

MANAGERIAL WORK: ANALYSIS FROM OBSERVATION*

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The progress of management science is dependent on our understanding of the manager's working processes. A review of the literature indicates that this understanding is superficial at best. Empirical study of the work of five managers (supported by those research findings that are available) led to the following description: Managers perform ten basic roles which fall into three groupings. The interpersonal roles describe the manager as figurehead, external liaison, and leader; the information processing roles describe the manager as the nerve center of his organization's information system; and the decision-making roles suggest that the manager is at the heart of the system by which organizational resource allocation, improvement, and disturbance decisions are made. Because of the huge burden of responsibility for the operation of these systems, the manager is called upon to perform his work at an unrelenting pace, work that is characterized by variety, discontinuity and brevity. Managers come to prefer issues that are current, specific, and ad hoc, and that are presented in verbal form. As a result, there is virtually no science in managerial work. The management scientist has done little to change this. He has been unable to understand work which has never been adequately described, and he has poor access to the manager's information, most of which is never documented. We must describe managerial work more precisely, and we must model the manager as a programmed system. Only then shall we be able to make a science of management.

What do managers do? Ask this question and you will likely be told that managers plan, organize, coordinate, and control. Since Henri Fayol [9] first proposed these words in 1916, they have dominated the vocabulary of management. (See, for example, [8], [12], [17].) How valuable are they in describing managerial work? Consider one morning's work of the president of a large organization:

As he enters his office at 8:23, the manager's secretary motions for him to pick up the telephone. "Jerry, there was a bad fire in the plant last night, about \$30,000 damage. We should be back in operation by Wednesday. Thought you should know."

At 8:45, a Mr. Jamison is ushered into the manager's office. They discuss Mr. Jamison's retirement plans and his cottage in New Hampshire. Then the manager presents a plaque to him commemorating his thirty-two years with the organization.

Mail processing follows: An innocent-looking letter, signed by a Detroit lawyer, reads: "A group of us in Detroit has decided not to buy any of your products because you used that anti-flag, anti-American pinko, Bill Lindell, upon your Thursday night TV show." The manager dictates a restrained reply.

The 10:00 meeting is scheduled by a professional staffer. He claims that his superior, a high-ranking vice-president of the organization, mistreats his staff, and that if the man is not fired, they will all walk out. As soon as the meeting ends, the manager rearranges his schedule to investigate the claim and to react to this crisis.

Which of these activities may be called planning, and which may be called organizing, coordinating, and controlling? Indeed, what do words such as "coordinating" and "planning" mean in the context of real activity? In fact, these four words do not describe the actual work of managers at all; they describe certain vague objectives of

* Received January 1970; revised October 1970, January 1971.

† This report is based on the author's doctoral dissertation, carried out at the Sloan School of Management, M. I. T. The author wishes to thank for their help the three thesis committee members, Donald Carroll, Jim Hekimian, and Charles Myers, and Bill Litwack as well.

managerial work. "... they are just ways of indicating what we need to explain." [1, p. 537]

Other approaches to the study of managerial work have developed, one dealing with managerial decision-making and policy-making processes, another with the manager's interpersonal activities. (See, for example, [2] and [10].) And some empirical researchers, using the "diary" method, have studied, what might be called, managerial "media"—by what means, with whom, how long, and where managers spend their time.¹ But in no part of this literature is the actual content of managerial work systematically and meaningfully described.² Thus, the question posed at the start—what do managers do?—remains essentially unanswered in the literature of management.

This is indeed an odd situation. We claim to teach management in schools of both business and public administration; we undertake major research programs in management; we find a growing segment of the management science community concerned with the problems of senior management. Most of these people—the planners, information and control theorists, systems analysts, etc.—are attempting to analyze and change working habits that they themselves do not understand. Thus, at a conference called at M.I.T. to assess the impact of the computer on the manager, and attended by a number of America's foremost management scientists, a participant found it necessary to comment after lengthy discussion [20, p. 198]:

I'd like to return to an earlier point. It seems to me that until we get into the question of what the top manager does or what the functions are that define the top management job, we're not going to get out of the kind of difficulty that keeps cropping up. What I'm really doing is leading up to my earlier question which no one really answered. And that is: Is it possible to arrive at a specification of what constitutes the job of a top manager?

His question was not answered.

Research Study on Managerial Work

In late 1966, I began research on this question, seeking to replace Fayol's words by a set that would more accurately describe what managers do. In essence, I sought to develop by the process of induction a statement of managerial work that would have empirical validity. Using a method called "structured observation", I observed for one-week periods the chief executives of five medium to large organizations (a consulting firm, a school system, a technology firm, a consumer goods manufacturer, and a hospital).

Structured as well as unstructured (i.e., anecdotal) data were collected in three "records". In the *chronology record*, activity patterns throughout the working day were recorded. In the *mail record*, for each of 890 pieces of mail processed during the five weeks, were recorded its purpose, format and sender, the attention it received and the action it elicited. And, recorded in the *contact record*, for each of 368 verbal interactions, were the purpose, the medium (telephone call, scheduled or unscheduled meeting, tour), the participants, the form of initiation, and the location. It should be noted that all categorizing was done during and after observation so as to ensure that the cate-

¹ Carlson [6] carried out the classic study just after World War II. He asked nine Swedish managing directors to record on diary pads details of each activity in which they engaged. His method was used by a group of other researchers, many of them working in the U.K. (See [4], [5], [15], [25].)

² One major project, involving numerous publications, took place at Ohio State University and spanned three decades. Some of the vocabulary used followed Fayol. The results have generated little interest in this area. (See, for example, [13].)

gories reflected only the work under observation. [19] contains a fuller description of this methodology and a tabulation of the results of the study.

Two sets of conclusions are presented below. The first deals with certain characteristics of managerial work, as they appeared from analysis of the numerical data (e.g., How much time is spent with peers? What is the average duration of meetings? What proportion of contacts are initiated by the manager himself?). The second describes the basic content of managerial work in terms of ten roles. This description derives from an analysis of the data on the recorded *purpose* of each contact and piece of mail.

The liberty is taken of referring to these findings as descriptive of managerial, as opposed to chief executive, work. This is done because many of the findings are supported by studies of other types of managers. Specifically, most of the conclusions on work characteristics are to be found in the combined results of a group of studies of foremen [11], [16], middle managers [4], [5], [15], [25], and chief executives [6]. And although there is little useful material on managerial roles, three studies do provide some evidence of the applicability of the role set. Most important, Sayles' empirical study of production managers [24] suggests that at least five of the ten roles are performed at the lower end of the managerial hierarchy. And some further evidence is provided by comments in Whyte's study of leadership in a street gang [26] and Neustadt's study of three U.S. presidents [21]. (Reference is made to these findings where appropriate.) Thus, although most of the illustrations are drawn from my study of chief executives, there is some justification in asking the reader to consider when he sees the terms "manager" and his "organization" not only "presidents" and their "companies", but also "foremen" and their "shops", "directors" and their "branches", "vice-presidents" and their "divisions". The term *manager* shall be used with reference to all those people in charge of formal organizations or their subunits.

Some Characteristics of Managerial Work

Six sets of characteristics of managerial work derive from analysis of the data of this study. Each has a significant bearing on the manager's ability to administer a complex organization.

Characteristic 1. The Manager Performs a Great Quantity of Work at an Unrelenting Pace

Despite a semblance of normal working hours, in truth managerial work appears to be very taxing. The five men in this study processed an average of thirty-six pieces of mail each day, participated in eight meetings (half of which were scheduled), engaged in five telephone calls, and took one tour. In his study of foremen, Guest [11] found that the number of activities per day averaged 583, with no real break in the pace.

Free time appears to be very rare. If by chance a manager has caught up with the mail, satisfied the callers, dealt with all the disturbances, and avoided scheduled meetings, a subordinate will likely show up to usurp the available time. It seems that the manager cannot expect to have much time for leisurely reflection during office hours. During "off" hours, our chief executives spent much time on work-related reading. High-level managers appear to be able to escape neither from an environment which recognizes the power and status of their positions nor from their own minds which have been trained to search continually for new information.

Characteristic 2. Managerial Activity is Characterized by Variety, Fragmentation, and Brevity

There seems to be no pattern to managerial activity. Rather, variety and fragmentation appear to be characteristic, as successive activities deal with issues that differ

greatly both in type and in content. In effect the manager must be prepared to shift moods quickly and frequently.

A typical chief executive day may begin with a telephone call from a director who asks a favor (a "status request"); then a subordinate calls to tell of a strike at one of the facilities (fast movement of information, termed "instant communication"); this is followed by a relaxed scheduled event at which the manager speaks to a group of visiting dignitaries (ceremony); the manager returns to find a message from a major customer who is demanding the renegotiation of a contract (pressure); and so on. Throughout the day, the managers of our study encountered this great variety of activity. Most surprisingly, the significant activities were interspersed with the trivial in no particular pattern.

Furthermore, these managerial activities were characterized by their brevity. Half of all the activities studied lasted less than nine minutes and only ten percent exceeded one hour's duration. Guest's foremen averaged 48 seconds per activity, and Carlson [6] stressed that his chief executives were unable to work without frequent interruption.

In my own study of chief executives, I felt that the managers demonstrated a preference for tasks of short duration and encouraged interruption. Perhaps the manager becomes accustomed to variety, or perhaps the flow of "instant communication" cannot be delayed. A more plausible explanation might be that the manager becomes conditioned by his workload. He develops a sensitive appreciation for the opportunity cost of his own time. Also, he is aware of the ever present assortment of obligations associated with his job—accumulations of mail that cannot be delayed, the callers that must be attended to, the meetings that require his participation. In other words, no matter what he is doing, the manager is plagued by what he must do and what he might do. Thus, the manager is forced to treat issues in an abrupt and superficial way.

Characteristic 3. Managers Prefer Issues That Are Current, Specific, and Ad Hoc

Ad hoc operating reports received more attention than did routine ones; current, uncertain information—gossip, speculation, hearsay—which flows quickly was preferred to historical, certain information; "instant communication" received first consideration; few contacts were held on a routine or "clocked" basis; almost all contacts concerned well-defined issues. The managerial environment is clearly one of stimulus-response. It breeds, not reflective planners, but adaptable information manipulators who prefer the live, concrete situation, men who demonstrate a marked action-orientation.

Characteristic 4. The Manager Sits Between His Organization and a Network of Contacts

In virtually every empirical study of managerial time allocation, it was reported that managers spent a surprisingly large amount of time in horizontal or lateral (nonline) communication. It is clear from this study and from that of Sayles [24] that the manager is surrounded by a diverse and complex web of contacts which serves as his self-designed external information system. Included in this web can be clients, associates and suppliers, outside staff experts, peers (managers of related or similar organizations), trade organizations, government officials, independents (those with no relevant organizational affiliation), and directors or superiors. (Among these, directors in this study and superiors in other studies did *not* stand out as particularly active individuals.)

The managers in this study received far more information than they emitted, much of it coming from contacts, and more from subordinates who acted as filters. Figure-

tively, the manager appears as the neck of an hourglass, sifting information into his own organization from its environment.

Characteristic 5. The Manager Demonstrates a Strong Preference for the Verbal Media

The manager has five media at his command—mail (documented), telephone (purely verbal), unscheduled meeting (informal face-to-face), scheduled meeting (formal face-to-face), and tour (observational). Along with all the other empirical studies of work characteristics, I found a strong predominance of verbal forms of communication.

Mail. By all indications, managers dislike the documented form of communication. In this study, they gave cursory attention to such items as operating reports and periodicals. It was estimated that only thirteen percent of the input mail was of specific and immediate use to the managers. Much of the rest dealt with formalities and provided general reference data. The managers studied initiated very little mail, only twenty-five pieces in the five weeks. The rest of the outgoing mail was sent in reaction to mail received—a reply to a request, an acknowledgment, some information forwarded to a part of the organization. The managers appeared to dislike this form of communication, perhaps because the mail is a relatively slow and tedious medium to use.

Telephone and Unscheduled Meetings. The less formal means of verbal communication—the telephone, a purely verbal form, and the unscheduled meeting, a face-to-face form—were used frequently (two-thirds of the contacts in the study) but for brief encounters (average duration of six and twelve minutes respectively). They were used primarily to deliver requests and to transmit pressing information to those outsiders and subordinates who had informal relationships with the manager.

Scheduled Meetings. These tended to be of long duration, averaging sixty-eight minutes in this study, and absorbing over half the managers' time. Such meetings provided the managers with their main opportunities to interact with large groups and to leave the confines of their own offices. Scheduled meetings were used when the participants were unfamiliar to the manager (e.g., students who request that he speak at a university), when a large quantity of information had to be transmitted (e.g., presentation of a report), when ceremony had to take place, and when complex strategy-making or negotiation had to be undertaken. An important feature of the scheduled meeting was the incidental, but by no means irrelevant, information that flowed at the start and end of such meetings.

Tours. Although the walking tour would appear to be a powerful tool for gaining information in an informal way, in this study tours accounted for only three percent of the managers' time.

In general, it can be concluded that the manager uses each medium for particular purposes. Nevertheless, where possible, he appears to gravitate to verbal media since these provide greater flexibility, require less effort, and bring faster response. It should be noted here that the manager does not leave the telephone or the meeting to get back to work. Rather, communication is his work, and these media are his tools. The operating work of the organization—producing a product, doing research, purchasing a part—appears to be undertaken infrequently by the senior manager. The manager's productive output must be measured in terms of information, a great part of which is transmitted verbally.

Characteristic 6. Despite the Preponderance of Obligations, the Manager Appears to Be Able to Control His Own Affairs

Carlson suggested in his study of Swedish chief executives that these men were puppets, with little control over their own affairs. A cursory examination of our data

indicates that this is true. Our managers are responsible for the initiation of only thirty-two percent of their verbal contacts and a smaller proportion of their mail. Activities were also classified as to the nature of the managers' participation, and the active ones were outnumbered by the passive ones (e.g., making requests vs. receiving requests). On the surface, the manager is indeed a puppet, answering requests in the mail, returning telephone calls, attending meetings initiated by others, yielding to subordinates' requests for time, reacting to crises.

However, such a view is misleading. There is evidence that the senior manager can exert control over his own affairs in two significant ways: (1) It is he who defines many of his own long-term commitments, by developing appropriate information channels which later feed him information, by initiating projects which later demand his time, by joining committees or outside boards which provide contacts in return for his services, and so on. (2) The manager can exploit situations that appear as obligations. He can lobby at ceremonial speeches; he can impose his values on his organization when his authorization is requested; he can motivate his subordinates whenever he interacts with them; he can use the crisis situation as an opportunity to innovate.

Perhaps these are two points that help distinguish successful and unsuccessful managers. All managers appear to be puppets. Some decide who will pull the strings and how, and they then take advantage of each move that they are forced to make. Others, unable to exploit this high-tension environment, are swallowed up by this most demanding of jobs.

The Manager's Work Roles

In describing the essential content of managerial work, one should aim to model managerial activity, that is, to describe it as a set of programs. But an undertaking as complex as this must be preceded by the development of a useful typological description of managerial work. In other words, we must first understand the distinct components of managerial work. At the present time we do not.

In this study, 890 pieces of mail and 368 verbal contacts were categorized as to purpose. The incoming mail was found to carry acknowledgements, requests and solicitations of various kinds, reference data, news, analytical reports, reports on events and on operations, advice on various situations, and statements of problems, pressures, and ideas. In reacting to mail, the managers acknowledged some, replied to the requests (e.g., by sending information), and forwarded much to subordinates (usually for their information). Verbal contacts involved a variety of purposes. In 15% of them activities were scheduled, in 6% ceremonial events took place, and a few involved external board work. About 34% involved requests of various kinds, some insignificant, some for information, some for authorization of proposed actions. Another 36% essentially involved the flow of information to and from the manager, while the remainder dealt specifically with issues of strategy and with negotiations. (For details, see [19].)

In this study, each piece of mail and verbal contact categorized in this way was subjected to one question: Why did the manager do this? The answers were collected and grouped and regrouped in various ways (over the course of three years) until a typology emerged that was felt to be satisfactory. While an example, presented below, will partially explain this process to the reader, it must be remembered that (in the words of Bronowski [3, p. 62]): "Every induction is a speculation and it guesses at a unity which the facts present but do not strictly imply."

Consider the following sequence of two episodes: A chief executive attends a meeting of an external board on which he sits. Upon his return to his organization, he immedi-

ately goes to the office of a subordinate, tells of a conversation he had with a fellow board member, and concludes with the statement: "It looks like we shall get the contract."

The purposes of these two contacts are clear—to attend an external board meeting, and to give current information (instant communication) to a subordinate. But why did the manager attend the meeting? Indeed, why does he belong to the board? And why did he give this particular information to his subordinate?

Basing analysis on this incident, one can argue as follows: The manager belongs to the board in part so that he can be exposed to special information which is of use to his organization. The subordinate needs the information but has not the status which would give him access to it. The chief executive does. Board memberships bring chief executives in contact with one another for the purpose of trading information.

Two aspects of managerial work emerge from this brief analysis. The manager serves in a "liaison" capacity because of the status of his office, and what he learns here enables him to act as "disseminator" of information into his organization. We refer to these as *roles*—organized sets of behaviors belonging to identifiable offices or positions [23]. Ten roles were chosen to capture all the activities observed during this study.

All activities were found to involve one or more of three basic behaviors—interpersonal contact, the processing of information, and the making of decisions. As a result, our ten roles are divided into three corresponding groups. Three roles—labelled *figurehead*, *liaison*, and *leader*—deal with behavior that is essentially interpersonal in nature. Three others—*nerve center*, *disseminator*, and *spokesman*—deal with information-processing activities performed by the manager. And the remaining four—*entrepreneur*, *disturbance handler*, *resource allocator*, and *negotiator*—cover the decision-making activities of the manager. We describe each of these roles in turn, asking the reader to note that they form a *gestalt*, a unified whole whose parts cannot be considered in isolation.

The Interpersonal Roles

Three roles relate to the manager's behavior that focuses on interpersonal contact. These roles derive directly from the authority and status associated with holding managerial office.

Figurehead. As legal authority in his organization, the manager is a symbol, obliged to perform a number of duties. He must preside at ceremonial events, sign legal documents, receive visitors, make himself available to many of those who feel, in the words of one of the men studied, "that the only way to get something done is to get to the top." There is evidence that this role applies at other levels as well. Davis [7, pp. 43–44] cites the case of the field sales manager who must deal with those customers who believe that their accounts deserve his attention.

Leader. Leadership is the most widely recognized of managerial roles. It describes the manager's relationship with his subordinates—his attempts to motivate them and his development of the milieu in which they work. Leadership actions pervade all activity—in contrast to most roles, it is possible to designate only a few activities as dealing exclusively with leadership (these mostly related to staffing duties). Each time a manager encourages a subordinate, or meddles in his affairs, or replies to one of his requests, he is playing the *leader* role. Subordinates seek out and react to these leadership clues, and, as a result, they impart significant power to the manager.

Liaison. As noted earlier, the empirical studies have emphasized the importance of lateral or horizontal communication in the work of managers at all levels. It is clear

from our study this is explained largely in terms of the *liaison* role. The manager establishes his network of contacts essentially to bring information and favors to his organization. As Sayles notes in his study of production supervisors [24, p. 258], "The one enduring objective [of the manager] is the effort to build and maintain a predictable, reciprocating system of relationships . . ."

Making use of his status, the manager interacts with a variety of peers and other people outside his organization. He provides time, information, and favors in return for the same from others. Foremen deal with staff groups and other foremen; chief executives join boards of directors, and maintain extensive networks of individual relationships. Neustadt notes this behavior in analyzing the work of President Roosevelt [21, p. 150]:

His personal sources were the product of a sociability and curiosity that reached back to the other Roosevelt's time. He had an enormous acquaintance in various phases of national life and at various levels of government; he also had his wife and her variety of contacts. He extended his acquaintanceships abroad; in the war years Winston Churchill, among others, became a "personal source". Roosevelt quite deliberately exploited these relationships and mixed them up to widen his own range of information. He changed his sources as his interests changed, but no one who had ever interested him was quite forgotten or immune to sudden use.

The Informational Roles

A second set of managerial activities relate primarily to the processing of information. Together they suggest three significant managerial roles, one describing the manager as a focal point for a certain kind of organizational information, the other two describing relatively simple transmission of this information.

Nerve Center. There is indication, both from this study and from those by Neustadt and Whyte, that the manager serves as the focal point in his organization for the movement of nonroutine information. Homans, who analyzed Whyte's study, draws the following conclusions [26, p. 187]:

Since interaction flowed toward [the leaders], they were better informed about the problems and desires of group members than were any of the followers and therefore better able to decide on an appropriate course of action. Since they were in close touch with other gang leaders, they were also better informed than their followers about conditions in Cornerville at large. Moreover, in their positions at the focus of the chains of interaction, they were better able than any follower to pass on to the group decisions that had been reached.

The term *nerve center* is chosen to encompass those many activities in which the manager receives information.

Within his own organization, the manager has legal authority that formally connects him—and only him—to *every* member. Hence, the manager emerges as *nerve center* of internal information. He may not know as much about any one function as the subordinate who specializes in it, but he comes to know more about his total organization than any other member. He is the information generalist. Furthermore, because of the manager's status and its manifestation in the *liaison* role, the manager gains unique access to a variety of knowledgeable outsiders including peers who are themselves *nerve centers* of their own organizations. Hence, the manager emerges as his organization's *nerve center* of external information as well.

As noted earlier, the manager's nerve center information is of a special kind. He appears to find it most important to get his information quickly and informally. As a result, he will not hesitate to bypass formal information channels to get it, and he is

prepared to deal with a large amount of gossip, hearsay, and opinion which has not yet become substantiated fact.

Disseminator. Much of the manager's information must be transmitted to subordinates. Some of this is of a *factual* nature, received from outside the organization or from other subordinates. And some is of a *value* nature. Here, the manager acts as the mechanism by which organizational influencers (owners, governments, employee groups, the general public, etc., or simply the "boss") make their preferences known to the organization. It is the manager's duty to integrate these value positions, and to express general organizational preferences as a guide to decisions made by subordinates. One of the men studied commented: "One of the principal functions of this position is to integrate the hospital interests with the public interests." Papandreou describes this duty in a paper published in 1952, referring to management as the "peak coordinator" [22].

Spokesman. In his *spokesman* role, the manager is obliged to transmit his information to outsiders. He informs influencers and other interested parties about his organization's performance, its policies, and its plans. Furthermore, he is expected to serve outside his organization as an expert in its industry. Hospital administrators are expected to spend some time serving outside as public experts on health, and corporation presidents, perhaps as chamber of commerce executives.

The Decisional Roles

The manager's legal authority requires that he assume responsibility for all of his organization's important actions. The *nerve center* role suggests that only he can fully understand complex decisions, particularly those involving difficult value tradeoffs. As a result, the manager emerges as the key figure in the making and interrelating of all significant decisions in his organization, a process that can be referred to as *strategy-making*. Four roles describe the manager's control over the strategy-making system in his organization.

Entrepreneur. The *entrepreneur* role describes the manager as initiator and designer of much of the controlled change in his organization. The manager looks for opportunities and potential problems which may cause him to initiate action. Action takes the form of *improvement projects*—the marketing of a new product, the strengthening of a weak department, the purchasing of new equipment, the reorganization of formal structure, and so on.

The manager can involve himself in each improvement project in one of three ways: (1) He may *delegate* all responsibility for its design and approval, implicitly retaining the right to replace that subordinate who takes charge of it. (2) He may delegate the design work to a subordinate, but retain the right to *approve* it before implementation. (3) He may actively *supervise* the design work himself.

Improvement projects exhibit a number of interesting characteristics. They appear to involve a number of subdecisions, consciously sequenced over long periods of time and separated by delays of various kinds. Furthermore, the manager appears to supervise a great many of these at any one time—perhaps fifty to one hundred in the case of chief executives. In fact, in his handling of improvement projects, the manager may be likened to a juggler. At any one point, he maintains a number of balls in the air. Periodically, one comes down, receives a short burst of energy, and goes up again. Meanwhile, an inventory of new balls waits on the sidelines and, at random intervals, old balls are discarded and new ones added. Both Lindblom [2] and Marples [18] touch on these aspects of strategy-making, the former stressing the disjointed and

incremental nature of the decisions, and the latter depicting the sequential episodes in terms of a stranded rope made up of fibres of different lengths each of which surfaces periodically.

Disturbance Handler. While the *entrepreneur* role focuses on voluntary change, the *disturbance handler* role deals with corrections which the manager is forced to make. We may describe this role as follows: The organization consists basically of specialist operating programs. From time to time, it experiences a stimulus that cannot be handled routinely, either because an operating program has broken down or because the stimulus is new and it is not clear which operating program should handle it. These situations constitute disturbances. As generalist, the manager is obliged to assume responsibility for dealing with the stimulus. Thus, the handling of disturbances is an essential duty of the manager.

There is clear evidence for this role both in our study of chief executives and in Sayles' study of production supervisors [24, p. 162]:

The achievement of this stability, which is the manager's objective, is a never-to-be-attained ideal. He is like a symphony orchestra conductor, endeavoring to maintain a melodious performance in which contributions of the various instruments are coordinated and sequenced, patterned and paced, while the orchestra members are having various personal difficulties, stage hands are moving music stands, alternating excessive heat and cold are creating audience and instrument problems, and the sponsor of the concert is insisting on irrational changes in the program.

Sayles goes further to point out the very important balance that the manager must maintain between change and stability. To Sayles, the manager seeks "a dynamic type of stability" (p. 162). Most disturbances elicit short-term adjustments which bring back equilibrium; persistent ones require the introduction of long-term structural change.

Resource Allocator. The manager maintains ultimate authority over his organization's strategy-making system by controlling the allocation of its resources. By deciding who will get what (and who will do what), the manager directs the course of his organization. He does this in three ways:

(1) *In scheduling his own time*, the manager allocates his most precious resource and thereby determines organizational priorities. Issues that receive low priority do not reach the *nerve center* of the organization and are blocked for want of resources.

(2) In designing the organizational structure and in carrying out many improvement projects, the manager *programs the work of his subordinates*. In other words, he allocates their time by deciding what will be done and who will do it.

(3) Most significantly, the manager maintains control over resource allocation by the requirement that he *authorize all significant decisions* before they are implemented. By retaining this power, the manager ensures that different decisions are interrelated—that conflicts are avoided, that resource constraints are respected, and that decisions complement one another.

Decisions appear to be authorized in one of two ways. Where the costs and benefits of a proposal can be quantified, where it is competing for specified resources with other known proposals, and where it can wait for a certain time of year, approval for a proposal is sought in the context of a formal *budgeting* procedure. But these conditions are most often not met—timing may be crucial, nonmonetary costs may predominate, and so on. In these cases, approval is sought in terms of an *ad hoc request for authorization*. Subordinate and manager meet (perhaps informally) to discuss one proposal alone.

Authorization choices are enormously complex ones for the manager. A myriad of factors must be considered (resource constraints, influencer preferences, consistency with other decisions, feasibility, payoff, timing, subordinate feelings, etc.). But the fact that the manager is authorizing the decision rather than supervising its design suggests that he has little time to give to it. To alleviate this difficulty, it appears that managers use special kinds of *models* and *plans* in their decision-making. These exist only in their minds and are loose, but they serve to guide behavior. Models may answer questions such as, "Does this proposal make sense in terms of the trends that I see in tariff legislation?" or "Will the EDP department be able to get along with marketing on this?" Plans exist in the sense that, on questioning, managers reveal images (in terms of proposed improvement projects) of where they would like their organizations to go: "Well, once I get these foreign operations fully developed, I would like to begin to look into a reorganization," said one subject of this study.

Negotiator. The final role describes the manager as participant in negotiation activity. To some students of the management process [8, p. 343], this is not truly part of the job of managing. But such distinctions are arbitrary. Negotiation is an integral part of managerial work, as this study notes for chief executives and as that of Sayles made very clear for production supervisors [24, p. 131]: "Sophisticated managers place great stress on negotiations as a way of life. They negotiate with groups who are setting standards for their work, who are performing support activity for them, and to whom they wish to 'sell' their services."

The manager must participate in important negotiation sessions because he is his organization's legal authority, its *spokesman* and its *resource allocator*. Negotiation is resource trading in real time. If the resource commitments are to be large, the legal authority must be present.

These ten roles suggest that the manager of an organization bears a great burden of responsibility. He must oversee his organization's status system; he must serve as a crucial informational link between it and its environment; he must interpret and reflect its basic values; he must maintain the stability of its operations; and he must adapt it in a controlled and balanced way to a changing environment.

Management as a Profession and as a Science

Is management a profession? To the extent that different managers perform one set of basic roles, management satisfies one criterion for becoming a profession. But a profession must require, in the words of the Random House Dictionary, "knowledge of some department of learning or science." Which of the ten roles now requires specialized learning? Indeed, what school of business or public administration teaches its students how to disseminate information, allocate resources, perform as figurehead, make contacts, or handle disturbances? We simply know very little about teaching these things. The reason is that we have never tried to document and describe in a meaningful way the procedures (or programs) that managers use.

The evidence of this research suggests that there is as yet no science in managerial work—that managers do not work according to procedures that have been prescribed by scientific analysis. Indeed, except for his use of the telephone, the airplane, and the dictating machine, it would appear that the manager of today is indistinguishable from his predecessors. He may seek different information, but he gets much of it in the same way—from word-of-mouth. He may make decisions dealing with modern technology but he uses the same intuitive (that is, nonexplicit) procedures in making them. Even the computer, which has had such a great impact on other kinds of or-

ganizational work, has apparently done little to alter the working methods of the general manager.

How do we develop a scientific base to understand the work of the manager? The description of roles is a first and necessary step. But tighter forms of research are necessary. Specifically, we must attempt to model managerial work—to describe it as a system of programs. First, it will be necessary to decide what programs managers actually use. Among a great number of programs in the manager's repertoire, we might expect to find a time scheduling program, an information disseminating program, and a disturbance-handling program. Then, researchers will have to devote a considerable amount of effort to studying and accurately describing the content of each of these programs—the information and heuristics used. Finally, it will be necessary to describe the interrelationships among all of these programs so that they may be combined into an integrated descriptive model of managerial work.

When the management scientist begins to understand the programs that managers use, he can begin to design meaningful systems and provide help for the manager. He may ask: Which managerial activities can be fully reprogrammed (i.e., automated)? Which cannot be reprogrammed because they require human responses? Which can be partially reprogrammed to operate in a man-machine system? Perhaps scheduling, information collecting, and resource allocating activities lend themselves to varying degrees of reprogramming. Management will emerge as a science to the extent that such efforts are successful.

Improving the Manager's Effectiveness

Fayol's fifty year old description of managerial work is no longer of use to us. And we shall not disentangle the complexity of managerial work if we insist on viewing the manager simply as a decision-maker or simply as a motivator of subordinates. In fact, we are unlikely to overestimate the complexity of the manager's work, and we shall make little headway if we take overly simple or narrow points of view in our research.

A major problem faces today's manager. Despite the growing size of modern organizations and the growing complexity of their problems (particularly those in the public sector), the manager can expect little help. He must design his own information system, and he must take full charge of his organization's strategy-making system. Furthermore, the manager faces what might be called the *dilemma of delegation*. He has unique access to much important information but he lacks a formal means of disseminating it. As much of it is verbal, he cannot spread it around in an efficient manner. How can he delegate a task with confidence when he has neither the time nor the means to send the necessary information along with it?

Thus, the manager is usually forced to carry a great burden of responsibility in his organization. As organizations become increasingly large and complex, this burden increases. Unfortunately, the man cannot significantly increase his available time or significantly improve his abilities to manage. Hence, in the large, complex bureaucracy, the top manager's time assumes an enormous opportunity cost and he faces the real danger of becoming a major obstruction in the flow of decisions and information.

Because of this, as we have seen, managerial work assumes a number of distinctive characteristics. The quantity of work is great; the pace is unrelenting; there is great variety, fragmentation, and brevity in the work activities; the manager must concentrate on issues that are current, specific, and ad hoc, and to do so, he finds that he must rely on verbal forms of communications. Yet it is on this man that the burden

lies for designing and operating strategy-making and information processing systems that are to solve his organization's (and society's) problems.

The manager can do something to alleviate these problems. He can learn more about his own roles in his organization, and he can use this information to schedule his time in a more efficient manner. He can recognize that only he has much of the information needed by his organization. Then, he can seek to find better means of disseminating it into the organization. Finally, he can turn to the skills of his management scientists to help reduce his workload and to improve his ability to make decisions.

The management scientist can learn to help the manager to the extent he can develop an understanding of the manager's work and the manager's information. To date, strategic planners, operations researchers, and information system designers have provided little help for the senior manager. They simply have had no framework available by which to understand the work of the men who employed them, and they have had poor access to the information which has never been documented. It is folly to believe that a man with poor access to the organization's true *nerve center* can design a formal management information system. Similarly, how can the long-range planner, a man usually uninformed about many of the *current* events that take place in and around his organization, design meaningful strategic plans? For good reason, the literature documents many manager complaints of naïve planning and many planner complaints of disinterested managers. In my view, our lack of understanding of managerial work has been the greatest block to the progress of management science.

The ultimate solution to the problem—to the overburdened manager seeking meaningful help—must derive from research. We must observe, describe, and understand the real work of managing; then and only then shall we significantly improve it.

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