (how best to fulfill the purpose).
- Assessment of the relative risks of available options (which action is likely to be safest or most productive).

When faced with a choice, we are likely to spend most of our time and thought on only one of these three activities. But whatever the balance, however complex the choice, these three factors determine the kinds of choices humans have always made and continue to make.

PATTERN 4: ANTICIPATING THE FUTURE

The fourth basic pattern of thinking enables us to look into the future to see the good and bad it may hold. This ability to imagine and construe the future, even a little way ahead and that imperfectly, gave our ancestors a tremendous advantage. It permitted them to anticipate the storm and the snake, the starvation of winter, the thirst of summer. Future-oriented thinking was made possible largely by the superior development of cause-and-effect thinking (the second basic pattern described above). Humans learned to apply their knowledge of cause-and-effect relationships: of what *had happened*, and why, to what *could happen* and what the future *might hold*. They learned to

take actions in the present against the possible and probable negative events of the future.

Although preventive action is as old as the human race, the thinking pattern that produces this action is less successful than our other patterns. Unfortunately, the future carries less urgency than the present. Early man learned to keep some of the food of summer against the ravages of winter—but the supply was rarely adequate. The importance of the future tiger, the future fire, or future starvation was small compared with the immediacy of the tiger five yards away, the threat of fire visibly approaching, or the reality of imminent starvation. Even today we face the unfulfilled potential of this fourth basic pattern of thinking: the ability to plan ahead, to take action today against the negative events of tomorrow.

BASIC PATTERNS OF THINKING IN THE ORGANIZATIONAL CONTEXT

Kepner-Tregoe has developed four basic Rational Processes for using and sharing information about organizational concerns. These processes are systematic procedures for making the best possible use of the four patterns of thinking. This is why the Kepner-Tregoe processes are universally applicable, regardless of cultural setting or the content against which they are applied. Whether managers are Japanese, Canadian, or Brazilian, they are all equipped—as a result of common human experiences—with identical, unchangeable patterns of thinking. It is only the content that changes.

SITUATION APPRAISAL

The Rational Process based on the first thinking pattern is called *Situation Appraisal*. It deals with the question “What’s going on?” and with assessing and clarifying situations, sorting things out, breaking down complex situations into manageable components, and maintaining control of events.

When a management situation occurs, the available information is usually a confusion of the relevant and the irrelevant, the important

and the inconsequential. Before anything reasonable or productive can be done, the situation must be sorted out so that its components can be seen in perspective. Priorities must be set and actions delegated. There must be some means of keeping track of information as old situations are resolved and new ones take their place.

Situation Appraisal is designed to identify problems to be solved, decisions to be made, and future events to be analyzed and planned. Therefore, we must understand the Rational Processes applicable to these areas before studying the techniques and procedures of Situation Appraisal itself. For this reason, Situation Appraisal is presented in Chapter Seven, following the explanation of the three remaining Rational Processes: Problem Analysis, Decision Analysis, and Potential Problem and Potential Opportunity Analysis.

PROBLEM ANALYSIS

The second Rational Process, called *Problem Analysis*, is based on the cause-and-effect thinking pattern. It enables us to accurately identify, describe, analyze, and resolve a situation in which *something has gone wrong without explanation*. It gives us a methodical means to extract essential information from a troublesome situation and set aside irrelevant, confusing information.

Problem Analysis is explained in Chapter Two, and examples of its use are presented in Chapter Three.

DECISION ANALYSIS

The third Rational Process, based on the choice-making pattern of thinking, is called *Decision Analysis*. Using this process, we can stand back from a decision situation and evaluate its three components. We can analyze the reasons for making the decision and examine its purpose. We can analyze the available options for achieving that purpose. We can analyze the relative risks of each alternative. From this balanced picture of the situation, we can then make the wisest and safest choice—the one that has emerged after careful consideration of all the factors.

Decision Analysis is explained in Chapter Four, and examples of its use are presented in Chapter Five.

POTENTIAL PROBLEM (OPPORTUNITY) ANALYSIS

The fourth Rational Process is based on our concern with future events—with what might be and what *could* happen. We call it *Potential Problem and Potential Opportunity Analysis*. A potential problem exists when we can foresee possible trouble in a given situation. No one knows for sure that trouble will develop, but no one can guarantee that it will not. This process uses what we know or can safely assume in order to avoid possible negative consequences in the future. It is based on the idea that thinking and acting beforehand to prevent a problem are more efficient than solving a problem that has been allowed to develop. Likewise, Potential Opportunity Analysis involves looking ahead and anticipating situations that we may be able to turn to our advantage. This Rational Process enables an organization to take an active hand in shaping its future.

Chapter Six deals with the ways organizations have used Potential Problem Analysis to reduce the number and severity of their problems and Potential Opportunity Analysis to benefit from their opportunities.

THE RISE, FALL, AND RISE AGAIN OF TEAMWORK

All humans have the inherent capacity to think in terms of Situation Appraisal, Problem Analysis, Decision Analysis, and Potential Problem and Potential Opportunity Analysis. These processes are basic and natural. Unfortunately, they cannot be put to work automatically, used equally well by all humans, or shared. Why should this be so?

Every person has a personal, idiosyncratic way of understanding, handling, and communicating such things as cause-and-effect relationships and choice making. Some people develop better ways than others. Some may be only moderately skilled in, say, cause-and-effect thinking, but be exceptionally good at communicating their conclusions. (They may be more successful than others who are more skilled but less communicative.) The way a person thinks can be deduced only by observing that person's behavior and paying careful attention

to his or her conclusions. What information was used and how it was used remains invisible. “I don’t see how you could arrive at that” is our ordinary way of expressing the fact that thinking is an inside job.

So we have a twofold need, complicated by the fact that we are often unaware of even our own thinking patterns. The actual *level of skill in thinking*—about problems, decisions, and all other organizational concerns—*needs to be as high as it can be*. That level of skill rises when people have grasped the techniques of the Rational Processes and have learned to apply their basic thinking patterns to management concerns. That’s the easy part. *It is more difficult for people to learn to think together*. How can we achieve teamwork in an activity as individual and internal as thinking?

Teamwork in the use of patterns of thinking does not just happen. As discussed earlier, it must be contrived, consciously planned, or unconsciously fostered through the closeness and visibility of the team members. A group may become a team of sorts simply by working together on a particular task for a long enough time. They may come to understand each other’s roles in a common task. They may come to appreciate each other’s ways of thinking and learn to accommodate individual idiosyncrasies in the way information is used. Although a workable set of effective and appropriate compromises may emerge from this context, this group is not yet the full-scale, multipurpose team that can truly share in the thinking process.

HUNTING AND GATHERING: MODELS OF SUPERIOR TEAMWORK

We can gain insight into what is useful in today’s organizations by speculating on the achievement and consequences of teamwork exhibited by our earliest ancestors. Teamwork is perceived as a precious commodity today, and the earliest humans had it down pat.

For early man, available information was largely visual: tracks, signs, and indications could be mutually observed and pointed out. Hunting and food-gathering groups were small—probably fifteen to forty people of all ages. The young learned from the old through intimate contact and close observation. Old and young pooled their intellectual resources by talking about what they saw. They thought aloud—a characteristic typical of people who live together closely.

In this way they acquired commonly understood meanings for their words. Their language became expressive of detail, of fine distinctions of form, color, texture, and of thoughts and feelings. They developed few abstract terms. The languages of hunting and gathering groups that survive today retain these characteristics, suggesting how life's business probably was conducted by early man. Although there is no difference between their mental processes and ours, early man's need for communication led to a language rich in concrete, literal words that were open to verification and that had explicit definitions within a shared reality.

With a common experience of their environment and a common set of terms to describe it, the members of a hunting team functioned more as a single coordinated body than any comparable modern group. There was no need for their leader to give orders and directions constantly. Everyone understood what was to be done, who could do it best, and how to mesh individual efforts into a concerted whole. Entire vocabularies were committed to sign language to preserve silence. Hundreds of words could be expressed by formalized gestures, instantly and commonly understood.

It is little wonder that hunting and gathering people were able to achieve such a high order of coordination and teamwork in their activities. It was as though they carried computers within themselves, all of which were commonly programmed with a single shared set of routines and instructions. With these computers so closely aligned, even a little information was sufficient to trigger a common understanding among all those who received it. They knew what the information meant and what was to be done with it. There was little ambiguity or uncertainty in the treatment of and response to an input. Success and survival depended upon everyone's getting the same message at the same time. Teamwork among humans probably reached its highest point of development immediately before the advent of agriculture. This teamwork was made possible by the possession of a common language to express and share a common way of thinking.

The domestication of plants and animals doomed the hunting life. No longer was it necessary for the members of a band to think and exist in so parallel a fashion. Now there was specialization of function.

Groups became larger, and diverse social and political units appeared. Now there was room for different beliefs and behavior. Gone was the economic uncertainty of hunting and gathering, but gone also was the closeness such a life imposed. The intense teamwork of the hunting group disappeared forever; the luxury of individual thought and individual interpretation of ideas had arrived.

APPLYING THE MODEL: NEEDS OF THE MODERN ORGANIZATION

No one in his right mind wants to go back to the days of hunting and gathering. But it would be tremendously valuable if we could recapture that ability to work together, with even a fraction of that efficiency, to deal better with modern problem situations. Now, through contrivance and planning, we can recapture that ability and channel it to meet the needs of the modern organization.

This is not to say that the organizational team will somehow represent a modern hunting group armed with ballpoint pens instead of bows and arrows. Hunters' ways of thinking were totally aligned, and their lives were totally aligned. What is required today is not total teamwork in all aspects of life; rather, it is a selective, functional teamwork that can be turned on when needed, limited to those activities where it will be most productive. What is required is teamwork that can be summoned to handle organizational problems yet leave team members free to act as individuals in all other respects.

When we need answers to specific questions, we need an approach that can be invoked and shared regardless of content. The "What's going on?" applies order to complexity and confusion. The "Why did this happen?" applies to any set of circumstances in which the cause-and-effect relationship is obscure. The "Which course of action should we take?" applies to any situation in which one course of action must be adopted over others. The "What lies ahead?" must be thoughtfully considered to protect and nurture the organization's future.

We need the kinds of accurate communication and common understanding that prevailed in the hunting bands. These must be moder-

nized, selectively adapted to current conditions, and directed toward the critical functions of organizational activity where teamwork is most essential.

All of this can be done. It is exactly what was done by the new president mentioned earlier in this chapter. He brought into his organization a common language and common approaches for using the four basic patterns of thinking to produce order, resolve problems, make good choices, and protect against future threats. His people learned to share this language and use these approaches. Their acceptance of his new and different *modus operandi* came as a result of their own experience.

The new, common language they learned was not a long list of jargon that required a month to memorize. It consisted of down-to-earth words and phrases that conveyed an exact meaning to everyone exposed to that language. Such sentences as “I’m not sure you really understood what I meant” were heard less and less frequently. The new, common approaches worked when they were applied to actual situations within the organization. The individual payoff for adopting the new behavior was great; the organizational payoff was greater. The people of the organization soon were equipped to act as a team in the fullest sense of the word.

RATIONAL MANAGEMENT

Such results begin to occur only after planning and plain hard work. Rational management, which *means making full use of the thinking ability of the people in an organization*, is a continuing process. Use of the ideas—and their benefits—will eventually fade out if they are not continually used and reinforced.

Rational Management aims at major change and therefore demands major commitment. The four Rational Processes we will describe in the next several chapters constitute an explicit, logical system that can have a far-reaching impact within an organization. But this system cannot be introduced by halfheartedly sprinkling a few ideas and

suggestions among a random mix of the organization's people in the hope that something good will happen. We must identify the people who have the greatest influence on the important issues facing the organization. They should be the first to learn and use the new ideas. We must identify the people who provide them with information. We must identify those who will implement the conclusions that come out of the use of the ideas. In short, it is imperative to pinpoint *all the people within an organization who make things happen*. The objective is to move the organization closer to its full potential. This can only be done by introducing teamwork based on the continuing *conscious* use of common approaches expressed in a simple, common language and directed toward resolution of an organization's important concerns.

DECISION ANALYSIS

IN THIS CHAPTER

The Conditions and Elements of Making Choices

The Major Elements of Decision Analysis

The Techniques of Decision Analysis

THE CONDITIONS AND ELEMENTS OF MAKING CHOICES

Decisions must be made and actions must be taken in all organizations. It is up to the appropriate people in the organization to select the actions, determine how to carry them out, and take responsibility for their successful implementation. Often, however, there is uncertainty over how to proceed. People find it hard to think together about the choices they must make. They cannot agree on where or how to start making the decision. As a result, they may overlook important information, fail to consult the proper people, and make mistakes. Organizational decision making is often not as good as it should be.

Although people enjoy being involved in decision making, many shun the task because of the controversy involved. Lacking commonly accepted, unbiased procedures, decision making becomes a shoving contest among those with differing points of view. The individuals with the most power prevail. Others accept decisions in order to save face and avoid direct confrontation.

When people are provided with a common approach to decision making, they find they can indeed work as a team. There is more sharing of relevant information. Differing positions are more successfully reconciled because the process of decision making is less biased. Inevitably, the quality of decision making improves.

THE THINKING PATTERN FOR MAKING CHOICES

Decision Analysis is a systematic procedure based on the thinking pattern we use when making choices. Its techniques represent expansion and refinement of the elements in this thinking pattern:

- We appreciate the fact that a choice must be made.
- We consider the specific factors that must be satisfied if the choice is to succeed.
- We decide what kind of action will best satisfy these factors.
- We consider what risks may be attached to our final choice of action that could jeopardize its safety and success.

We may employ this thinking pattern very swiftly, even unconsciously. Although we may skip one or more of the elements in a cursory analysis, each element plays some role in determining every choice we make. When we are confronted with simple, repetitive choices, memory and experience enable us to consider in a fraction of a second the specific factors that must be satisfied. This is seen typically in the choices we make when we drive an automobile. We would be incapable of driving without the ability to make decisions and choices quickly and automatically, unconsciously using all the elements of the choice-making thinking pattern.

Nobody needs to be told that excellence in making choices is critical to individual and organizational success. Everyone knows that choices made today influence our lives tomorrow. What is not so obvious is how to use the information available to make the decision today that will be lauded as excellent tomorrow and bring credit to everyone associated with it. Nor so obvious is how we ought to use that information, how we can avoid getting bogged down in details, how we can avoid missing the details that must be recognized, and how we can escape being confused and intimidated by the uncertainties of the future.

Behind most decisions lie a myriad details. Some are highly important, some insignificant. The quality of available information may not match our needs. There may not be enough information. There may be so much that it overwhelms us. Perhaps the degree of relevance of available information is unclear. Over every decision

hovers some measure of uncertainty—for all decisions will play out their day on a stage somewhere in the uncertain future. Good decision making, like good problem solving, depends heavily on experience and judgment. In both areas of managerial responsibility, however, it is within the framework of a systematic procedure that experience and judgment produce successful results and a reputation for managerial excellence.

CASE HISTORY: HIRING A NEW R&D DIRECTOR

Making good choices depends on three elements: the quality of our definition of specific factors that must be satisfied, the quality of our evaluation of the available alternatives, and the quality of our assessment of the risks associated with those alternatives. It all sounds so straightforward that we wonder how bad decisions come to be made. Here is one simple and highly typical example.

“We need to increase the research and development capabilities of this organization.” That was the statement made by a member of the Executive Committee of a fast-growing social research organization.

Over a period of two months, the committee discussed this need and considered alternative actions. With what result? The committee hired a new director of R&D, an individual who had worked for a competitor and was considered “the best.”

“Best for what?” is the question that should have been asked when the statement of need was first made.

After the new director had been in the job for six months, the Executive Committee came to three conclusions: (1) The new director was not “best” for their organization; (2) The alternative of “new director” did not really address any of the firm’s pressing R&D concerns; (3) The question of a suitable direction for R&D at that point in the company’s life had never been adequately discussed.

The committee had made a poor decision. Why? Because the committee had no clear purpose to begin with, it had not discussed the organization’s specific needs in matters of research and development. Consequently, the committee had not understood the kinds of alternatives most likely to benefit the organization. Yet, at the time the decision was made, everyone was positive and enthusiastic about the choice.

“What we said later,” one member of the committee told us, “was that, given the information we had at the time, it seemed like the right way to go. But I don’t buy it. Given the information we could have had and the actions we might have taken had we really thought through our situation, I don’t believe that the decision to hire ‘the best’ away from a competitor would have seemed like the right way to go. Everyone was hung up on the assumption that there was somebody out there who could come in and work miracles. It was never put in just those words, but it was on that assumption that the whole decision was really based.”

Many, many decisions are characterized by this kind of thinking. A good decision can only be made in the context of what needs to be accomplished. No alternative is any better than the opportunity it holds for us to do the job that has to be done.

The purpose of Decision Analysis is to identify what needs to be done, develop the specific criteria for its accomplishment, evaluate the available alternatives relative to those criteria, and identify the risks involved.

For the remainder of this chapter, we will explain the major elements in the process of Decision Analysis and show how the process is used. Our example involves a relatively simple, straightforward choice among four possible courses of action.

THE MAJOR ELEMENTS OF DECISION ANALYSIS

THE DECISION STATEMENT

In Problem Analysis, we begin with a problem statement, which names the situation to be resolved. In Decision Analysis, we will begin with the decision statement, or with naming the “choice” dilemma that is to be resolved.

Resolution in Problem Analysis consisted of a confirmable answer to the question “Why?” Resolution in Decision Analysis will consist of an answer to the questions “To what purpose?” “Which?” and “How?”

A decision statement provides the focus for everything that follows and sets the limits of the choice. The criteria to be developed will follow from it, describing in detail the requirements of the decision. The alternatives will be judged on their ability to meet these requirements. Because the decision statement sets all these activities in motion, it has another quality in common with the problem statement: The way it is worded deserves careful attention.

A decision statement always indicates a choice, some kind of action and its intended result: “Select a new director of quality” or “Choose a site for our new West Coast office.” It also indicates the level, or implied prior decisions, at which the decision is to be made. “Select a new director of quality” indicates we have already decided that a new director is needed.

In the case we presented earlier—“We need to increase the research and development capabilities of this organization”—the decision failed chiefly because no thought was given to the level of the decision. In fact, it was not clear that there was even a choice to be made. The statement of purpose gave the decision-making team no guidance and set no limits, up or down, on the range of alternatives that would be considered. The only stage it set was one on which an alternative-driven solution could assume the starring role.

THE OBJECTIVES FOR THE DECISION

Objectives, in our terminology, are the criteria for the decision—the specific results and benefits the decision is to achieve. We establish these objectives once we agree upon the correct statement of our decision. We do this before discussing alternatives, sometimes even before identifying alternatives. Decision Analysis is the antithesis of identifying a course of action and then building a case to support it. Instead, we are moving from what needs to be accomplished toward the alternative that can best accomplish it. For example, if we want to hire a new executive, we are more likely to make a good choice if we first identify the qualities of an ideal candidate and then begin the interviewing process. No experienced manager needs to have this reasoning spelled out. Objectives are clear measures of the ends we want to achieve, for only with clear measures can we make reasoned choices.

MUSTS AND WANTS

We divide the objectives into two categories: MUSTs and WANTS. The MUST objectives are *mandatory*; they *must* be achieved to guarantee a successful decision. They may not be our most important objectives. Rather, they are minimum requirements that any alternative must provide to be meaningful. When the time comes to assess alternatives against our objectives, any alternative that cannot fulfill a MUST objective will immediately drop out of the analysis.

These objectives must be *measurable* because they function as a screen to eliminate unacceptable alternatives. We must be able to say, “This alternative *absolutely* cannot fulfill this objective; it cannot meet a requirement that is mandatory for success.” For example, a MUST objective in a hiring decision might be “Two years’ experience as a supervisor in this industry.” If that length of experience is mandatory, then there is no point in considering any candidate who hasn’t put in the two years.

Of course, it is important to understand why an objective is mandatory. We might ask what benefit will we gain from a candidate with two years’ experience. If there are other acceptable ways to gain that benefit, then two years’ experience is not truly mandatory.

“Two years’ experience” also needs to be a *reasonable* objective. Can we reasonably expect to find alternatives that satisfy this MUST objective? Given the remuneration for the position and our location, can we expect to find candidates with two years’ experience? If we cannot and two years’ experience is truly mandatory, then we may need to re-think the decision statement or some of the other objectives.

All other objectives are categorized as WANTS. The alternatives we generate will be judged on their *relative* performance against WANT objectives, not on whether or not they fulfill them. The function of these objectives is to give us a comparative picture of alternatives—*a sense of how the alternatives perform relative to each other*.

An objective will be stated frequently as a MUST and then be rephrased as a WANT so that it can perform both functions. For example, “Two years’ experience in this industry” (MUST) may be rephrased as “Maximum experience in this industry” (WANT). Now,

when we come to evaluate the alternatives, we can make two kinds of judgments. First, candidates with less than two years' experience will be eliminated. Second, the remaining candidates will be judged relative to each other based on how many years of experience each has had.

Here is an example of a high-priority objective that could not be used as a MUST: "Interacts well with managers at all levels." No matter how important this objective may be, it concerns an ability that can be measured only in a subjective way. All four job candidates may meet this objective, but *some will meet it better than others*. This is exactly what we want to know: Who meets it best? Who is equally good? How well do others compare to the best performer?

Unlike a MUST objective, we are less concerned with finding alternatives that satisfy the objective minimally and more concerned with how the alternatives perform relative to each other. A WANT objective is not necessarily less important than a MUST; it simply serves a different purpose.

Someone once succinctly described the functions of these two kinds of objectives by saying, "The MUSTs decide who gets to play, but the WANTs decide who wins."

ALTERNATIVES

An ideal alternative perfectly fulfills every condition set for it without adding new difficulties. Unfortunately, ideal alternatives are rare. We must, therefore, evaluate each available alternative by measuring it against all of our objectives. It is the relative quality of that fit that concerns us.

If we must choose among several alternatives, we will have to decide which one will best fulfill our objectives with the smallest acceptable risk. In other words, we try to make a balanced choice. An alternative that best accomplishes the objectives but carries severe risks may not, after all, be the best choice. Another alternative, perhaps less exciting but safer, may be the best balanced choice.

If there is only one alternative, we must decide whether it is good enough to accept. In this case, our evaluation will focus on its relative worth compared with a perfect, but unobtainable, alternative.

If we must choose between a current and a proposed course of action, then we consider both to be alternatives. We evaluate their performance against our objectives just as we would if both had been proposed. Whatever is currently being done is, after all, an alternative; the choice is whether to continue that way or find another, better way.

If, in the absence of *any* alternative, we must create something new, we can usually build an alternative from available components. We then choose the best and most feasible combinations, treat each as a separate alternative, and evaluate all of them against an ideal model of an alternative.

In the next chapter, we will examine true examples of these situations and explore the sources of alternatives.

THE CONSEQUENCES OF THE CHOICE

The final step in Decision Analysis is the search for possible adverse consequences of all feasible alternatives.

The negative consequences of any action are as tangible as its benefits, sometimes more so. Once a decision has been made and implemented, any of its negative effects will eventually become real problems. The effects of decisions—good or bad—always outlive the decision-making process that produced them. And which effects—good or bad—are longest remembered? “The evil that men do,” wrote Shakespeare, “lives after them, the good is oft interred with their bones...” Some things haven’t changed at all in almost four hundred years.

We must thoroughly explore and evaluate the possible adverse consequences of any alternative *before* we make a final decision. This is the only opportunity we will ever have to deal with such effects at no cost beyond a little intellectual effort. We must recognize possible adverse consequences before they occur and take them into consideration as part of our decision. Having recognized and assessed them, we may be able to avoid them altogether or take steps in the present that will reduce their effect in the future. A risk attached to an alternative is not necessarily a totally damning factor—*provided that someone sees it while there is time to do something about it*. Any

evaluation and choice that omits a disciplined, systematic search for potential negative consequences is an invitation to disaster.

Decision Analysis seldom deals with certainties. The further into the future a proposed action extends, the less certain it can be. It is because of these uncertainties that the process of Decision Analysis depends on our judgments, evaluations, experience, and intuitive feelings. All of these supply the valid data we need to support the correct decision we must make.

To set aside feelings, instincts, and the inner voice that says, “I don’t feel right about this,” is to throw away a valuable resource. It leads to such errors as hiring a person you don’t like and can’t work with just because “the résumé looked so good, and I was trying to be objective.” That is not good decision making. A good decision is one that will work. Overlooking factors that make a choice unworkable is a fundamental mistake. A reasonable selection and a good decision always depend on thorough study and careful evaluation of *all* relevant information.

Decision Analysis is a methodical, systematic process. But it is also as creative and innovative a process as its users choose to make it.

THE TECHNIQUES OF DECISION ANALYSIS

The techniques of Decision Analysis are divided into these activities:

- State the decision.
- Develop objectives.
- Classify objectives into MUSTs and WANTS.
- Weigh the WANTS.
- Generate alternatives.
- Screen alternatives through the MUSTs.
- Compare alternatives against the WANTS.

- Identify adverse consequences.
- Make the best balanced choice.

STATE THE DECISION

CASE HISTORY: PURCHASING THE BEST PERSONNEL INFORMATION SYSTEM

The following situation illustrates the use of Decision Analysis techniques. It concerns the selection of software from among four potential suppliers.

Our client's decision statement was: "Select the Best Personnel Information System for [Our] Corporation." The people involved in making this decision were the vice president of operations, the vice president of human resources, the director of management information systems, and one of the firm's attorneys. They worked as a team to decide three things: the level of the decision, who was to delegate necessary research tasks to others in the firm, and who was to use the resulting information to reach the final conclusion. The team was not involved in the research required to make the evaluation.

Operating this way, the team arrived at its conclusion after three one-hour sessions held over a period of two weeks. Compared with previous, similar decision situations, this was considered a tremendous saving of time and effort.

The decision statement indicated not only the purpose of the decision but also the level at which it would be made. It set the stage for the kinds of alternatives that would be considered. Had the statement been worded: "Select a method to improve our method of personnel information recording and reporting," the character of the decision would have been different. The selection of a new system would have appeared as one of several alternatives.

A decision statement is, in a way, the product of previous decisions. The team had already decided that it needed a new system to replace all the present methods and procedures. Thus, the wording of the decision statement immediately vetoed a dozen other possible decisions that might have been made.

DEVELOP OBJECTIVES AND CLASSIFY INTO MUSTS AND WANTS

What must the new system do? What would the team like it to do in addition? What constraints affect the choice of a new system? Such are the questions that every team of decision makers has to ask in order to begin setting objectives. The answers to these questions will result in a list of objectives. The objectives will then be classified as MUSTs or WANTS.

Among our client's MUST objectives for the new personnel information reporting system were these:

MUST be capable of:

- *Meeting Equal Employment reporting standards.*
- *Providing reporting to management, using Report Writer.*
- *Capturing compensation information.*

Each of these objectives was considered mandatory, and each was measurable: a system could offer these features or it could not. These objectives were also considered reasonable. Several alternatives were known to meet these minimum requirements.

The list of WANT objectives represented additional desirable, but not mandatory, criteria. Following are five of the seventeen WANT objectives that appeared in the analysis:

- *Captures individual job histories and special capabilities.*
- *Can be implemented within six months.*
- *Meets Health and Safety reporting requirements.*
- *Reduces current paperwork.*
- *Protects employee confidentiality.*

WEIGH THE WANTS

Once the WANT objectives had been identified, each one was weighed according to its relative importance. The most important objective was identified and given a weight of 10. All other objectives were then weighted in comparison with the first, from 10 (equally important) down to a possible 1 (only one-tenth as important).

No attempt was made to rank the objectives. The purpose of the 10 to 1 weighting scale was simply to make visible the relationships among these objectives. What mattered most? What could be done without, if necessary?

When the time comes to evaluate the alternatives, we do so by assessing them relative to each other against all the WANT objectives—one at a time. This is why it is critical at the outset to identify the most important objectives. It is pointless to know that a particular alternative satisfies nine out of ten WANT objectives if, in fact, it is the tenth that is most crucial to the success of the decision. We must also examine the balance of WANT objectives and look for certain danger signals:

- Too many high numbers may indicate either unrealistic expectations or a faulty perception of which objectives can guarantee success.
- Too many low numbers suggest that unimportant details may be smothering the analysis.
- Too many objectives reflecting the vested interest of a single stakeholder may lead to an unworkable decision. This is especially true if other stakeholders are equally affected by the final decision.
- Loaded objectives—those that guarantee a smooth passage for a certain alternative and penalize all others—can make a mockery of an analysis.

These are the weights our client team assigned to the five WANT objectives:

- *Captures individual job histories and special capabilities*..... 9
- *Can be implemented within six months*10
- *Meets Health and Safety reporting requirements* 8
- *Reduces current paperwork*.....5
- *Protects employee confidentiality*.....3

GENERATE ALTERNATIVES AND SCREEN THROUGH THE MUSTS

In this case, alternatives were fairly clear-cut. The team identified four leading suppliers of the system they wanted and then launched the evaluation.

In this evaluation, an alternative either meets all the MUST objectives (GO) or does not (NO GO). A NO GO is immediately dropped from further consideration.

The MUSTs, you may remember, were:

- Meeting Equal Employment reporting standards.
- Providing reporting to management, using Report Writer.
- Capturing compensation information.

To the surprise of most people on the team, one highly regarded system failed at this point. It could not provide the Report Writer feature. The alternatives are shown in Figure 7.

Note that the information columns in Figure 7 tell us why an alternative has passed or failed. By listing this information, the process has become visible. Facts, opinions, and judgments are on record. A written summary exists for future reference, leaving nothing to be memorized or forgotten. And necessary information is available for anyone who must approve the final decision.

Having eliminated Company D, the team now carried the three remaining alternatives into the next phase: comparative evaluation on the basis of the WANT objectives.

COMPARE ALTERNATIVES AGAINST THE WANTS

Beginning with the first WANT objective—“Can be implemented within six months” (weight of 10)—the team evaluated the information it had gathered about Companies A, B, and C.

Company A had given an estimate of six months with a guarantee; Company B, six months but would not commit to a set date; Company C, four months and seemed reliable. The vice president of operations was less certain about Company B. He had heard that

two of B's customers had reported slightly delayed implementation; otherwise, they were satisfied with the service they had received.

Based on this information, the team decided that Company C, with a reliable estimate of four months, *best* met the implementation objective. They gave Company C a score of 10 on that objective, and gave relative scores of 9 to Company A and 5 to Company B. What purpose do these numbers serve? *They help to reflect our judgments.*

At this point in the analysis, all objectives have been sorted out and made visible, and the WANTS have been weighed. Now the alternatives will be sorted out, permitting us to judge the relative advantages of each one. For example, how good an implementation job can Company C do *compared with Companies A and B*? As each company is scored against each of the WANT objectives, its relative overall performance and ability to produce desirable results will gradually become clear.

Figure 8 shows the judgments the team made of the relative performances of the three alternatives, scored against all of the WANT objectives.

People sometimes are bothered when none of the alternatives seems to deserve a 10. They are even more disturbed when none of

FIGURE 7 **ALTERNATIVES SCREENED THROUGH MUST OBJECTIVES**

<i>MUST OBJECTIVES</i>	<i>COMPANY A</i>	<i>GO/NO GO</i>	<i>COMPANY B</i>	<i>GO/NO GO</i>
Meets Equal Employment reporting standards	Meets government requirements. More detail available	GO	Meets government requirements. More detail available	GO
Provides management reporting using Report Writer	All reports use Report Writer	GO	Standard reports can be exported to Report Writer	GO
Captures compensation information	In standard package and can be added to	GO	In standard package	GO

the alternatives performs well on a particular objective. We give a 10 to the alternative that comes closest to meeting the objective, and score the other alternatives *relative to it*. We are not seeking an ideal through this comparative evaluation. What we are seeking, instead, is an answer to the question: “Of these (real and attainable) alternatives, which best fulfills the objective?”

There is one caution: If, during the scoring step, a statement such as “none of the alternatives is much good” comes up repeatedly from one objective to the next, then something is obviously wrong. Either more alternatives are needed or the objectives are unrealistic, and no *real and attainable* alternative can fulfill them. But this is a rare circumstance. People in a decision-making position are usually there because they have a good grasp of what is feasible; they do not devise unattainable objectives.

At the other extreme, all alternatives may perform well on nearly all objectives. This is caused by a set of objectives so loose that any of a number of similar alternatives will be equally good at satisfying the requirements of the decision. The simple remedy is to go back to the list of WANT objectives and make them tighter, more demanding, and more numerous. The alternative that really does offer more will then stand out.

<i>COMPANY C</i>	<i>GO/NO GO</i>	<i>COMPANY D</i>	<i>GO/NO GO</i>
Meets government requirements. More detail available	GO	Meets government requirements using standard reports. Cannot be modified	GO
Standard reports can be exported to Report Writer	GO	Cannot use Report Writer	NO GO
In standard package and can be added to	GO	—	

Now we need answers to two questions: How does each alternative perform across the board? How does it compare to the other alternatives on total performance against WANT objectives? We can answer the questions by computing the weighted scores of each alternative.

A *weighted score* is the score of an alternative multiplied by the weight of the objective to which the score refers. For example:

Company A scored 9 on the WANT objective “Can be implemented within six months.” That objective has a weight of 10. Therefore the *weighted score* of Company A on that objective is 90 (9 x 10).

We continue by computing Company A’s weighted scores for all the WANT objectives. Then we add up all of the weighted scores to produce the *total weighted score* for the Company A alternative. We complete this step by repeating the procedure for the other alternatives, producing the results that appear in Figure 9.

The total weighted scores function as *visible comparative measurements* of the alternatives. Their numbers indicate that one alternative is more viable than the others, that one course of action is apparently more valuable than the others. There is nothing magical

FIGURE 8 ALTERNATIVES COMPARED AGAINST WANT OBJECTIVES

<i>WANT OBJECTIVES</i>	<i>WEIGHT</i>	<i>COMPANY A</i>	<i>SCORE</i>
Captures individual job histories and special capabilities	9	Can be written into program	6
Can be implemented within 6 months	10	6 months with guarantee from vendor	9
Meets Health and Safety reporting requirements	8	Exceeds requirements; very flexible	10
Reduces current paperwork	5	Minimum forms required; can use current documentation	10
Protects employee confidentiality	3	Can customize security	10

about the numbers. A base of 10 to 1, for both the weighting of WANT objectives and the scoring of alternatives, is a simple, logical, and productive means for producing good results.

As Figure 9 indicates, the total weighted scores were 304 for Company A, 218 for Company B, and 302 for Company C. As we have said, this is a sampling of the full-blown analysis that included seventeen WANT objectives. For the record, the complete scores were: 1009 for Company A, 752 for Company B, and 878 for Company C. Company A, then, satisfied the objectives of the decision to a greater degree than either of its competitors.

Under certain conditions we can vary the way we assign numerical weights. If a manager must work with fifty or a hundred objectives, for example, these can be broken down into categories, with a weight (or percentage of influence) given to each category. In this instance, a single WANT objective may bear a weight of 10, but belong to a category with a comparatively low weight. While the logic of the Decision Analysis process remains unchanged, this modification of technique reflects the particular requirements of the decision.

<i>COMPANY B</i>	<i>SCORE</i>	<i>COMPANY C</i>	<i>SCORE</i>
In standard package	8	In standard package and can be added to	10
Vendor says maybe 6 months	5	4 months	10
In standard package	7	In standard package	7
Uses minimum forms; cannot customize	5	Uses minimum forms and can make custom forms	7
No security on data file but can be added	5	Password security on Report Writer	7

THE TENTATIVE CHOICE

The total weighted score gives us a tool for selecting a *tentative choice*. Although the tentative choice often graduates to the status of *best balanced choice*, it should never do so before we explore the potential risks involved. Four decades of experience have shown us clearly that elimination of this final step of Decision Analysis—because “one alternative is so obviously the leader”—can negate the value of all work done up to this point.

IDENTIFY ADVERSE CONSEQUENCES

If exploring potential risks is so important, why do people often fail to do this step? There are several understandable reasons. If an analysis of three alternatives produces total weighted scores of 700, 350, and 210, it may seem a waste of time to brainstorm for potential risks. In another case, someone may be reluctant to inject a dose of pessimism when the rest of the team enthusiastically exclaims, “We’ve done all this work! And we’ve produced this great alternative!” That one doubtful member of an optimistic decision-making team may

FIGURE 9 ALTERNATIVES AND THEIR TOTAL WEIGHTED SCORES

WANT OBJECTIVES	WEIGHT	COMPANY A	SCORE	WEIGHTED SCORE
Captures individual job histories and special capabilities	9	Can be written into program	6	54
Can be implemented within 6 months	10	6 months with guarantee from vendor	9	90
Meets Health and Safety reporting requirements	8	Exceeds requirements; very flexible	10	80
Reduces current paperwork	5	Minimum forms required; can use current documentation	10	50
Protects employee confidentiality	3	Can customize security	10	30
Total Weighted Scores				304

very well hide those negative opinions. One last and very common reason for dropping the step of risk exploration is this: We are often unable or unwilling to apply the lessons of the past to the decisions of today.

One manager told us that, early in his career, he had meekly suggested to his boss that the potential problems of an alternative under consideration had not been adequately considered. Even more meekly he reminded his boss that a decision made in another department had seriously backfired several months before. “That,” his boss replied scornfully, “was *them* and *then*. And this is *us* and *now*.” The subject was dropped. The decision proved to be a good one, but that did not prove the young manager wrong. A year or two after a decision is implemented, nobody regrets the time spent probing its risks. It is a mere fraction of the time spent in regret over a risk that should have been explored but was not.

In the earlier steps of Decision Analysis, we try to make our objectives as comprehensive and our evaluation of alternatives as rigorous as possible. But these activities go just so far. They must be followed

<i>COMPANY B</i>	<i>SCORE</i>	<i>WEIGHTED SCORE</i>	<i>COMPANY C</i>	<i>SCORE</i>	<i>WEIGHTED SCORE</i>
In standard package	8	72	In standard package and can be added to	10	90
Vendor says maybe 6 months	5	50	4 months	10	100
In standard package	7	56	In standard package	7	56
Uses minimum forms; cannot customize	5	25	Uses minimum forms and cans make custom forms	7	35
No security on data file but can be added	5	15	Password security in Report Writer	7	21
		218			302

by the most creative and difficult step in the process: *considering the consequences of alternatives*. This entails answering at least the following questions.

If we choose *this* alternative:

- What are the implications of being too close to a MUST limit?
- Where might information about this alternative be invalid? What are the implications?
- What could go wrong, in the short- and long-term, if this alternative were chosen?
- What could keep this decision from being successfully implemented?

In this step of the process, we try to destroy our best alternatives one at a time. We become destructive, negative, and pessimistic. The degree to which managers accept this process is determined largely by how experienced they are. Experience teaches us that there are no awards for past optimism over current failures. This fact is borne out by the difficulty of finding out who, in any organization, was really responsible for the very worst decisions that were ever made.

We begin this step with the *tentative* choice—the alternative with the highest total weighted score. We examine it by itself. We examine its probabilities of failure or potential trouble. Remember that this is never an exercise in comparisons. We do *not* say, “Alternative A is more likely to produce this problem than Alternative B.” Comparison is not a useful approach. Each alternative must be examined separately.

We then rate the adverse consequences of an alternative on the basis of *probability* and *seriousness*: What is the probability that this (adverse consequence) will occur? If it (the adverse consequence) does occur, how serious will it be? We can use ratings of High, Medium, and Low (H,M,L) or a scale of 10 (highly probable/very serious) to 1 (unlikely/not at all serious). The 10 to 1 system is fine—provided that we avoid the temptation to start multiplying: “Probability of 9 x Seriousness of 3 = 27.” (We did this in our first book, *The Rational Manager*, and went on to add these numbers for each alternative. This produced “adverse consequence totals” for all the alternatives. We have found over the years that this is not useful information.) If we

permit the numbers to obscure the information that produced them, we can lose sight of the serious adverse consequences.

We will not lose any sleep over an adverse consequence of low probability and minimal seriousness. But we will be very attentive if an adverse consequence is considered both highly probable and very serious.

Following are some of the adverse consequences for the alternatives that scored the highest. These were identified during the final step of the Personnel Information System decision.

Company A: If the company is to be sold soon, then support could be affected.

Probability? Medium

Seriousness if it occurs? High

Company C: If this is a new company with inexperienced employees, then they may not meet future needs.

Probability? Low

Seriousness if it occurs? Medium

Three factors determine the number and importance of potential adverse consequences we identify for the alternatives: the extent of their existence, our ability to find them, and our willingness to address those we find.

MAKE THE BEST BALANCED CHOICE

Having clearly identified the value each alternative can deliver and the risks each alternative poses, we are prepared to weigh the potential gains against the potential pitfalls. We ask ourselves whether or not we are willing to accept the risks of a choice to gain the benefits. If the answer is yes, then we should commit to the choice. If not, we should consider less risky, more beneficial choices.

How useful is the Decision Analysis process if potential adverse consequences can knock out the very alternative that scored the

highest on the objectives we worked so hard to develop? It is because of the previous steps in the process, the visibility of information, and the tracking of our thinking from the decision statement to this point that we can best assess the potential adverse consequences. It is only now, with all the data before us, that we can stretch our imaginations beyond the body of facts we have amassed, survey it all, and ask: “What did we miss? Can we afford the risks involved with this choice?”

The outcome of this particular case was that our client chose to go with Company C, the runner-up in the numerical scoring. Someone had picked up a rumor that Company A might sell out within the next three years. The rumor was never substantiated but was there just the same. Moreover, Company C’s youth and relatively small size seemed to offer at least as many potential advantages as disadvantages. Its management team was aggressive, ambitious, and preoccupied with service as a means of getting and retaining new business. Our client’s service needs were unlikely to outstrip Company C’s ability to meet them. The team made the best decision possible based on the available information and on the experience and judgment of the team members.

So how did it all turn out?

Company A did not sell out within three years. But by that time its reputation for service had been eclipsed—by Company C, the team’s choice. Company C did an excellent job. It had the system in full operation within four months as promised, and it continued to treat our client as a key customer. The decision-making team remained satisfied that it had made the right choice and never regretted having considered the rumor about Company A in its deliberations.

In three one-hour sessions conducted over a period of two weeks, the team had reached a prudent decision that produced exactly the results they had hoped for: a balanced, reasoned choice of action that all could subscribe to and support—a *choice that worked* for the organization.

CHAPTER SUMMARY

Through the process of Decision Analysis, we expand from a concise statement of purpose to a number of criteria for completely defining the achievement of that purpose. These criteria give us something specific against which to evaluate available alternatives. Then, by narrowing those judgments through a systematic method of evaluation and risk assessment, we reach a final conclusion.

The power of the process lies in the ability it gives managers to make *productive* use of all available information and judgments. The process does not guarantee that perfect decisions will be made every time. Given human fallibility and the usual inadequacy of available information, there can always be errors. At the very least, however, the Decision Analysis process enables the manager to reduce the incidence of errors by providing a systematic framework for evaluating alternatives. Going beyond this simplest level of efficiency, the examples in the next chapter illustrate how much more effective Decision Analysis can be when creative and innovative managers apply the basic logic of the process to their most important choices.