

SECOND EDITION

WHATEVER IT TAKES

The Realities of Managerial Decision Making

MORGAN W. MCCALL, JR. ROBERT E. KAPLAN

Here's what experts had to say about the First Edition:

"McCall and Kaplan have written a book that is stimulating, challenging, exciting, and provocative. The authors combine excellent writing with a textured understanding of the problems that confront managers when they make decisions. As a result, this book is filled with insights that one wants to savor and reflect on further. The authors fill this book with practical advice and rules of thumb that will be of value to those involved in decision making. As these two reasons suggest, the book should appeal to both researcher and practitioner!"

Robert J. Bies
Assistant Professor of Organizational Behavior
Kellogg Graduate School of Management
Northwestern University
Evanston, IL

"The writing style is crisp and down-to-earth. The authors tell it like it is, giving the in-house politics and existential absurdity of decision-making equal time in a refreshing departure from recent ideological treatments of corporate excellence. McCall and Kaplan weave together findings from research and quips from harried, real-life managers about the decision-making problems that confront them."

William J. Rothwell, Ph.D.
HRD Program
Illinois Office of the Auditor General

"This is an excellent book. Probably the most readable and engaging discussion of decision making I have seen in a while. A most welcome and refreshing change from the alternatives available on the market!"

Vasu Ramamujan
Case Western Reserve University
Cleveland, Ohio

ISBN 0-13-952136-4



X00006DNAL
Whatever it Takes: The Re
UsedGood



E29C

PRENTICE HALL
Englewood Cliffs, N.J. 07632

MCCALL / KAPLAN

SECOND EDITION

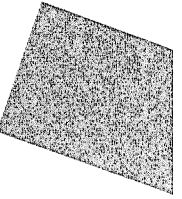
WHATEVER IT TAKES

*The Realities of
Managerial
Decision Making*

MORGAN W. MCCALL, JR. ROBERT E. KAPLAN

SECOND EDITION
PRENTICE HALL

The Flow of Information	16
Making Sense of the Pieces	24
Creating Problems: An Overview	32



3 PRIORITIES FOR ACTION	39
To Act or Not to Act	43
What to Work On: Some Words of Advice	53
4 INTO ACTION	60
Contextual Factors Affecting the Type of Action	61
Action: Quick or Convolved	66
Implications for Managerial Effectiveness	85
5 VICTORY OR DEFEAT	88
After Action, Then What?	88
The Ambiguity of Action and Consequences	92
Consequences, While Ambiguous, Do Matter	96
Living with the Results	99
6 AWASH IN DECISION STREAMS: IMPLICATIONS FOR STAYING Afloat	108
There Are Some Things No One Can Do Much About	110
Some Things Individual Managers Can Do Something About	113
Some Things the Organization Can Do Something About	117
REFERENCES	124
NOTES	131
INDEX	142

FOREWORD

Many scholars have recognized that decision making comes close to being—if it is not in fact—the very heart of managerial work. Managers are deluged with choices, options, and information, good and bad. Saddled with heavy demands on their time, with resources that are not always adequate to their responsibilities, and with unrealistic expectations on the part of superiors (or shareholders and financial institutions), they must pick and choose an action route around both buried antipersonnel mines and highly visible obstacles.

Students of business have reacted to the preeminence of decision making with a wealth of studies that extend from the pioneering work by the Carnegie-Mellon “school” of Herbert Simon and his disciples to a continuous stream of work by economists and psychologists of many persuasions. Regrettably, many of these treated decision making as though it were the product of a somewhat rational individual executive (who might satisfy when he or she couldn’t quite maximize) or of a struggling small group confronting a problem and a time clock. The usual surrogates for both of these were typically eager students solving contrived problems behind one-way mirrors.

At long last two distinguished management researchers have taken

tracked down many references but also slogged through the creation of the index. By the time of the second edition, Alice Warren had become a research assistant and helped with the literature review as well as with an overall reading of the book.

Special thanks go to David Hills who brought his wit to the illustrations in this book. Thanks, too, to Michael Gerlach, who coauthored with us the technical report from whence this book sprang.

Finally, Biscuitville on Market Street in Greensboro deserves the patience award for tolerating Bob Kaplan's endless hours writing in the back booth.

On a serious note, we want to recognize our special debt to an executive who spent many patient hours with us sharing his experiences and insights about management and the decision-making process. When Morgan W. McCall, Sr., died last fall, the world of management lost a good executive and the world of research lost a valuable resource. We'll miss him.

CREDITS

The authors would like to thank the proprietors for permission to quote from copyrighted works, as follows:

Bennis, Warren: from "Leadership Transforms Vision into Action," *Industry Week*, May 31, 1982, pp. 54-56. Copyright © 1982 by *Industry Week*. Reprinted by permission of the publisher. All rights reserved.

From *On the Psychology of Military Incompetence*, by Norman F. Dixon. Copyright © 1976 by N. F. Dixon, Basic Books, Inc., Publishers.

Eddy, P., E. Potter & B. Page: from *Destination Disaster*. Copyright © 1976 by Times Newspaper, Ltd., London. Reprinted by permission of Times Newspapers, Ltd.

Heinlein, R. A.: from *Farnham's Freehold*, Copyright © 1964 by R. A. Heinlein. Reprinted by permission of the publisher, New American Library. All rights reserved.

Reprinted by permission of Robin M. Hogarth & Spyros Makridakis, "Forecasting and Planning: An Evaluation," *Management Science*, Volume 27, No. 2, February 1981, Copyright © 1981 The Institution of Management Sciences.

Mintzberg, H., D. Raisinghani, & A. Theoret: from "The Structure of Unstructured Decision Processes," *Administrative Science Quarterly*, Volume 21, June 1976, Copyright © 1976 by *Administrative Science Quarterly*. Reprinted by permission of the publisher. All rights reserved.

effective decisions is still to "do whatever it takes." In the intervening years since the first edition, no one has found the Rosetta stone of decisions. No fancy algorithms were derived that solve our major problems, and no one found a way to replace experience as the managerial teacher. Research on decision making has proceeded apace, and each year adds substantially to our knowledge. Great strides have been made in some areas like artificial intelligence, which is revolutionizing the ways computers work.

But when it comes to human beings making decisions in organizations, the world is, if anything, even more complex, more ambiguous, more difficult than it was a few years ago. If anything, the pace of change continues to accelerate. Managers still have to make decisions on ill-defined issues, without all the information they need, in a context of competing pressures. The trivial and the titanic still tumble out capriciously, showing no respect for anyone's plans or priorities. While we have gotten quite good at programming computers to play chess with us, we still fumble around when it comes to deciding how to cut costs while improving service and calming irate customers.

So we hope the perspective we have tried to provide is timely and useful in the trenches, where absolutes are hard to trust and pragmatic advice is hard to find. We still offer what we think is useful from those who have done research and those who have fought the battles. And, lest any of us take ourselves too seriously, we still leaven this analysis with humor.

Since the first edition was written, both of us have experienced firsthand and in some depth the challenges of managing. Neither succeeded fully in following our own advice. Both of us, however, have emerged with an even deeper respect for the managers and executives out there with the courage and ability to make the decisions on which our organizations depend. In this age of highly publicized greed and corruption, we sometimes forget that the vast majority of us are doing the best we can with what we've got. And many do an exceptional job at a difficult business. We salute the managers who care and dare to try. We hope this second edition offers some ideas that will help them do just a little bit better and feel a little better about what they do.

PREFACE

TO THE FIRST EDITION

Our perceptions of organizational decision-making . . . tend to emphasize the *product* of decision-making—never (or rarely) the *process*. Those elements of chance, ignorance, stupidity, recklessness, and amiable confusion are simply not reckoned with. They are selectively ignored, it seems. Thus, the public rarely sees the hundreds of small tableaux, the little dramas, that result in a policy statement or a bit of strategy. It sees only the move or hears only the statement, and it not unreasonably assumes that such an action is the result of a dispassionate, almost mechanical process in which problems are perceived, alternative solutions weighed, and rational decisions made.¹

[Being a manager is] a lot of fun if you are with people who are supportive, and you have the right kind of financial backing to go ahead with these projects, and if you know what you're doing. (president of a small company)

Our initial intent was to review research on decision making with implications for understanding what managers are up to in organizations. As we began gathering articles, it quickly became apparent that the quantity of material on decision making far exceeds what could be reviewed or even read for a book like this. There are literally thousands of studies available, not to mention the formidable collection of advice for

decision makers. Many different disciplines have had a crack at the topic: economics, political science, public policy, management science, and various branches of psychology—to mention only a few. Different aspects or pieces of the decision process have received attention, including information processing, choice, participation, deciding how to decide and so forth. Different methods have been used, ranging from laboratory experiments to protocol analysis to interviews to case studies.

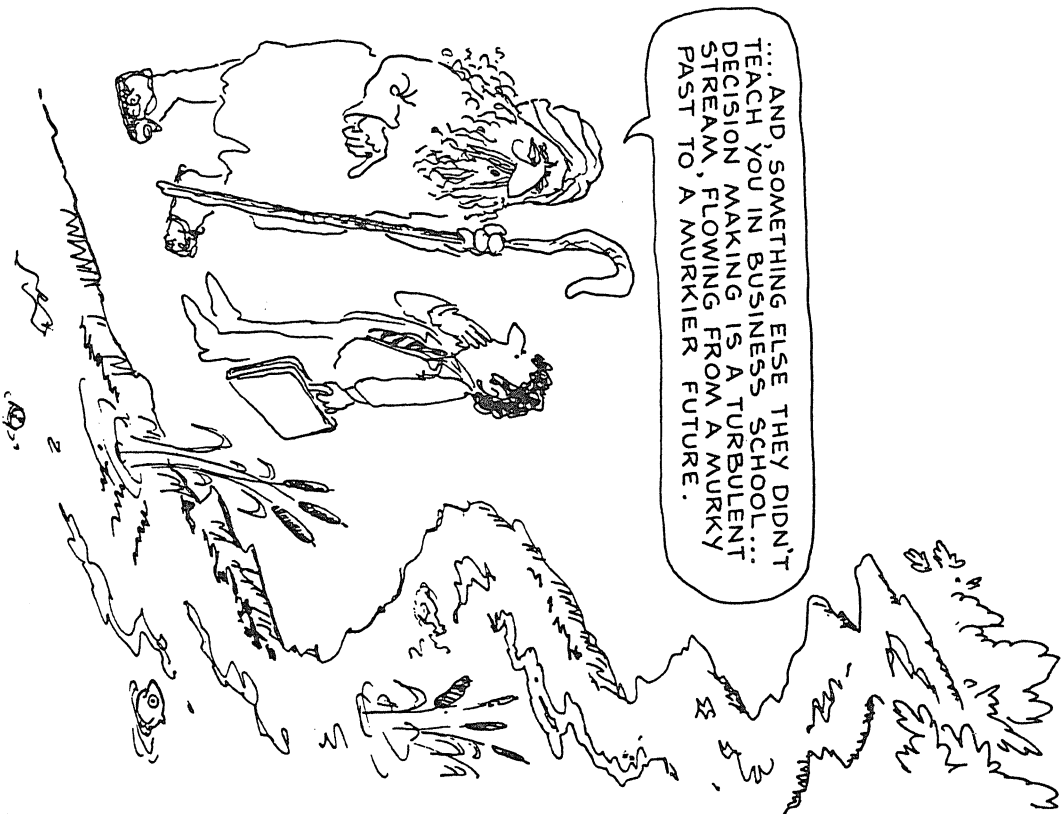
In all this bewildering array, we were struck by the absence of research confronting head-on the messiness and complexity of decision making as it unfolds in organizations. Further, some aspects of the process were virtually untouched. Little could be found on how managers identify problems in the first place, or why they choose to work on some problems rather than others, or how decisions get made in the discontinuous, fragmented, chaotic world of a manager handling many problems at the same time.

Almost in desperation, then, we latched onto a dozen or so studies that had been done in the field with actual decision makers making decisions that counted for something. We used this core to frame the managerial decision process and then tried to add in the vast array of other research and historical accounts were they seemed to clarify or elaborate on something managers did. As the framework took shape, we asked a number of executives and managers to review it for us and tell us if it made any sense. We also took advantage of several work-shops to test our concepts with managers and to collect firsthand accounts of managerial problem-solving situations. Most important of all, we contacted a dozen or so managers and executives we had reason to believe were particularly effective decision makers. We interviewed them intensively about the problems they face, how they identify them, and what they do about them.

What resulted was not the comprehensive review of the literature we had originally contemplated, but rather a focused and sometimes speculative discussion of what managers seem to be doing in their day-to-day involvement with decisions.

DECISION-MAKING THEORY, CLASSICAL AND CURRENT

In the face of the nigh-overwhelming complexity and changeability of the manager's world, management theorists have attempted to define away some of the intractability and thereby reduce the manager's job to manageable proportions. Classical theorists offered what Connolly termed "the proper decision-making sequence": careful definition of the problem, an exhaustive search for information, generation of numerous alterna-



tives, and a calculated choice among the alternatives.² As Burns put it, "classical thinking about executive decision making has viewed the process as an essentially orderly and rational one. A problem is defined and isolated; information is gathered; alternatives are set forth; an end is established; means are created to achieve the end; a choice is made."³ John Dewey is often credited with formulating this systematic approach

to tackling problems. And structure, even for the most unstructured problems, is needed and appreciated. The trouble comes when the attempt to tame unruly problems is carried too far, when our prescriptions are too simple to account for the realities of managerial problem solving.

Managerial decision making is rarely a matter of picking up a single problem and disposing of it in expeditious step-by-step fashion. With every problem comes a context, which includes its own history and the host of related and unrelated problems that coexist with it. "Executive decision making is not a series of single linear acts like baking a pie. It is a process, a sequence of behavior, that stretches back into a murky past and forward into a murkier future. [It is] a turbulent stream rather than . . . an assembly-line operation . . . a twisted, unshapely halting flow."⁴ The laboratory research on human judgment (decision making) has been limited largely to discrete choices taken in isolation and has given short shrift to the "continuous, adaptive nature of the judgmental processes used to cope with a complex, changing environment."⁵ Likewise, the concept of decision making found in western countries emphasizes problems taken out at a time and solved once and for all. This is in contrast to "the Eastern philosophical traditions [which emphasize] individual accommodation to a continuously unfolding set of events."⁶ This book is about decision making and problem solving in context, as the entire interconnected array plays out over time.

THE CONTEXT OF MANAGERIAL DECISION MAKING

Much of the interest in decision making appears to stem from the fallibility of the human decision maker. Things that go awry seem to hold attention longer than things that go smoothly. A lot has been written on the limits of human information processing ability and the numberless personal motives that affect individual choice in spite of the facts. We want to be clear from the start that it is not our intent to condemn managers for their faults. In fact, there are so many reasons that decision making can go wrong, it's amazing how well most organizations actually do. We believe that it is the nature of the managerial job, not simply the limited capacity of individuals, that makes managerial decision making so complex and often so difficult to comprehend.

What is the context in which managers make decisions? One of the most articulate spokesmen on the subject is Leonard Sayles, and the following excerpts give the flavor of what we are dealing with:

- most problems are not solved but only "contained"
- distractions are the reality

- management . . . is dealing with the unexpected that interferes with expectations
- [it is a] never-ending series of contacts with other people
- the pace is fast, pressured, and demanding
- there are no "production functions" for most important questions.⁷

It is, in short, a job where information is transmitted mostly orally and often in fragments; where there is always more than one problem in need of attention; where other people with different values and interests are almost always involved; and where there is seldom enough time to devote to any one issue. These characteristics sharply demarcate *managerial* from other kinds of decision making, such as deciding on the next move in a game of chess or investigating a single problem over an extended period of time. These characteristics also muddy the classic distinction between "problem solving" and "decision making," and we will not make such a distinction here. For managers, problem solving and decision making are part and parcel of the same thing, and what is needed is a new term to encompass both. While waiting for a poet to find the new word, we have used problem solving and decision making interchangeably throughout the book.

A ROAD MAP TO THE BOOK

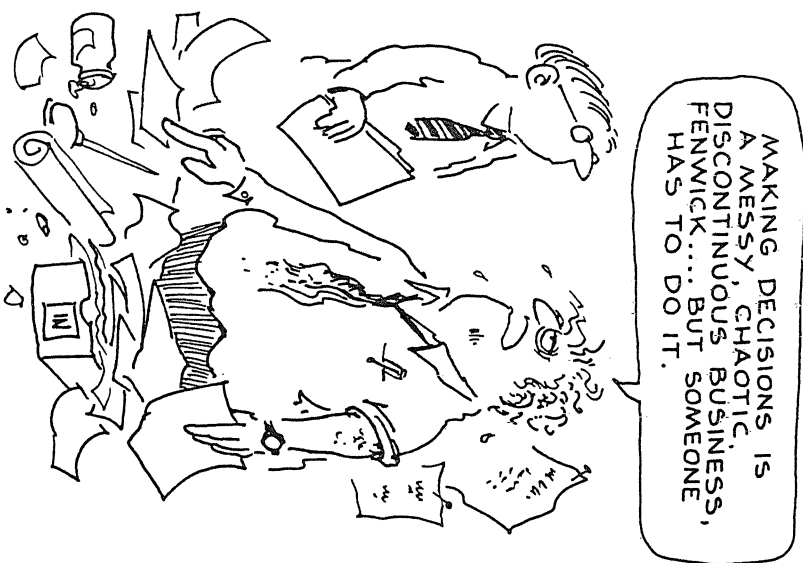
Our goal in this book was to use research on decision making to understand how managers in organizational settings go about making decisions. Because decision making in organizations is a complex process that is hard to observe⁸ and because the process seldom has clear stages that can be discussed as discrete entities, we sought to organize the research to reflect these characteristics. We were only partially successful. After the introductory section, the book is organized as if decision making unfolds in a chronological sequence from recognition of a problem to its resolution. This is clearly not the case. Instead, decisions are made and problems solved in fits and starts. The process is like a flowing stream, filled with debris, meandering through the terrain of managers and their organizations. There is no clear beginning or end. This is the message of Chapter 1.

Chapter 2 of this book deals with recognition of problematic situations. Just how is it that jumbles of facts and events get interpreted as problems in the torrent of information and situations? The ways managers interpret these streams, punctuate the reality,⁹ is a key to understanding why and which problems get recognized. Organizational structure and procedures are intended to channel these streams to and through managers, sometimes providing at least a partial problem definition in

the process. Other problems, and especially opportunities, may not flow through structures, and structures often carry problems and events to the wrong places.

Chapter 3 tackles the issue of why some problems get worked on and others are ignored. Just how is it that managers, aware of many problems that need attention, set priorities? There is more than enough going on to keep managers busy all day. Awareness that problematic situations exist is insufficient to guarantee doing anything about them. The manager's day is highly fragmented, full of brief episodes on a myriad of issues, overloaded with information, largely oral and interactive, current-focused, and filled with a capricious interspersion of the mundane and the significant.¹⁰

Attacking problems is often a messy business. Identification, definition, discovery of alternatives, evaluation, and sometimes choice can



MAKING DECISIONS IS
A MESSY, CHAOTIC,
DISCONTINUOUS BUSINESS,
FENWICK... BUT SOMEONE
HAS TO DO IT.

occur simultaneously, or vaguely, or not at all. "Muddling through," "groping brick by brick" may be generous descriptions of what actually happens. Chapter 4 examines problem-solving cycles by looking at what happens to problems that attract someone's attention. Some problems get immediate action while others go through a complex, convoluted decision process.

Chapter 5 looks at what happens after decisions get made, at how they cling together or silently slip away. Many problems never really get solved, they just get held off a little longer. They tend to reappear in altered forms at another time or another place. It is often hard to know what happened, and sometimes managers don't even know that a decision was made. Choices often return to the stream, only to create new problems for someone else, to lie dormant and reappear later, or to evolve to a new stage altogether. Patterns in streams of decisions have been described as strategy,¹¹ reflecting that fragments returning to the stream have a larger existence either by accident or design. (See Figure P-1 for display of the major elements of the book.)

Finally, Chapter 6 outlines some implications for managers, organizations, training, and research. It suggests that thinking of decision making as an orderly, logical process, then training managers to do it that way, is not likely to make much difference.

In general, the book is intended to accomplish two purposes, which may on the face of it seem to conflict. The first purpose is to show what managers are up against as they move through the crowded and shifting vistas of problems, people, pressures, and resources. The second purpose is to suggest rules of thumb for managers to use as they attempt to find direction and achieve movement. In our effort to offer something pragmatic, we draw on the experience of veteran managers, who address the reader in their own words. Our goal is to do justice to the stiff challenges inherent in taking managerial action and at the same time to provide a modicum of guidance for taking effective action.

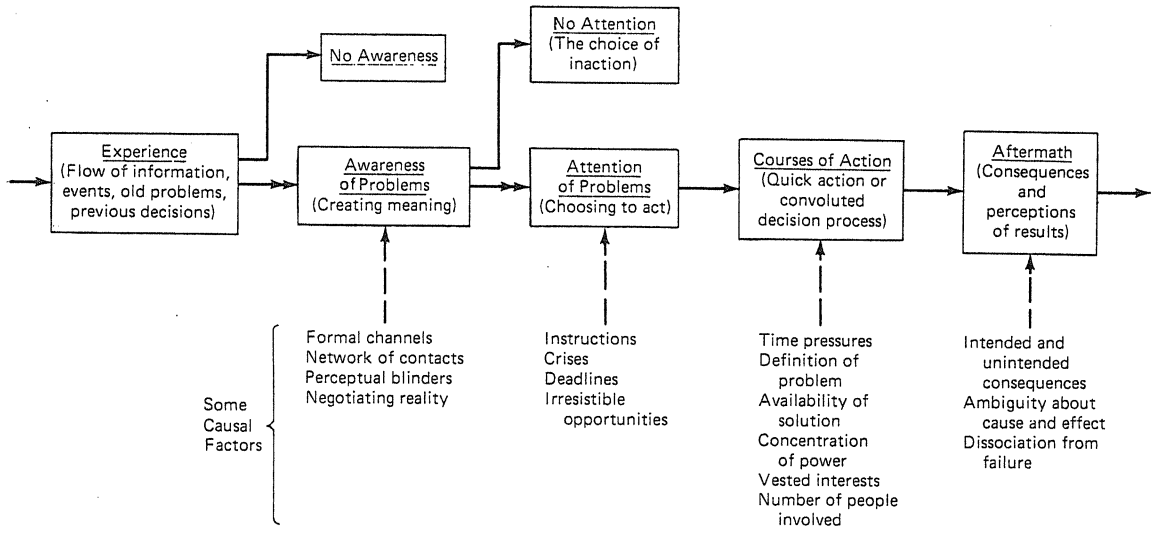


Figure P-1 Streams of Decisions

1

THEY HAVE SOWN THE WIND

AND

THEY SHALL REAP THE

WHIRLWIND

A klaxon goes off. Plus nine seconds.

BERKOZ: "What happened?"

ULUSMAN: "The cabin blew out."

Eleven seconds.

BERKOZ: "Are you sure?"

Sixteen seconds.

BERKOZ: "Bring it up. Pull her nose up."

ULUSMAN: "I can't bring it up—she doesn't respond."

Twenty-three seconds.

AN UNIDENTIFIED VOICE: "Nothing is left."

ANOTHER VOICE: "Seven thousand feet."

Klaxon sounds, warning that the plane has gone over the "never-exceed" speed. Thirty-two seconds.

MANAGERIAL PROBLEMS: THE EMERGENCE OF MEANING

Most of the research on decision making starts with a recognized and defined problem: The task of the decision maker is to come up with a solution. As we reviewed the research, we could find very little on the nature of the problems faced by managers, where the problems came from, or how they got defined. What little we could find about "problem finding,"¹ as well as what is known about the complexity of managerial jobs,² suggested that figuring out what the problem is might be half the battle, especially in a managerial environment.

To explore this issue, we began by asking managers two simple questions: "What kinds of problems do you deal with every day?" and "To what extent are these problems clearly defined when they get to you?"

WHAT ARE THE PROBLEMS?

I think at one time or another I've been involved with every kind of problem there is. I don't know of any I've been lucky enough to escape. (Company president)



PROBLEM...SOMETHING THROWN FORWARD.

The things that managers have to decide about are, as one might expect, highly diverse. They range from gut-wrenching personnel decisions ("I guess the hardest decisions really involve letting some good people go—people in key positions that you've worked with for years who may have developed mental problems, or family problems, or liquor problems that they couldn't overcome") to decisions involving huge financial risks ("This was a multimillion dollar venture and we didn't have any time to lay the groundwork if we were to get into the game"). They involve the mundane (assigning parking spaces, remodeling the cafeteria) and the colossal (opening the doors for trade with China, setting up joint ventures overseas). And they involve the myriad of issues that affect "getting the product out the door" while remaining solvent:

[The problem] could be in a competitive area where prices are being cut. It could be not having the kind of equipment to do a certain type of work. It could be not having the right people to do the job. It could be not having the right kind of financing.

No matter whom we talked to—whether first-level manager or company president, whether the company was large or small—the diversity of problems was astonishing. Asked for examples of immediate issues facing them, eleven general managers responded with items like the following:

- getting rid of 75 rail cars that everyone dealing with a shutdown forgot about—creating a cash drain of \$2.5 million;
- a problem about a competitor who is also a supplier;
- news of an infringement on a patent for a major product;
- a phone call from a customer wanting to buy one of the division's small businesses;
- a phone call from a supplier who wants to sell a piece of equity in his business;
- a proposal the GM made to headquarters to install a system of incentive compensation in the division—the corporation is resisting;
- a \$2 million claim against the company made by a customer in France—"We screwed them and now we have to negotiate";
- a meeting with a supplier about a new product it has come up with;
- a meeting to troubleshoot problems with a pilot plant for a new product;
- a bid from a major customer (to buy large quantities of the company's product);
- a decision on a price increase and how to increase the chances of its being accepted;
- how to get approval from a federal regulatory agency for a new kind of product;
- how to export a new product that is still prohibited in the U.S.;
- a meeting with U.K. representatives on incentives they will offer the company to build a plant there;
- a personnel change in a key position;
- a customer's request for a price concession on a product that lost \$16 million last year.³

These and many other items of lesser and greater significance constitute the daily fare of general managers. As our GM told us, "Every hour is filled with these kinds of issues."

Although most of the general managers' issues listed above are business related, managers spend a great deal of their time dealing with process problems: how to organize to solve business problems. In a study of how executives think, Isenberg determined that "foremost among their conscious thoughts are the processes for accomplishing a change or implementing a decision."⁴ Whose support do they need and how can it be obtained? Whose likely resistance must be overcome and how? What mechanisms need to be put into place to achieve the desired outcome? We also found that managers seldom face just one problem at a time.

At one point we asked forty managers to list the problems they had on their desks and found that on a given day managers had an average of five issues to confront, not counting the unexpected crises that were likely to appear. Further, the problems that confront managers at a given time are often interrelated so that action on one must be taken in light of the problem's relation to others.⁵ A general manager knows that if he decides to raise prices as a way of increasing profits, he may open the door to increased competition which could eventually cut into market share and lower profits.

Another feature was the problems most often appeared with little regard for the manager's schedule.

You just have to make time in the schedule to do the things that are important when they come. If it's a ten-hour day, well that's fine. Or if it's twelve or fourteen you still have to go ahead and do it. Period.

Because there are new problems each day, and because many problems get worse if they are ignored, managers talked continually about "identifying problems early" and "nipping them in the bud." As we shall see later, this ability to detect problems early not only helps in day-to-day decision making but can be essential in handling crises (see Chapter 4). An especially tricky aspect of managerial decision making is that managers themselves may be implicated in any problem they pick up. Maybe that turnover problem is somehow related to the manager's leadership style; perhaps the cautious, slow-to-innovate posture of the organization derives from the manager's autocratic, risk-averse approach to leading. As much as managers may want to treat problems as residing entirely outside themselves, they must be continually open to understanding themselves in relation to problems.⁶

The portrait of managerial problems that emerged was a blending of complexity, diversity, fast pace, and lack of control over when problems appeared. In this context, the derivation of the word *problem* is interesting. It is derived from the Greek word *proballain* which is the composite of *pro*, meaning forward, and *ballain*, meaning to throw. Thus, *problem* literally means "something thrown forward."

ARE THE PROBLEMS CLEARLY DEFINED?

As one might expect in the maelstrom of things thrown forward, some problems are well defined from the outset, either in fact or at first glance. As one company president put it:

In a small corporation there is never any problem knowing what the problem is. There's likely to be some guy in there pounding at your door threatening to whip you.



In some cases, not only is the problem well defined, but it is presented to the manager with a solution already attached. "The engineering drawings are late; we need more people to get them out on time."

In the corporate setting, the balance is a primary herald of problems:

You find out about your problems when you look at financial statements. If you're not operating at a profit, you have a problem of varying degrees. When you start running into red ink, the problem gets progressively more serious as the months progress and you run into more red ink.

In fact, much of a manager's job involves the identification of discrepancies—differences between an existing and a desired state of affairs—that announce the presence of problems.⁷

Managers sometimes detect discrepancies by comparing an existing state of affairs against some standard. One such standard is the past, against which managers continually compare the present in search of differences. Quantitative indicators lend themselves well to this kind of monitoring.

Why is our inventory drifting out of line? Why is our reject rate so high this week? What has happened to make so many deliveries late? What can be done to reverse the trend in absenteeism? Why is our safety record suddenly

so good? All these problems and a host of others can keep a manager and his organization busy all day every day.⁸

A second yardstick used in organizations is plans and forecasts. Managers are evaluated against the goals to which they committed themselves.⁹ They are held responsible for reaching certain levels of sales, profits, costs, and other performance variables.¹⁰ Above these levels the rule is, "If it ain't broke, don't fix it." But if a variable falls below the planned-for level, a manager faces a problematic situation calling for some kind of resolution. A third standard applied to the performance of a manager's unit is the performance of other, presumably comparable, units within the same organization and sometimes in other organizations.

Discrepancies of these three kinds indicate the possible existence of a problem. The first sign of trouble sometimes tells the whole story, but not very often. When word of a problem first reaches a manager, it signals the beginning of the attempt to "find" the problem. As the problem begins to appear, its recognition triggers a series of search-and-interpret missions to reveal what lies beneath the surface. So even when their presence is clearly signaled, the true scope and meaning of problems can remain submerged.

In the extreme case of an ill-defined problem, its very presence must be intuited (and could easily be missed) and its meaning is deeply buried:

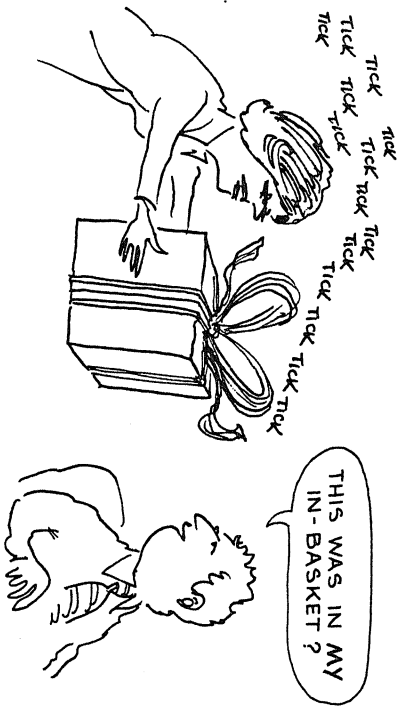
Every problem you have is because there is something wrong with the design—of the system, or the product, or the management, or the selection process—otherwise you wouldn't have a problem.

You have to be really good at clues because you get clues from people or you see things happen that just don't seem to fit together. If you don't try to figure out why, you think it's just one of those things that "just happened to happen." (Corporate vice-president)

Such problems evoke an image of the manager as sleuth, a far cry from the pugilistic manager facing "some guy at the door threatening to whip you."

There is clearly, then, a continuum of problems that lands on a manager's desk, from the virtually prepackaged to the completely ill-defined. To get some idea of how problems are distributed along this continuum, we again asked our forty managers to consider the problems they had on their desks. We asked them to arrange their problems along a five-point scale, with "1" indicating the prepackaged and "5" the ill-defined. The result was almost even distribution of the 214 problems, with approximately equal numbers at each point on the continuum:

PREPACKAGED					ILL-DEFINED	
1	2	3	4	5		
22.4%	18.2%	22.9%	15.4%	21.1%		



PROBLEMS RARELY COME GIFT-WRAPPED.
OF COURSE, THERE ARE OCCASIONAL EXCEPTIONS.

What is “thrown forward” may be crisp and clear, or it may be an enigmatic clue to some amorphous beast lurking out there. But even in the clearest case—the clear problem that comes complete with solution—what meets the eye may have little to do with reality. Earlier we mentioned that the engineering drawings were late, and more people were needed to get them done on time. Add one fact: The product was still getting out on time in spite of the late drawings. One might conclude now that the due dates were wrong—that the drawings weren’t needed any earlier and therefore the staff was adequate. Or, as the manager in this case finally discovered, that the drawings weren’t needed at all, and the unit was in fact overstaffed.

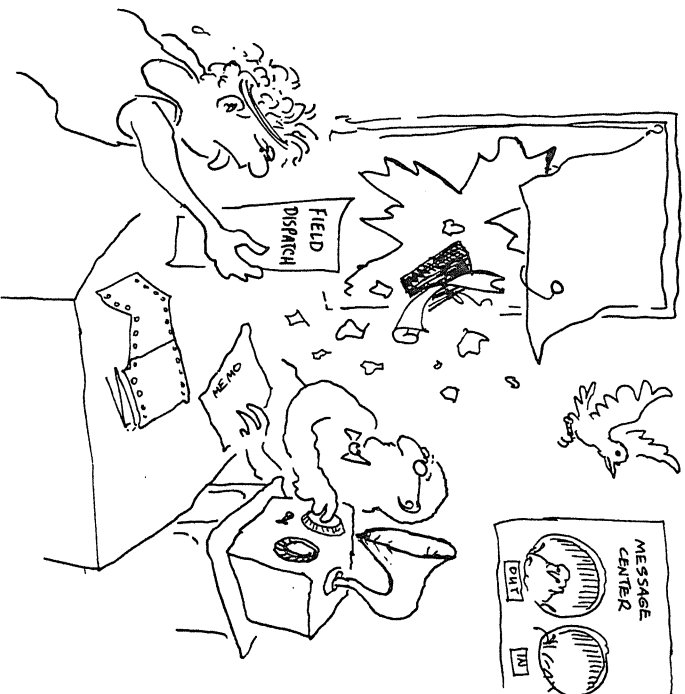
What all this means is that the problems managers face are, in reality, clusters of information and observations from which meaning emerges. There is more than a grain of truth in the aphorism that “a problem is what you make of it.” What is thrown in the manager’s direction may be raw information, analysis, or explicit statements of problems. Those who are throwing the problems may throw them straight or toss curves. On its way to the manager, the problem may fly unimpeded, or it may be transformed in some way, or even be intercepted.

In these metaphorical terms, we mean to suggest the unpredictability of recognizing problems in organizations. Stressing the failures in the intelligence-gathering process, Wilensky described the vagaries of recognition:

Sources of failure are legion: even if the initial message is accurate, clear, timely, and relevant, it may be translated, condensed, or completely blocked

by personnel standing between the sender and the intended receiver; it may get through in distorted form. If the receiver is in a position to use the message, he may screen it out because it does not fit his preconceptions, because it has come through a suspicious or poorly regarded channel, because it is embedded in piles of inaccurate or useless messages (excessive noise in the channel), or, simply, because too many messages are transmitted to him (information overload).¹¹

Streams of information, events, old problems, and previous decisions flow directly, or through a maze of intermediate channels, to a manager who, in turn, fashions meaning from them. To understand how problems get defined, we must understand two things about information: first, how it gets sorted, filtered, and organized; and second, how the individual manager, alone or in concert with others, fashions meaning from it. While these two elements are not always separate, we’ll examine them sepa-



STREAMS OF INFORMATION FROM MANY
CHANNELS CONVERGE ON THE MANAGER.

rately. First, we will look at the flow of information; then we will see how managers make sense of information.

THE FLOW OF INFORMATION

Managers can be called "information workers", a manager is a craftsman whose raw material is information. Most managers spend most of their time with other people, and with these people they go about the business of exchanging information.¹² What little time managers get to themselves, uninterrupted by people or calls, they spend reading (absorbing information), thinking (processing information), and writing (disseminating information). There is a craft in which meaning and decisions are fashioned from the whole cloth of information.

But an information worker is only as good as the material he or she has to work with. Thus, we come to the question: Where does a manager's information come from? Managers have many sources, including (a) systems and structures set up to keep them apprised of ongoing events, (b) the people around them who volunteer information and can be approached in search of trouble signs, clues, and missing pieces of puzzles, (c) the values of the organization, which point people in certain directions and define the critical variables in a complex array of possibilities, and (d) the manager's own direct experience.

Systems, Structures, and the Flow of Information

Important aids to a manager's continuing quest to stay on top of developments in his or her area of responsibility are the various formal management information systems. These systems process data on innumerable aspects of organizational performance. These data are condensed into indicators by which departures from past performance or deviation against future targets can be detected readily. Their importance to managers cannot be underestimated. Like the control panel in the DC-10, these indicators are the warning lights and buzzers that monitor vital systems.

While information systems serve managers, they also play to human weaknesses. For example, people (and managers in particular) are inveterate seekers of information, and given some uncertainty, they will seek more information than is required. As numerous studies have shown,¹³ beyond a certain point, more information does *not* improve the accuracy of decisions, but it does increase the decision maker's confidence in, and satisfaction with, the decision. By making available almost limitless data, a complex information system can contribute to managerial informa-

tion overload and result in a paralysis of action.¹⁴ Further, access to large amounts of information has been shown to result in *selective use* of that information to bolster a preconceived position, leading some managers to focus on the information supporting their decision while ignoring the information that goes against it.¹⁵

Because of their quantitative and logical formats, information systems can have additional detrimental effects. For example, Hogarth and Makridakis reviewed studies showing that "logical data displays" can cause people to overlook critical pieces of a problem that are not addressed in the underlying logic of the data analysis. The internally consistent logic may belie the fact that the basic assumptions were faulty or incomplete, or that the data comprising them were questionable in the first place ("garbage in, garbage out").

Also, the availability of quantitative analysis, particularly in efforts to forecast the future, can lead to a dependency on such analysis; this may increase managerial comfort without improving accuracy. This situation can be so pronounced that managers lose sight of the costs of additional information:

A recent case that came to our attention was the expenditure of \$20 million to plan and forecast a \$160 million investment. However, a detailed analysis of the situation and possible errors in forecasts indicated that even perfectly accurate forecasts would not be worth anything like \$20 million. In some situations, even perfect knowledge of the future has relatively little value.¹⁶

Even under the best of circumstances, formal information systems simply point out that a problem may exist. The meaning of a discrepancy in the numbers, and often whether or not a discrepancy is significant, remains a managerial judgment.

Information systems are one way that information gets to the manager. Additional formal channels for transmitting information to the right people are provided by organizational structure. "A basic function of an organization structure is to channel problems which are identified by its various members to individuals especially qualified to solve them."¹⁷

Hierarchy is one fundamental organizational arrangement that serves this function: Certain people are given responsibility for the novel or unexpected events occurring in the areas below them.¹⁸ But, even for managers with impressive mental capabilities, information flowing through the hierarchy can become overabundant. Kotter describes the plight of the general manager:

In the case of a typical GM, thousands of people, most of whom were not physically located close to him, were somehow involved in his operations on a daily basis. Under these circumstances, simply trying to monitor daily or weekly operational activity can be extremely difficult. The most impressive

information-systems technology available today cannot monitor all this activity quickly and accurately. Even if it could, a GM could spend twenty-four hours a day simply trying to digest that information. Furthermore, under these circumstances, the sheer volume of relatively minor short-run problems can be enormous.¹⁹

This kind of assault upon a manager's senses can lead to information overload. Let us say that a manager is responsible for a plant in which various structures, policies, and procedures are available to govern the routine operation of the plant. When exceptions on the shop floor arise, they are frequently referred to the manager. "That is, the new situation, for which there is no preplanned response, is referred upward in the hierarchy to permit the creation of a new response."²⁰ The result is that as more new situations occur, and as more exceptions are referred upwards, the manager eventually becomes overwhelmed.

Specialization is another basic type of organizational structure that channels problems and information by setting up functional units responsible for certain classes of problems. This division of labor is necessary because many complex problems exceed the capacity of one or a few individuals to comprehend. As a result, problems are broken down into manageable pieces and assigned to different functional units. Specialization aids problem recognition by limiting the sights of each set of specialists, thus making it easier for them to recognize the problems of special relevance to them. Specialization also helps by giving the organization a clearly designated place to route certain classes of problems.

Unfortunately, specialization, like hierarchy, enables but also impedes problem recognition. Specialization is notorious for leading to rivalries among specialists and a corresponding tendency to distort information to advance the interests of a specialty. Wilemsky gave an example related to Pearl Harbor:

In the armed forces, intense rivalries between services and within service—among supply and procurement, plans and operations, research and development, intelligence—lead to intelligence failures. . . . In 1941, the signals of the pending attack on Pearl Harbor lay scattered in a number of rival agencies; communication lines linked them but essential messages never flowed across the lines, let alone to the top. The Army and Navy presented a picture of cordial, respectful communication, empty of solid substance.²¹

A further difficulty associated with specialization is that information sometimes ends up in the wrong function. Preoccupied with their own specialized area and lacking a firm grasp of other specialties, functional managers may not transmit the information to the right place. The more ambiguous or novel the information, the more likely it is that channeling mistakes will be made.

In summary, tried-and-true structures like hierarchy and specialization, and the new information technologies, serve major roles in the recognition and definition of managerial problems. With the aid of these methods, bits and pieces of information are sorted, sifted, analyzed, and channeled in more or less usable form to more or less the right people. Systems and structure, however, are seriously limited in many ways. Most managers recognize this, realizing that ultimately other people are the major source of information.

Other People as Sources of Information

Managers are dependent on the people around them to provide needed information. As one executive put it: "What else is there to do but talk to the people who work for you, and your customers, and your suppliers?" But even under the best conditions, people volunteer information to the manager only up to a point, and then powerful inhibitors take over:

People who bring information to a manager are sensitive to the reception they get, and nothing shuts them off faster than a discouraging response. Some managers treat others who conscientiously call a problem to their attention as if *they* were the problem. It takes only one or two "beheadings" to stop people from bringing bad news, especially subordinates. In some cases, even a lack of interest is sufficient to inhibit the flow of information. An agency director we know did not seem to care about the performance of the units reporting to her, and, as a result, her department heads were only too willing to smooth over shortfalls in the performance of their programs.

The problem of getting reliable information from others is especially pronounced when those others are subordinates. Managers have the power to reward and punish, giving subordinates an incentive to find and dispose of problems. But dependence also creates a disincentive to report information that may cause a loss of favor. In one study of fifty-two managers and their direct superiors, it was found that managers were more likely to withhold information about problems in their work if either of two conditions existed: The managers had strong ambitions for advancement, or they didn't trust their superiors.²² Similarly, Lyles and Mitroff, in a study of thirty-three upper-level managers, found that:

Fear and political power were recurring themes affecting the formulation of problems. At all organizational levels there were individuals with fears caused by various pressures such as personal failure, threats of punishment, organizational failure, or time constraints. Fear of punishment or failure could even cause a person to try to cover up the real problem. . . . Some managers obscured problems and even deliberately distorted information in order to protect their positions. Thus, any formulation of a problem that identified conflict or past errors in judgment was avoided or obscured.²³

As Wilensky put it, "In reporting at every level, hierarchy is conducive to concealment and misrepresentation; subordinates are asked to transmit information that can be used to evaluate their performance."²⁴ Thus, powerful dynamics can cut off decision makers from their supply of information, and problems and negative information are not necessarily "thrown forward" to them.

Given the inhibitors to a full flow of information, managers cannot afford to wait for information to come to them. Not only must they actively encourage people to keep them informed, they must actively pursue information themselves. In an in-depth study of fifteen general managers, Kotter found that what distinguished effective from less effective managers was how aggressively they sought information.²⁵ Bennis has noted that "people in power have to work very hard at getting people to tell them the truth; the right people will, and the right bosses will hear it."²⁶ Halberstam provides an object lesson on this point in an anecdote about a briefing that Robert Kennedy, as attorney general, received in 1962 on a trip to Saigon:

He was supposed to be briefed at the airport terminal by [top staff members] all of whom, in one another's presence, assured him that everything was on target. "Do you have any problems?" he asked. No, said everyone in unison, there were no problems. He looked at them somewhat shocked by the response. "No problems," he said, "you've really got no problems? Does anyone here want to speak to me in private about his problems?" And then one by one they talked to him at length and it all came pouring out. . . .²⁷

Managers keep their fingers on the pulse by cultivating a network of job-relevant relationships and by staying in regular contact with the people in their network. A manager may well be in *daily* contact with key people.²⁸

Another aggressive strategy for rooting out information is going outside normal channels. If formal channels block or distort information flow, the executive does well to "cut new channels of intelligence," especially for novel or extraordinary problems. They "bypass the regular machinery and seek firsthand exposure to intelligence sources in and out of the organization."²⁹ Sayles and Chandler have described this as an improvised give-and-take geared toward identifying and eventually solving specific problems.³⁰

Thus, organizational machinery such as formal information systems, and formal channels of communication keep the manager informed—up to a point. But effective managers take an aggressive posture toward getting information from other people. They ferret out what is useful from the pile of information arriving on its own and root out further information that would otherwise never make it because of the powerful constraints that sometimes prevent information from flowing in organizations.

Values as Information Conduits

No discussion of the sources of information in an organizational setting is complete without considering organizational "culture" or "values." While systems, structures, and people are tangible (if erratic) sources of information, values are often quite nebulous (though a strong enough value system may translate into quantifiable standards). The impetus for this discussion comes from a book that attempts to identify the sources of excellence in effective companies:

Virtually all of the better performing companies we looked at . . . had a well-defined set of guiding beliefs. The less well-performing institutions, on the other hand, were marked by one of two characteristics. Many had no set of coherent beliefs. The other had distinctive and widely discussed objectives.³¹

Throughout their book, Peters and Waterman give examples of corporate values that have profound effects on the types of information to which managers attend. Unlike specific objectives or other situationally induced reactions, these values are etched into the corporate fabric. For example, IBM's emphasis on service to the customer is described by the authors as an obsession. This emphasis probably leads IBM managers to search for customer-related information in a totally different way than do managers in a company without such values. Frito Lay provides another example with its "99.5 percent service level" (all customers stand a 99.5 percent chance of getting a daily call from a route salesperson), a goal that can't help but sensitize managers in Frito Lay to information that would not be seen as important somewhere else.

Another example, in a different sphere, also comes from IBM. Peters and Waterman quote an IBM executive as saying:

You can foul up on most anything and you'll get another chance. But if you screw up, even a little bit, on people management, you're gone. That's it, top performer or not.³²

While this may be an overstatement, even a semblance of value that strong has to result in a greater sensitivity to information about the people who work for you.

By referring to corporate values as sources of information about problems, we are not ignoring the importance of the values individuals bring to the system. Rather, we are suggesting that overriding corporate themes affect large numbers of managers in similar ways and can result in quite different information patterns in different companies. These larger values can have pervasive effects on

- what information is considered relevant
- who sees the data
- who cares about it.

The result, we would guess, is that managers “see” more customer service problems in IBM and Frito Lay than elsewhere, not because there are more problems, but because they are more focused on such information. Information relevant to the value theme is more likely to reach the manager, in more detail, and have more implications. Thus, the threshold at which information reveals a problem is lower.

Direct Experience

A final source of the bits and pieces that become problems—and perhaps the most compelling source—is the direct, hands-on experience of a manager. There is research evidence that concrete information based on firsthand experience dominates secondhand information,³³ or as General Patton observed, “one look is worth a hundred reports.”³⁴ The theme of “seeing for yourself” pervades our interviews with managers and executives, and it covers virtually all aspects of the business. They repeatedly describe how, as a result of their own direct effort, they got to know about things such as the following:

The boss:

You’ve got to understand where his hot buttons are.

Information sources:

When you know your organization pretty well, you have a pretty good idea who’s giving you the straight dope and who’s trying to beat around the bush.

Company directors:

You generally know who’s on your side on the board of directors and you might approach those individuals . . . to discuss it with them before you present it to the whole board.

The city:

I’ve lived around here a long time. I know a lot of people. I make it my business to study things as well as I can, area and locations, the way the city is growing. It’s part of my job to locate our operations in the best possible sites.

The business:

The first thing I did was get out on those raggedy old [oil] rigs and get to know the people in the organization and the customers—I got to know as many of them as quickly as I could.

Employees:

You have to have some people around you that can help you when you need help. You have to have someone who is competent in operations, in your controller’s end of the thing, in sales. When it comes right down to it, they’re the people you have to call on to do the job.

This theme—you’ve got to know it firsthand—underlies all phases of the decision-making process.³⁵ To recognize a problem you’ve “got to have a feel for it”; to establish the credibility of your sources you’ve “got to know the people”; to trust the numbers you’ve “got to know where they came from.” It is this intimate knowledge, this personal understanding of the business and the people associated with it that allows managers to sift through the overload of information, to pick out the bits and pieces that singly or together define important problems:

You have to know. You have to have very keen hearing. It comes at you in very unique ways, ways you never expect it. You hear one thing here, one thing there, and you’ve got to put that story together in your mind. Now a lot of times the thing you fabricate is wrong, but by the very act of trying to put it together, you get more data.

The Flotsam and Jetsam That Become Problems—A Summary

There is no shortage of raw information from which problems are fashioned. Organizational systems and structures, constant interaction with a wide variety of people, strong corporate beliefs and values, and direct experience all channel, sort, organize, and otherwise influence the information flowing to a manager. Sometimes the meaning of the bits and pieces is immediately evident; getting the information and recognizing the problem are simultaneous. More often, however, the manager must dig, must struggle with the linkages, to fashion meaning. Because of the ambiguity in the raw information, the fallibility of the systems, structures, and people that channel and interpret it, and the inherent limits of individuals as they process complex information, problem finding is—well, problematic.

As we stated early in the book, decision making does not unfold in discrete, sequential stages. We are already forcing a distinction between the information available to a manager (the previous section) and making

sense of that information (the topic of the following section). Getting information and knowing what the problem is often occur simultaneously, and sometimes solutions emerge along with them. But we believe that for a high percentage of problems, meaning does not spring forth, but rather emerges slowly. Meaning can emerge as the manager digs for information (or stumbles into it) and gradually sees connections that define a problem. It can emerge as successive definitions of the problem are refined, modified, or discarded with the advent of more information. Or, it may emerge from a more complex and somewhat disorderly process of trial and error, where information, interpretation, and action intermingle, at some point revealing the "real" problem.

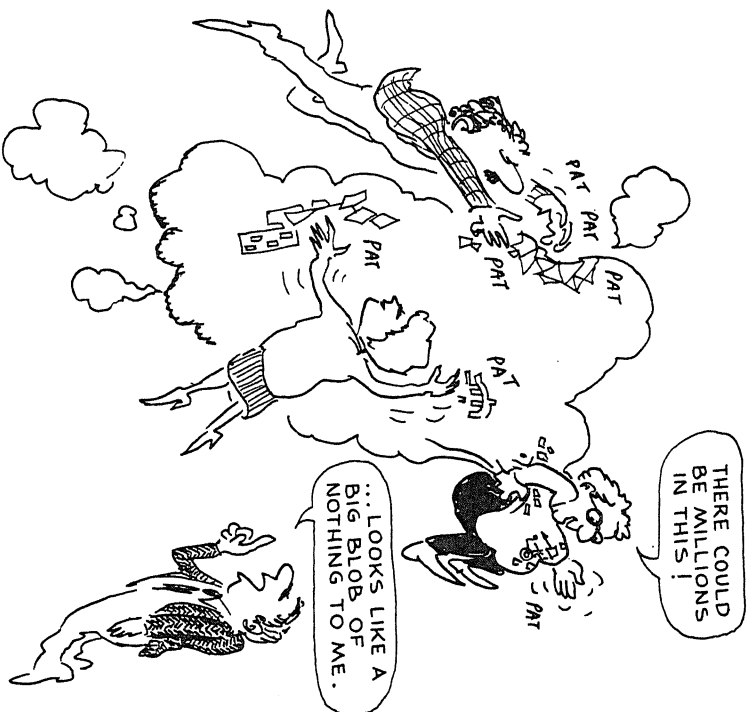
MAKING SENSE OF THE PIECES

Because of the complexity already noted, information, events, and observations are not themselves "problems"—there is instead some process by which meaning is attached to raw information. It may be instantaneous—as an experienced pilot's response to a warning light—or it may be more labored—as when a committee struggles for months to get all the facts together and draw a conclusion. The more novel, ambiguous, or complex the problem is, the more difficult it will be to put the informational pieces together, and the more likely it is that early problem statements will be erroneous or simplistic.

This section, then, addresses the issue of interpolation—making sense of the pieces. Once information reaches a manager, by whatever route, how is it used to recognize problems? As managers confront incoming information, they are first of all affected by the fact that all human beings can only process so much information, and fallibly at that. Second, as they attempt to interpret the data, they are aided (and hindered) by their own experience—all people simplify the world by constructing mental "maps" of what causes what, what is connected to what. We must simplify to survive. Third, neither managers nor scientists, no matter how valiantly they strive for objectivity, are emotionally neutral about the problems they face. And fourth, managers define reality not only in their own heads but in conjunction with the people around them. Because people often disagree about what reality is, "my reality or yours" may have to be decided by negotiation.

You Can Only Process So Much

Because information is the lifeblood of a manager's job, the good manager welcomes it, encourages it, and goes after it. As we have clearly suggested, without an ample and regular supply of valid information, a



MANAGERS HAVE TO SHAPE REALITY.

manager wouldn't know about emergent problems, much less be able to do anything about them. But human information-processing capability is limited, and managers are not exempt. It has been estimated, for example, that managers can retain only 1/100 to 1/1000 of the information to which they are exposed.³⁶ Furthermore, most people are able to hold in short-term memory only about seven pieces of information.³⁷ Albert Im-pressive, human cognitive ability is indisputably bounded.³⁸

Managers cope with the profusion of stimuli by employing strategies that make the task more manageable. To stretch short-term memory, for example, people "chunk" events together so as to retain greater amounts of information. If the approximately seven bits of information consist of small *patterns*, themselves containing bits of information, then the ability to retain and process information is increased several fold.³⁹ Another

strategy is to "segment" the stream of stimuli into smaller, familiar units that can be worked on sequentially.⁴⁰ Thus, managers don't deal with raw information bit by bit, but interpret it in terms of *preexisting* categories or patterns. This creates a tendency to force incoming information into pre-existing mind sets, even if it doesn't really fit.

Of all the areas of research on decision making, the biases (limits) associated with processing information are by far the best documented. Managers, perhaps more than the rest of us, confront a complex environment characterized by information overload and pressure to act on incomplete (and often ambiguous) data. And the pitfalls are legion. To give you

TABLE 2-1 A Few of the Many Information Processing Biases

Bias/Source of Bias	Description/Example
Availability	<ul style="list-style-type: none"> If a person can easily recall specific instances of an event, he/she may overestimate how frequently the event occurs (and vice versa). Chance events or cues can hinder or help by pointing a person in a particular direction. What one expects to see biases what one does see. People seek information consistent with their own views. People downplay information that conflicts with a consistent profile.
Concrete Information	<ul style="list-style-type: none"> Vivid, direct experience dominates abstract information; a single personal experience can outweigh more valid statistical information.
Data Presentation	<ul style="list-style-type: none"> The items presented first (primacy) or last (recency) in a series assume undue importance. Whether information is collected sequentially or all at once affects what is processed.
Inconsistency	<ul style="list-style-type: none"> People have trouble applying a consistent judgmental strategy across similar cases, even though they believe they are consistent.
Law of Small Numbers	<ul style="list-style-type: none"> Small samples are deemed representative of the larger population (a few cases "prove the rule"), even when they are not.
Complexity	<ul style="list-style-type: none"> Under time pressure, processing of complex information may be quite superficial.
Gambler's Fallacy	<ul style="list-style-type: none"> Seeing an unexpected number of similar chance events leads to belief that an event not seen will occur (e.g., after observing 9 successive reds in roulette, believing chances for a black on the next roll are greater than 50/50).

Condensed and adapted from Robin M. Hogarth and Spyros Makridakis, *Forecasting and Planning: An Evaluation, Management Science*, Vol. 27, No. 2, February 1981, pp. 117-120.

an idea of just how awesome human bias is, we've adapted a summary table (Table 2-1) from a recent review of research by Hogarth and Makridakis.⁴¹

We Have to Simplify to Survive

But we're not finished yet. Information, already distorted, still must be aggregated into a coherent view of "a problem." One way that people cope with an abundance of information—with the "bloomin', buzzin' confusion"—is to slice it up into their own cognitive categories. Individuals depend on their intricate web of "personal constructs" to channel their perceptions and actions,⁴² and managers similarly employ maps of their world to help them see what is relevant to their work. This cognitive set is indispensable to managers threatened by a high tide of information. Managers develop mental sets according to their function, history, level, and prospects in an organization.

Function plays an important part. In one study, sales managers and production managers were exposed to the same information, but what registered for each set of managers was the information related to the goals and activities of their own function.⁴³ More recently, Gabarro studied new general managers as they "took charge" and found that for thirteen of fourteen "their initial actions were in areas where they had functional experience, and the most significant changes they made during the three years also were in the areas where they had experience."⁴⁴ Managers who have worked in several different functions are less likely to identify exclusively with their current functions than managers who have been brought up in a single function.⁴⁵ Level in the organization is also crucial. The outlook and concerns of top-level executives differ markedly from those of middle managers, which in turn depart significantly from those of first-line supervisors. A study found that attitudes toward the company became more positive when workers were promoted to foremen, but attitudes returned to their original state when an economic downturn caused the foremen to be demoted back to workers.⁴⁶ In general, managers' prospects for advancement influence their view of the organization: Upwardly mobile individuals approach their jobs and their relationships quite differently from the less mobile and the "stuck."⁴⁷

Unfortunately, as with organizational structure, cognitive structure helps but also hinders. The drawback of a mental set is that, just as it helps a manager tune in needed elements in the stream of input, it may lead a manager to tune out potentially important information. Managers work hard to resolve ambiguity by getting a fix on a situation, and they can be most reluctant to surrender the fix once they have it. Frequently, "when confronted with a fact inconsistent with a fixed idea, the perceiver distorts the data to eliminate the inconsistency."⁴⁸ Preconceptions resist

new conceptions. Recall the example from Chapter 1 in which Allied commanders, preparing to attack the Arnhem area of Holland, gave short shrift to accurate reports of German units in the area. Another dramatic example from World War II was the failure to prepare for the distinct possibility of a Japanese attack on Pearl Harbor. Admiral Kimmel, commander in chief of the Pacific Fleet, stuck to his original plan for mobilizing for the war in the Pacific, despite the immediate threat of attack:

Admiral Kimmel and his staff continued to cling to the policy to which they had committed themselves, discounting each fresh warning and failing to note that more and more signs were pointing to the possibility that Pearl Harbor might be a target for a surprise attack. They repeatedly renewed their decision to continue using the available resources primarily for training green sailors and soldiers and for supplying bases close to Japan, rather than instituting an adequate alert that would give priority to defending Pearl Harbor against enemy attack.⁴⁹

Managers sometimes can't see what they believe can't be there; as one said, "there is difficulty convincing people there is a problem when people don't believe the problem could exist."⁵⁰

One's images of the world resist change, especially when those images have stood up over time.⁵¹ If an agency has always enjoyed adequate federal funding, then it may not take seriously the early signs of a deteriorating situation. If a company has always "taken care of its people," it will be hard to believe reports that layoffs are imminent. When circumstances change gradually, the original image may persist even though the reality slips further away.⁵² Because of this durability, it sometimes takes a powerful stimulus like a crisis or even a catastrophe to break a mental set. Complaints from customers about quality problems may not be taken seriously, for example, until a major customer decides to go elsewhere.

Managers also resist changing their mental sets when change seems painful or difficult. Like the rest of us, they would almost prefer not to know about something they feel they can do nothing about.

Thus, cognitive maps serve a useful purpose in problem recognition, but they also pose a hazard when they are not revised or replaced in light of fresh experience. The challenge is for managers to "detect the subtle discontinuities that may undermine a business in the future."⁵³

The Emotional Component

As managers think about information and talk things through with others, they become to some degree emotionally involved with the problems discovered. For one thing, to acknowledge a problem usually means

adding one more item to an already considerable workload; new problems mean added pressures. For another thing, a discrepancy can be threatening. When a negative signal appears in a manager's bailiwick, it can be a commentary on that manager's performance. Thus, managers are not cool and detached observers of their organizational scenes. They are invested in their points of view, policies, and ways of doing things, and they are identified with the fate of their people and their organizations. To contemplate a problem is not a cool mental act but "hot cognition."⁵⁴ Every time a new problem appears on the horizon, a manager experiences something ranging from a twinge to a shock, from mild interest to considerable excitement. The problem is both a threat to the existing order and an opportunity to restore or enhance that order. Thus, managers are *involved*, directly or indirectly, in what they observe. They are as much participants as observers. Commenting on his novel, *The Golden Bowl*, Henry James said about the characters as observers of the events around them: "There is no other participant [in the novel], of course, than each of the real, the deeply involved and immersed and more or less bleeding participants."⁵⁵ While managers tend to pride themselves on emotional detachment, the stories they told us were hardly sterile:

You have a budget set up on a project to get it done within a certain time and for a certain price. The figures come to you, indicating you're going to get it done on that basis. Then, at the last minute, you find out you're going to have a big overrun. All of a sudden you have to face up to the thing and go to the board of directors and whoever else is involved to tell them you goofed and what it's going to take to bail you out of it. It's a *real embarrassing thing to do*. You can't lay the blame on your organization because, any way you look at it, you're responsible.

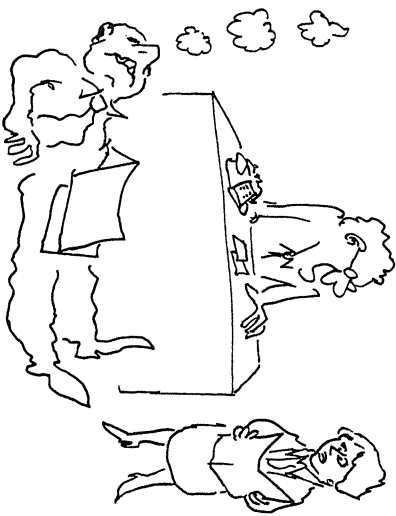
And another:

You run into that sort of thing: things that from your experience and knowledge of an area you think should be done, you feel certain should be done. For various reasons, the home office may decide not to do it. *That hurts sometimes*.

And another:

If you are with people who are supportive and you have the right kind of financial backing, *it's a lot of fun to build an organization*, to put one together, to see it grow.

Embarrassment, hurt, fun? Not the cool, detached, professional manager of the stereotype. And because of this deep emotional involvement, problem recognition is often anything but a routine affair.



My Reality or Yours?

In addition to the cognitive processes by which individual managers "create" problems, problems are also created interactively. Most managers spend most of their time interacting with other people, and the primary purpose of these conversations is to trade and process information.⁵⁶ Managers collaborate to determine what is "real." In the physical realm, people usually don't have a lot of trouble deciding what is real. Desks, machinery, and factories are demonstrably real, but it is not so simple to determine the meaning of the host of amorphous issues arising in organizations. Examples include judging what consumer response to a contemplated new product will be; determining whether an organization's career paths for upwardly mobile managers are laid out effectively; or deciding whether a multibillion dollar corporation should be decentralized further, and how. On vague and complex issues like these, managers interactively anchor their sense of reality. They validate their perceptions, opinions, and conclusions in conjunction with the people around them. Like all people, managers come to a common view by talking through the situation with others important to them and thereby achieve a narrowing and crystallizing of organizational reality.⁵⁷

Not only is reality created interactively, it is negotiated—even contested—by the parties with a stake in the issue, and those parties with greater power stand a better chance of defining reality their way.

Problem recognition may be a contest between competing points of view backed up by different degrees of power, and managers sometimes manipulate the context to achieve political ends—even to the extent of keeping secrets and practicing deception.⁵⁸ An example of this occurred in the late sixties when certain Goodrich managers attempted to suppress test results indicating that aircraft brakes were faulty. At that time, the B. F. Goodrich Wheel & Brake Plant won a subcontract from Ling-Temco-Vought Co. to develop wheels and brakes for the Air Force A-7D plane. The brakes failed test after test, and the technical writer was given clear instructions to fudge the data. According to him, "many, many of the elaborate engineering curves attached to the report were complete and total fabrications, based not on what had actually occurred, but on information which would fool both LTV and the Air Force."⁵⁹ The technical writer, together with the laboratory staff that had conducted the tests, protested the fabrication of the data but was overruled. In a sense, the writer and lab staff were locked in a contest with their superiors over whether the negative results constituted a problem. Those with greater power won (for the time being).

If the person bringing a problem to a manager's attention is powerful, then the manager is likely to accept that person's definition. When, for example, higher management defines a need, ranging from a routine request to preparation of an elaborate plan or report, the manager is likely to accept the definition as given.⁶⁰

Credibility is a kind of power, and the majority of managers interviewed by Lyles and Mitroff cited credibility as an important factor in determining whether an opinion carried weight. Together, rank and credibility make a great deal of difference in determining whether a person's view is accepted.⁶¹

The other side of the same coin is that those with low power in relation to the decision maker sometimes have trouble getting their views accepted. One chapter of the story of the DC-10 (cited in Chapter 1) is that the warnings of the safety experts about the faulty cargo door went largely unheeded.⁶² More recently, engineers at Thikokol who opposed the shuttle launch were overruled by management.⁶³

In another case, a refuse dump from a coal mine slid down into a village in England in 1966 and killed 144 people, including 109 children in school at the time. The local borough council had previously lodged a complaint to the British National Coal Board, pointing out that the refuse dump was dangerous, but, because the borough council was outside the coal industry, they had been dismissed as poorly informed and having little to contribute. One cause of disasters is that complaints and warnings from people outside the organization with jurisdiction over the situation are largely ignored.⁶⁴ The authorities can

generally afford to disregard the complaints of outsiders, who typically lack any real power.

Thus, problem statements from powerful sources are likely to stick. But low-power sources will have trouble getting their views accepted and even more trouble getting action taken. Sometimes the power of sender and intended receiver is on a par, and the definition of the situation is worked out through negotiation and persuasion.

CREATING PROBLEMS: AN OVERVIEW

Some problems are too new, or unexpected, to come to light routinely. These problems are “created”—in the sense that they emerge in the minds, emotions, and conversations of managers. This process, summarized in Figure 2-1, suggests that recognizing that problems exist is not an automatic part of the decision-making process. Formal systems, organizational structure, strong values, and managers’ previous experience increase the probability that the information needed to identify routine, familiar problems will be available. But recognizing novel, unfamiliar, amorphous, or threatening problems is an entirely different matter. And it is precisely these kinds of problems for which managers, particularly at higher levels, must shoulder the responsibility. It is not enough to be aware of the perceptual blinders that we all wear and of the organiza-

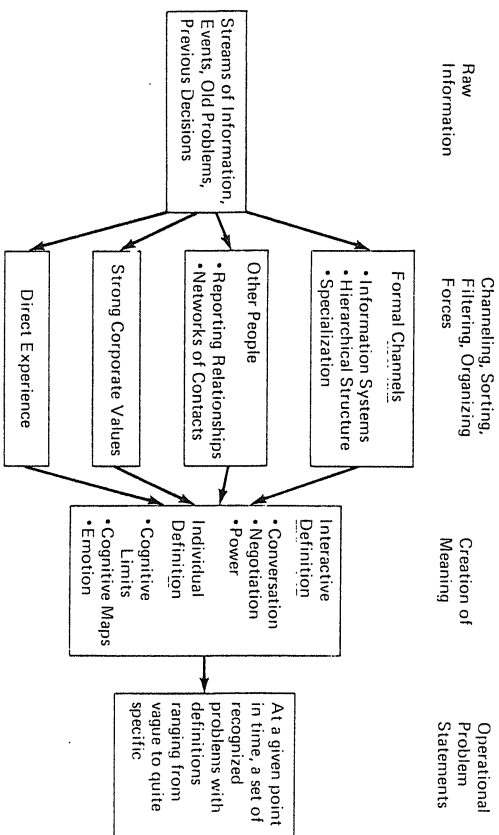


Figure 2-1 The Process of Problem Creation

tional forces that hinder information flow. Managerial action is required to compensate for these natural pitfalls. And given the sheer number of biases and distortions, it would be easy to accept paralysis. But the effective managers we've talked to are inveterate optimists—they don't spend much time dwelling on all the things that can go wrong or all the weaknesses of human beings. Rather, they move ahead, often acting intuitively, finding problems and solving them. They make plenty of mistakes, but they move past them quickly and often learn from them. As we examined their descriptions in detail, we found that what they called intuition had a behavioral base. There are things they *do* that have profound effects on how they gather information, process it, and put it together to “define” the problems they face. The two major themes that emerge—themes that will reappear consistently throughout this book—are *digging* and *knowing the business*. Specifically in reference to finding out what the problems are, we offer the following “advice from managers to managers”:

“Dig, Dig, Dig”

You dig with everybody. You listen to everybody. You've got to look at every interface with a human being as a potential for getting data, as an opportunity to learn something.

But as you dig and dig and dig and ask the right kinds of questions you begin to find there are basic errors in the way you do things.

If you dig into it enough and know enough about what you're doing, you can generally find out what the real problem is.

This composite description puts it in a nutshell. Without exception, the effective executives we talked to hammered home the theme of digging out the information. For virtually all significant issues, they abandoned the hierarchy, going directly to a worker, a superintendent, a customer, a supplier, a banker, a board member, a competitor—in one case, even the local bartender. These conversations were seldom restricted to a single problem or issue but almost always ranged widely across topics, as if the manager were a sponge soaking up information that at some future time might be of use. As one manager put it, “You only need one gem out of a thousand to really make it pay off.”

There seem to be two behavioral features to digging: listening and asking questions. Listening, as described by managers, sounds very much like the “active listening” methods formulated by psychologists. Listening clearly involves more than the ears; it also involves the eyes (“watch the way a person gives you the data”) and the mouth (“listening is repeating, repeat back what you heard”). Listening is not just understanding what is said but also understanding “what emotional condition the



YOU HAVE TO KNOW HOW TO DIG AND WHERE TO DIG.

speaker is saying it in. Is he upset? Is he afraid of you? Is he comfortable with me and the issue he's bringing to me?"

Anyone who has spent time with executives has seen the second behavioral manifestation of digging: the uncanny ability to ask questions. It's not the drill sergeant firing off questions (though most executives have to be good at this approach too), it's a much more subtle probing that doesn't activate defenses:

I'll ask them enough questions to know whether they understand the subject they're talking about. That doesn't take too long, and you can do it in a way that doesn't even sound like you're checking. "By the way, how do you feel about such-and-such?" You can see right away if they know about it. But if you say, "Hey stupid, what makes you think you know anything about that?" that's the end of the input.

There seem to be a few intuitive rules effective managers follow while listening and asking questions. A cardinal rule, for example, is never to use what someone says to punish them. People who share bad news honestly may never do it again if it is used to hurt them. That's one reason many of these managers put so much effort into confirming—into using several different sources for the same information before acting on it.

The desire to "discuss things face to face" is almost an obsession with some executives. It's fine to have data and statistics and forecasts but not without that personal interaction. Nowhere was this more clearly exemplified than by one executive who reflected on formal presentations:

I hate presentations. I like to talk about things. Let's talk about what we're going to do. When I first went to that plant, I'd ask a question and I'd get a

two-hour presentation with charts. I kept telling him, "I don't want all those charts. Just tell me, off the top of your head, how you feel about this. Christ, you've been in the job 30 years; you ought to know off the top of your head what's right or wrong." It took me a long time, but now I don't get presentations. We discuss things.

A major problem with this approach to "leading by listening" is that it can be very hard to cut it off. Once the environment is established, people like to talk, and any executive sociable enough to operate this way could spend all his or her time conversing.

"You've Got to Know What You're Doing"

The key to running a company is to know as much as you possibly can about what your job is and the area you're working in and the product that you're selling and the people you have working for you.

There are two critical pieces to this second theme. The first is that you must know intimately the people you have to work with, otherwise, you can't dig effectively. Second, you've got to know the business cold, or else you don't know what to dig for or how to use what you learn.

The need to know people comes up repeatedly as executives talk about finding out what the problems are. Just as you have to dig with everybody, you have to know as many people as you can as well as you can. "I knew who was who and what they thought" is frequently at the core of effective managerial action. The "who" could be clients, customers, subordinates, superiors, bankers, competitors, suppliers, union representatives, or anyone else involved in the business. The "what they thought" includes their position on issues, their particular strengths and weaknesses, and, above all, what they could be depended upon to do.

This rather amazing (staggering?) array of contacts is not just wishful thinking or exaggeration. Recent research has documented that effective managers have hundreds and even thousands of contacts.⁶⁵

Equally important to these executives was knowing the business. This was the primary way they had of making use of all they learned:

If you know your business, you know. You know what's important to keep it alive; you know where the really important things are. (And that just comes from being in the business long enough to really know it.) It's not just a surface kind of thing; it's knowing *why* something is important.

Knowing means the product, how it's made, how it's used, where it came from, what goes wrong with it, and just about every conceivable aspect of

it. It's firsthand knowledge of all the significant aspects of what the manager manages.

Managers who know the people central to their business and the business itself have worked hard to get that knowledge. It is a product of years and years or even a whole career in the business.⁶⁶ But it is also the product of intensive effort by the manager to learn, a deliberate quest to know all there is to know. Particularly when a manager enters a new job, the priority agenda is getting to know the business and the people.⁶⁷ As one executive put it:

Just as intensively as you can, you learn what's going on from whatever source you can. You spend as much time as you can doing that. You just budget your time, allow a little bit for sleep, and go on from there.

"Know Yourself"

This bit of advice came not from a minister or psychologist but from the top human resources executive in a Fortune 100 company. He recommended self-knowledge not for its own sake but because of its eminently practical value for all aspects of management, including problem recognition. Those blinders, mental maps, biases, fears, hot buttons, and cherished beliefs that put a crimp in the information handling and processing of the people surrounding a manager also operate within the manager. While there is a limit to the ability of people to recognize deeply ingrained parts of themselves, the greater the perspective on oneself, the better one is in touch with one's world. We can't help having our personal needs and organizational interests distort our reading of situations, but we can work to minimize those distortions by being alive to those needs and interests. An executive we interviewed, for example, who excelled in turning around subpar organizations, had a nose for what is wrong in any situation. He had to take into account the possibility that he would see problems that didn't exist or experience them as worse than they were. Another manager had a highly developed sense of order that made him an excellent systematizer and regularizer of the organizations he ran. Yet he needed to guard against having his perfectionist tendencies lead him to attend too much to organizational form and too little to substance.⁶⁸

A basic characteristic that managers must recognize and ride herd on is their own defensiveness—their particular way of protecting themselves from threats to their self-esteem.⁶⁹ When the question of assigning responsibility arises, do they tend to take too little responsibility (or, for that matter, too much)? One manager we studied had a habit of defining his subordinates as personnel problems when, in fact, the difficulties inhered in his relationship with them; but his self-protective arrogance, combined with his superior position, allowed him to get away with pin-

ning them with the blame. Another executive we studied exaggerated the importance of problems brought to his attention by higher-ups and had to break his habit of panicking at each imagined "crisis." At the root was his fear of looking bad in his superiors' eyes. Still another executive showed admirable self-awareness in telling us that he had to watch out for his reluctance to admit ignorance, an egotistical quirk that could keep him from fully understanding a problem.

Managers may prefer to see problems as lying outside of themselves, but the reality is that just as managers participate fully in disposing of problems, they are often bound up in the difficulties that result from the actions they take. They must be objective about themselves in relation to many of the external problems that arise.

Bring an Open Mind

Managers work hard to develop their mental maps—of the business environment, their organizations, the people around them, themselves. But they must be ready and willing to revise or discard those maps, however time-honored or cherished, in the light of fresh experience. Just as they frame their experience, they must be able to reframe. Generalizing about professionals including managers, Schon observed that the individual should be "willing to step into the problematic situation, to impose a frame on it, . . . and yet to remain open to the situation's back-talk."⁷⁰ What is needed is managers with "minds that are attuned to existing patterns yet able to perceive important breaks in them."⁷¹ The challenge is to know when to hold on to a pattern despite an occasional blip and when to let go of it in its present form in response to an instructive discontinuity. Managers eventually get themselves in trouble if they disregard early warning signals⁷² or if, like an executive we spoke with, they are "quick to judge and slow to part with ironclad judgments."

Being open-minded requires that managers first of all pay attention when something unexpected happens. As Isenberg found, "Rather than deny, downplay, or ignore disconfirmation, successful senior managers often treat it as friendly and in a way cherish the discomfort surprise creates."⁷³ For managers to take this attitude, they must care more about continually learning than about preserving their image as knowledgeable. They must blend action and knowledge seeking as they make their way through the numerous episodes packed into each day. The better ones reflect on themselves in relation to the problems they grapple with, sometimes calling timeout and making that reflection explicit with the other parties to the problem.⁷⁴ To use this highly reflective approach to managing, which Torbert called "action inquiry," requires "a willingness to sacrifice your illusions about yourself, others, and situations as you receive new information."⁷⁵

In Conclusion

How, then, do problems get recognized? In organizational settings, meaning emerges as managers dig for information and interpret it against their knowledge of the business. In some cases, where contacts are good and knowledge is adequate, the problem is obvious. In other cases, only continual digging and reinterpretation, possibly coupled with false conclusions and inappropriate action, result in a clear understanding of the problem.

Interestingly, many of the formal mechanisms for channeling information and analyzing it are clearly of secondary importance—if not direct obstacles—to managers. Some are deliberately circumvented, particularly the hierarchy, and tenacious managers do not let specialization or functional allegiance deter their quest for meaning.

At any point in time, then, a manager's plate is overflowing with problems, ranging from those that are only vaguely defined to those that are quite specific. Of all these, which ones will get attention? The issue of priorities is the topic of the next chapter.

3

PRIORITIES FOR ACTION

Leaders look forward to the future. They hold in their minds visions and ideals of what can be.¹

To choose a direction, a leader must first have developed a mental image of a possible and desirable future state of the organization. This image, which we call a *vision*, may be as vague as a dream or as precise as a goal or mission statement.²

The agendas that these managers developed tended to be made up of a set of loosely connected goals and plans which addressed their long-, medium-, and short-run responsibilities. As such, the agendas typically addressed a broad range of financial, product/market, and organizational issues. They also included both vague and very specific items.³

Students of leadership have long argued that it is the leader's responsibility to set the direction for the organization. In the context of managerial decision making, it is tempting to believe that priorities are set by one's vision and leave it that. Whether an inspirational dream, a loosely formed agenda, or a set of inviolate values, what gets decided about and even the set of solutions available would seem to flow directly from the decision maker's sense of what should be.