Beyond the "Service Driven" Program Design: Strategy as a Basis for Program Organization

Retrenchment Series
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A Brief Story

The staff attorneys of a legal services program had decided to allocate attorney resources so that attorney time was divided evenly between impact work, phone service supervision and community education. The question emerged of how to organize the community education component. Members noted that community education consists of a range of efforts such as outreach, preventive law work, legislative advocacy, group representation, self help, lay advocate training, etc. How should the program distribute staff resources between these activities? The group was uncertain, and at this point one attorney suggested that no discussion of community education activities could take place outside the context of discussions about the impact work and the phone service work. It then became apparent that the decision to evenly allocate attorney time between the three activities was an abstract one. It was unrelated to a conception of the program's overall posture in relationship to its wider environment. The staff then realized that they had to return to their initial priorities discussion and develop a more strategic conception of their work so that the distribution of time between activities was not organized by a formula, but by a strategic plan. Thus for example, the group felt strongly that it had to organize much of its effort around the problem of clarifying and tracking the impact of the omnibus act on its clients. They realized that if they conceptualized this problem or task as the motif of their work, they would allocate their time to the three activities according to a strategy for assisting clients in coping with or challenging the implementation of the act. They might use the phone service to track the act's impact, develop the bulk of their initial community education materials on the act and develop impact strategies that addressed the act's implementation.

This kind of discussion is taking place in many program settings. It is becoming clear that under conditions of austerity, program resources cannot simply be deployed to meet the requirements of independently organized areas of activity, but must instead be increasingly integrated around overall program strategies.

In the past four other interrelated methods organized the deployment of program resources. First, the concept of minimum access stretched programs to provide as much minimal service to as many clients as possible. Second, the culture of the "autonomous professional" encouraged individual lawyers to develop their own cases and issues that could significantly affect the welfare of clients. Third, under the pressure of scarce resources, the concept of priority areas based on an assessment of clients' needs helped staff allocate their time between different programmatic areas. Fourth and finally, the early historic mission of legal service, based on the alliance between poverty lawyers and welfare groups, led many programs to focus their work on clients' rights to due process in the administration of public benefits.

It is safe to say that none of these methods will be satisfactory in the future. Under conditions of retrenchment, programs cannot guarantee universal minimum access to its clients. Today many programs are operating on an "emergency" intake basis while others are cutting out their rural delivery systems. Priority setting as well may stretch program resources too thinly. Program leadership seems increasingly reluctant to create specialist identities at a time when the uncertain political climate requires that lawyers and paralegals be prepared to develop competence in new areas that may emerge as central to the intersection of law and social change. The distribution of specialized lawyers to different programmatic areas may overload each attorney and prevent staff as a whole from functioning as a team,

just at a time when each attorney needs more, not less, support. In addition, many legal service leaders have long been skeptical of priority setting itself, since the division of effort between program areas seemed an artificial one. Poor people, they argued, had the problem of poverty. Its manifestation at a particular time (e.g. in housing, or garnished wages or low welfare benefits) was not necessarily the best vehicle for attacking the general problem itself.

Finally, by the late seventies many leaders in the legal services movement were looking for new strategic directions, or "next steps." Many felt that the early mission of legal services, aggressive advocacy against public bureaucracies, had to give way to a more complex conception of both legal work and social change. Thus for example, many spoke of community development as a new area of work in which both the substantive issues and the nature of the legal work would change.

In effect, the convergence of austerity, uncertainty, and the felt need for new conceptions of the link between social change and the law is creating a <u>strategic</u> conception of program design. Program staff are asking how they can allocate staff resources to a range of activities so that the activities as a whole produce a distinctive and situation-specific program strategy.

I believe that as programs begin to develop such a strategic conception of program structure they must consider anew their conceptions and models of organizational design. In the following paper I want to briefly examine three areas of organizational design and functioning that I believe to be critical to the development of a stategically based program design: the nature and functions of "administration," the formation and assessment of a professional "team," and the problem of assessing organizational performance. Let me examine each one in turn.

The Problem of Administration

Many program directors are studying ways to limit administrative costs to cope with retrenchment issues. They are exploring administrative cost sharing mechanisms, the substitution of computers for people, the simple elimination of administrative positions. Some of these efforts may be successful (e.g. small programs purchasing accounting and case management systems from large programs, circuit riding administratore supported by distributed data processing systems), others may be conceptually misplaced. Thus for example, I think many managing attorneys are discoverin that they need to rely on their administrative staff even more as they develop new political contacts, make new contract arrangements, look for new funds, etc. It is important to realize however that within the strategic conception of program design the administration and management systems may actually expand rather than contract.

Some research is of significance here. Jeffrey Frod of Indiana University has found that under conditions of organizational decline the ratio of administrative personnel to total personnel may actually rise. Thus for example, declining companies may have to invest more resources in obtaining the kinds of people they need to turn the company around. They will thus expand the size of their personnel budgets. Similarly, school districts in decline often expand their grant writing and "strategic planning" staffs to develop new programs and markets for their services. Finally, organizations that try to extend and expand their networks of influence to counter the impact of austerity may invest more adminkstrative and managerial resources in political scanning, and the negotiation of agreements with other institutions. This evidence suggests that just as the program leadership tries to cut costs in areas of administration they may have to expand managerial activities in

in others. Retrenchment may involve a double process, the cutting of administrative costs and the expanding of managerial and planning costs. The following table highlights the distinction between the two.

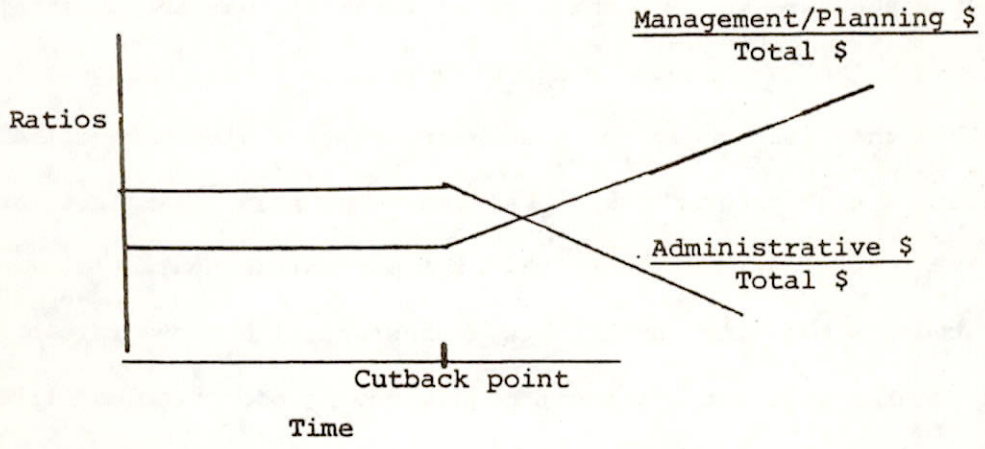
	Administrative	Managerial and Planning Costs
Focus	Internal, within the program	External, outside the program or at the boundary of the program
Time frame	Semi-annual, annual	Three year plans
Organizing Framework	Efficiency, fairness	Mission strategy
Typical Activities	Bookkeeping, accounting, personnel policies, program budgeting, contracts management	Strategic planning, marketing/fundraising, contingency budgeting, networking, career planning, team building, contracting

The managerial/planning column reflects two essential functions of managerial activities under conditions of austerity and uncertainty: program boundary development and program boundary maintenance. In the former, management proactively examines the wider program environment to look for new resources, make new political contacts, shape agreements and understandings with other institutions, develop new ideas on the basis of observed trends, and in so doing possibly transform program structure and staff activities themselves. In the latter, leadership protects the program from undue resource pressure, excessive service demands, and hostile political forces. In both of these activities management is operating at the boundary of the program, both extending the program into its wider environment and protecting its integrity.

The telephone advice programs that numerous programs are establishing

serve both these functions. On the one side, the advice systems are designed to give some minimal client service without at the same time overtaking program resources. But on the other, the service provides program staff with the eyes and ears it needs to survey the evolution of client needs and problems. Both functions are critical to successful program functioning. It is thus incorrect (as some program leaders have suggested) to "contract" this service out or to see it as a secondary function within the set of program activities. Because the phone service operates at the boundary of the program and performs both a developmental and maintenance function, I suggest that program leadership commit significant time and resources to its development and evolution.

The following graph demonstrates the proposed relationships between administration, management/planning and retrenchment.



Team Building

The culture of legal services programs is based on the concept of the "autonomous professional." The roots of this culture lie deep in the tradition of professionalism in the United States. Its assumptions are: a) that the professional-client relationship is confidential; b) certified

professionals are competent; c) the professional must be free to make the decisions he or she deems most appropriate to help a client; d) that professionals should be free to apply their skills to particular areas of work. Certainly since the end of the war, this culture has come under attack as professionals themselves (doctors, lawyers, professors) have become more and more dependent on the operations of large institutions that develop their own prior ties. An "institution versus the professional" conflict has emerged as institutional leaders have tried to apply board strategic and financial criteria to professional activities.

I believe that over the past five years corporation leaders and others have encouraged program leadership to develop program systems through which the work of the autonomous professional would be integrated into some explicit program mission and be evaluated for quality and relevance. Again, the priorities concept represented one such attempt. Yet in many ways it became too mechanical a framework. An abstract planning process often substituted for the hard work of building an internal team and external political linkages between the team and other actors. Many directors and staff felt that they were engaging in an exercise that simply legitimated a set of activities that program culture already supported. Similarly, the great interest in evaluating legal work, as important as evaluation was and is, substituted for thinking through how a substantial and concrete program mission (beyond the abstract statement of "improving poor peoples' lives") could increase the quality and relevance of everyone's work. The quality of an individual's work is the product of both his or her personal competence and training, and the viability of the overall program strategy. The weaker the latter the more do individual professionals feel they have to be "stars" to make an impact on clients.

These compromises and substitutions may no longer be viable under conditions of austerity and uncertainty. I attended one meeting of a small legal services program in which the managing attorney staff was developing cutback plans. They naturally discussed issues of mission and future direction and realized (as many small programs are realizing) that they would have to focus much of their effort on a community education program. One attorney then said, "There may then not be a place for me in this program--I don't want to spend a lot of time writing pamphlets--I want to do lawyering. The managing group discussed the attorney's response, wondering if in fact they could require individual lawyers to do work that was incompatible with their professional identity, and they slowly realized that the issue transcended the question of the salience of community education work to individual staff members. More fundamentally, the staff had to become a team. Because they had fewer resources each staff member was much more accountable to the others for the work each did.

Teams are complex social systems but we know something about the characteristics of effective teams, particularly in undermanned settings. In effective teams:

1. People expect to be treated fairly but keep "long term" as against "short term" accounts. A team member will give more of his time or energy without expecting immediate returns in money or status. They trust that team members will not permit any single member from feeling "exploited" over the long run. The accounts are balanced, but reckoning is done over the long term, not the short term.

2. Team members expect to stretch themselves, to learn new skills and develop new competencies, and discover latent, unexpressed parts

of their own personalities. This happens as the team itself must cope with an inherently unpredictable environment in which both new opportunities and threats emerge without "due notice."

3. Just as team members feel support from others to take on new tasks, they feel that others will not punish them for early failures or mistakes. Just as the team climate is demanding, it is also forgiving.

4. Team members accept and support leaders. Effective work teams are distinct from consensual democratic groups in which leadership is often inhibited or excessively contested. In this context, "followership" is highly valued, since effective followers make the leaders. Moreover, an effective team will function through a system of distributed leadership. A person's distinctive strength will at some point place him or her in a leadership role. If the team itself is to function flexibly, it must configure new working relationships as the task system also changes. Over a given period a program may face a political task, then a litigation task, then an organizational task. Each task should create a new configuration of leader-follower relationships. This does not preclude the formation of a stable hierarchy to fit certain ongoing tasks, e.g. a director who represents the staff to a board. But in a team, authority fundamentally resides in the group as a whole. In this context followership is highly valued, since the rapid reconfiguration of leader-follower roles requires that team members understand the follower role.

5. Finally, teams, like all effective work groups, do not avoid conflict. Yet, in effective teams members do not experience conflict as power plays, but as the result of different interpretations of how

to implement commonly shared objectives.

This list may sound a little like the ten commandments, or an advice giver's homilies for the day--nice thoughts, but can you really pay attention? Yet, if taken seriously they can function as benchmarks with which program staff can evaluate the effectiveness and function of their own undermanned setting. If the program isn't working, if people can't seem to come together, members might call a group meeting to discuss if:

1. Group processes have violated a sense of fairness.
2. People have stretched themselves without recognition and support.
3. People are punished for making mistakes even though they have taken risks for the program as a whole.
4. The group culture inhibits leadership on the one side or too frequently produces contests over leadership. If the latter, there may not be enough variety in the taks system so that leadership can be distributed within it.
5. The team cannot extend itself widely enough into its environment so that it produces a range of tasks which require a correspondingly wide range of leader-follower relationships.
6. The group process is disrupted by power plays. This will be particularly the case if the group cannot clarify its substantive and strategic options. In the ensuing vacuum, power plays will emerge as people try to reduce their own anxiety by trying to command and boss others. But the power that the "victor" wins is empty since the group as a whole lacks power in relationship to its wider environment.

In sum, as legal service programs face both uncertainty and austerity they must learn to work in undermanned "teams." Such teams can be very effective (and rewarding to its members) if team members understand the

dynamics of tean functioning and can evaluate its structure, functioning, and performance.

Evaluating the Program: A Contextual View

Program staff will want to periodically review the status of their organization, its viability, its effectiveness. There are, of course, numerous systems for evaluating organizational performance. One can use financial criteria, quality of work criteria, process criteria (e.g., degree of conflict/trust), "market" criteria, etc. But under conditions of austerity and uncertainty it is very important for programs to focus in particular on those "measures" of the program's relatedness to its wider environment. The staff must periodically assess the "survival" capability of the program itself. Is the program connected to a significant number of stakeholders, does it have visibility, does it have credibility? These terms, visibility, credibility, and connectedness, express a relationship between the program and its setting. They express a transactional view of the program and can help staff examine the program's context and ask how that context shapes the program's relationship to other institutions, groups, and people. If the program's "transactional profile" is bad, if it is isolated, invisible, and lacks credibility, its chances for survival (or meaningful survival) are small.

In discussing these transactional concepts with legal services staff, the following terms emerge most frequently:

Adaptability - the capacity of the program staff to respond to unexpected opportunities and threats in ways that protect its integrity.

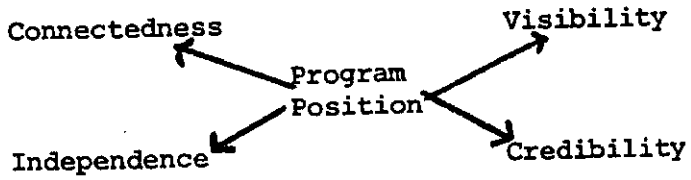
Visibility - the salience of the program to other actors, institutions, and people in the program's wider environment.

Credibility - stakeholders' beliefs that the program can "deliver," that its reputation is good, and that its needs and likely responses should be considered in all decisions.

Connectedness - the measure of a program's dependence on other organizations, groups, and people, and their corresponding dependence on the program. It is a measure of the "density" of the program's network.

Independence - the degree to which the program can make decisions without regard to the needs and influence of other groups.

Clearly, these criteria can pull a program in opposite directions. Independence may come at the cost of visibility, connectedness may limit adaptability, visibility may limit credibility, etc. As the following diagram suggests, at any given moment in time we may think of these criteria as "vector" forces which shape the program's structure in particular ways and organize its relationship to its environment:



There exists no formula to determine the "best" or optimum combination of these transactional measures of program relatedness. Rather, I suggest that when program staff introduce new activities designs, programs, people, etc., they try to assess the impact of this addition to program structure on the above measures of program performance. The following chart provides a simple framework for making such an evaluation:

Impact Table

Criteria

Activity	Adaptability	Visibility	Credibility	Connectedness	Independenc
Develop a phone-advice system	+	+	- or N	+	-
Close office X	+	-	N	-	+

Code: + has a positive affect (increases the particular measure of program functioning

\- has a negative affect

N has no affect

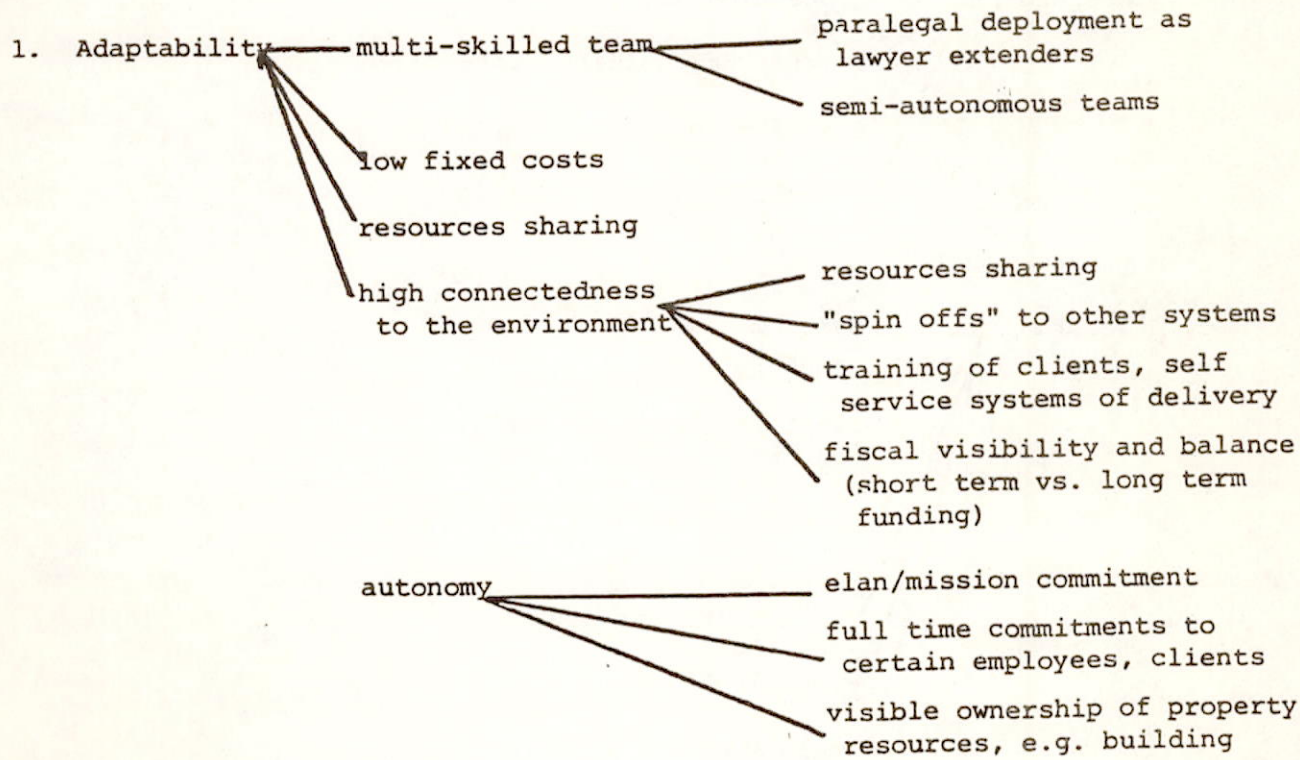
Thus for example, a phone-advice system will increase the program's adaptability because it will be able to track the evolving pattern of client needs. But it may decrease the program's credibility since it will be unable to provide services to most of the people who call. Similarly, by closing office X the program will gain in adaptability (as resources are freed up) but lose in visibility.

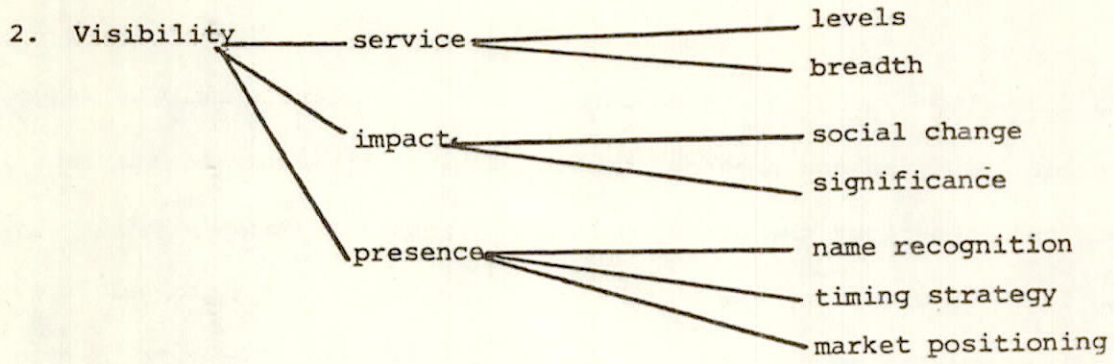
Program staff should keep records of these impact charts. If over a year to two years certain criteria consistently receive a negative rating, that is, the staff is taking actions which consistently reduce its ability to sustain its credibility, it must then re-evaluate its general posture toward its context.

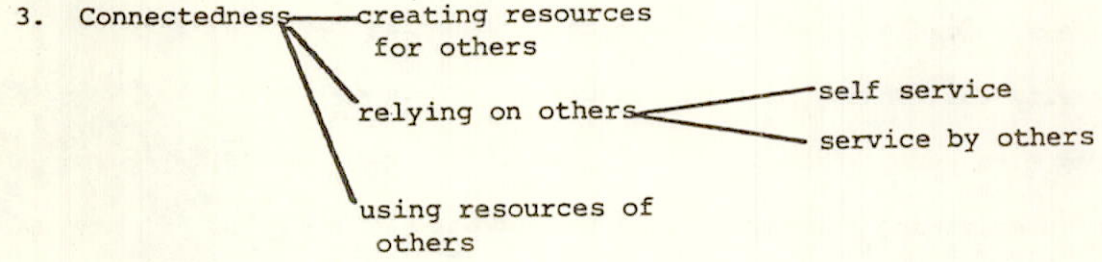
Staff may be uncertain as to how to evaluate the impact of a new activity on a particular criterion. It may ask, for instance, what are the determinants of adaptability, visibility, etc.? The following charts may

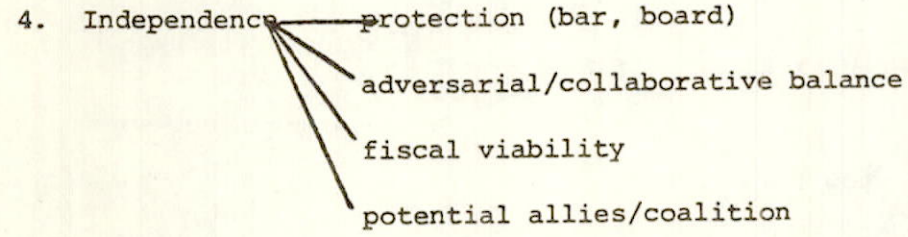
help staff develop a more concrete conception of the relationship between a particular criterion and program structure. Thus for example, adaptability is determined in part by the presence of a multi-skilled team. A multi-skilled team, in turn, is shaped by the way in which paralegals are deployed (i.e., they are less specialized and function as lawyer extenders) and by the presence of semi-autonomous legal teams which take on cases as a group. These charts are not complete. They are, rather, examples of how program staff might clarify the meaning of a particular criterion and show its relationship to program structure. Finally, program staff may wish to use additional criteria in examining the impact of a particular change.

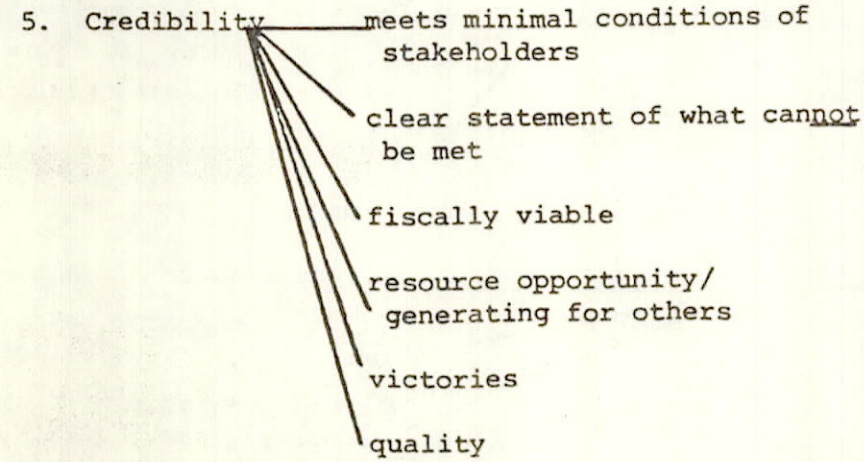
Criteria for Evaluating a Program's Relatedness




2. Visibility
service
levels
breadth
impact
social change
significance
presence
name recognition
timing strategy
market positioning


3. Connectedness
creating resources for others
relying on others
self service
service by others
using resources of others


4. Independence
protection (bar, board)
adversarial/collaborative balance
fiscal viability
potential allies/coalition


5. Credibility
meets minimal conditions of stakeholders
clear statement of what cannot be met
fiscally viable
resource opportunity/ generating for others
victories
quality

Summary

Let me sum up my argument. Under the twin conditions of austerity and uncertainty, legal service programs must shift from a "service driven" to a "strategically" organized program design. This design is shaped by three supporting systems:

1. Strategic management systems matched by a possible decline in the costs of internal administration
2. A professional culture that supports team work
3. An organizational assessment process based on criteria that measure the program's relatedness to its context.

These three supporting systems are all interrelated. The strategic management system protects and develops the program's boundary so that it remains effectively related to its context. The organizational assessment process monitors the program's relatedness. The team culture supports the internal changes required so that the program can develop new relationships to its context when necessary. If a program can develop these three supporting systems it will substantially increase its chances of surviving with effectiveness in the difficult years to come.

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Improving White Collar Productivity: A Review and Critique of Current Work

Working Paper #7
Retrenchment Papers

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FORWARD

The following paper was developed under a grant from the Office of Field Services of the Legal Services Corporation.

They represent the views of their authors only and in no way should be construed as OFS policy. Their aim is to help programs think through the many difficult issues presented by the current threats to Legal Services and to develop effective plans. The papers are based on many interviews and work with local programs as well as derived from the wider literature on retrenchment planning. Given the press of time, we have chosen to make them available in initial drafts. We would appreciate criticism and alternative formulations on these issues and if appropriate will include feedback in subsequent papers or revised drafts. Please send any comments to

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Introduction

The problem of improving "white collar" productivity is multifaceted. We will first discuss several reasons why this is so and then explain the structure of the literature review that follows.

I first want to point out a pervasive bias in most of the broad scope of literature on white collar productivity and clarify this report's stance towards it. In the American, pragmatic, can-do, tradition much of the theorizing and research about the human side of the productivity equation, like that for the technological side has an engineering mind-set. In both the scientific management or Taylorism approach and the human relations approach workers are ultimately viewed as factors in the production equation that need to be manipulated in some fashion. With scientific management workers are viewed as extensions of their machines and their jobs are designed accordingly. The human relations approach was a reaction to this and said worker's feelings and the dynamics of social groups need to be considered when designing work. The impact has still, by in large, been a utilitarian, often manipulative one. Workers are given "doses " of positive or negative feedback (wage increases, bonuses, benefits, job security) in mixes that management deems necessary to achieving its goals.

This mentality denies the complex nature of human interactions and group behavior and in general has failed to produce the commitment needed to improve the productivity of the affected workers. This is particularly true of the better educated and trained white collar workforce. It is no wonder that many of these efforts have failed and labor rank and file are suspicious of management overtures to experiment with quality of work life.

It is our basic assumption that the failure to engage employees, white or blue collar, is not a problem of motivation in the narrow sense, but of gaining commitment from employees based on a deeper appreciation of the congruence between their and the organization's goals. Given this wider framing of the issue it is easier to grasp why efforts to improve productivity need to involve those affected in a meaningful way not only to develop the means to enhance productivity but to jointly define the ends or reasons why the organization is operating.

The field of white collar productivity is a complex one that, in some way, involves all of the factors listed in Figure 1 below.

Figure 1

Strategic Level:	Management of Environmental Relations	
	Strategy and Planning	
Operational Level:	Structural Factors	Behavioral Factors
	Organization Design	Leadership
	Formal Communications System	Administration (direction and coordination or (Who does what, when?)
	Managerial Control System	Training
	Job Design	Career Renewal Program
	Capital Equipment and Technology	Motivation, Evaluation and Reward System
		Informal System/Work Climate
		Group Dynamics

This is the reason current reviews of the subject are so broad and consequently not helpful. For example, the much cited Hughes Aircraft report R and D Productivity fills 40% of its 180 pages with references covering every aspect of planning, decision making and organization behavior. Like many who tackle the productivity problem, they have mistaken activity for productivity.

We will try to avoid a similar mistake by targeting our efforts on those aspects of the problem which are key and are not well summarized elsewhere. Further we will only look at issues that can be dealt with at the "work group" level, although the appropriateness of an organization's structure to pursue its overall strategy, for example, can have a great effect on productivity. (Chandler, 1962; Galbraith and Nathanson, 1978). We will concentrate our efforts on the problems of measuring the productivity of white collar workers. This will include description of how white collar work in general is different in ways that make programming for productivity gains

difficult. This analysis of managerial work will inform the review and discussion of recent research on office automation.

Those seeking improvements in white collar productivity often overfocus on the potential gains made possible by technology which theoretically are much greater than those with "quality of worklife" efforts. While there are those who argue persuasively that improvements in quality of worklife do lead to increases in productivity (Miller,1977; Hiurichs,1978; Cummings & Molley,1977). it is not at all clear that this is the case (Berg et al., 1978). In white collar settings, as in blue collar, capital investments are often far more significant factors in productivity gains than "quality of worklife" efforts but that doesn't mean that behavioral factors can be overlooked. While, in themselves, they may not have the effect some would like, they can have a significant impact on the successful implementation of technologically based productivity experiments. Experience with the introduction of word processing equipment into firms shows that attempts to introduce turnkey systems with little thought to its impact on the workflow and social system can even reduce productivity (Lester, 1978; Uhlig, et al., 1979).

It is hoped that the growing amount of experience with socio-technical design principles (Pasmore and Sherwood, 1978; Cummings and Srivastva, 1977) as well as the maturing field of organizational development (French and Bell, 1973; Tichy and Beckhart, 1978) and quality of worklife experiments (Davis and Cherns, 1975; Cummings and Molloy, 1977; Hinrichs, 1978) can all inform the thoughtful design of white collar work settings.

Finally, quite a hierarchy of white collar employees can be found in most firms. While the majority of work in this area has concentrated on the lower level employees, particularly in the area of office automation, much greater gains can be made by focussing on the higher paid (and hence more costly) middle managers and above. A 10% increase in productivity of a $12,000 a year secretary is equal to only a 3% increase in productivity of a $40,000 per year middle manager. One could argue that the secretary's job is easier to improve upon in that it is more routinized than the manager's and there are more secretaries or clerks than managers in most firms, but an economic analysis of potential payoffs is clear. Experts agree that improving the productivity of higher discression employees through improved management and office automation will be the challenge of the 80's.

Problems of Measurement

What's Being Measured?

There are two major problems that plague the measurement of managerial productivity - the multifacited, unstructured nature of managerial work and the difficulty in positing cause/effect relationship between any manager's actions and the overall performance of the organization. In the classic work on the subject, Mintzberg (1975) trys to debunk the myth that managers "plan, organize, coordinate and control," and that the best are able to do this in the quiet of their office, carefully orchestrating the people around them. Careful observation of CEO's shows that: half the activities lasted less than 9 minutes and only 10% exceeded 1 hour; 93% of the verbal contacts were arranged on an ad hoc basis; no study has found important patterns in the way they schedule their time. The pace is worse for middle managers: a study of US Foremen found they averaged 583 activities per eight hour shift, an average of 1 every 48 seconds; a study of British middle managers found they worked for a half hour or more without interruption only once every 2 days. The manager plays many roles in three area:

1. interpersonal relations - figurehead, leader, liaison;
2. information flow - monitor, disseminator, spokesman;
3. decision making - entrepreneur, disturbance handler, resource allocator, negotiator.

This variety of roles, which often overlap one another, all carried out at an unrelenting pace make it difficult to program a manager's tasks and specify expected outcomes. Outcomes cannot be measured unless they are specified. As we will see, these characteristics also make automation of management activities difficult.

In the traditional hierarchy of responsibility still the norm in most organizations, managers are to handle the exceptions and contingencies, that are not covered by the rules. This means their activities will often be developmental and hence not predictable. Further the best manager, who anticipates trouble before it occurs may be less active than his counterpart who merely responds to each crisis.

Besides having difficulty specify what a manager does, how this contributes to the overall productivity of the organization is difficult. Most discussions of white collar or managerial productivity are really not referring to the total productivity of the firm, but of labor's contribution to it. Unless other factors are taken into account,though,this information is meaningless, (Craig and Horus, 1973). Total productivity of a firm can be stated:

$$\text{productivity} = \frac{\text{total output}}{\text{labor input factor} + \text{capital input factor} + \text{raw material \& purchased parts input factor} + \text{other miscellaneous goods and services input factor}}$$

Inputs and outputs must all be stated in a common measurement unit, usually dollars, that are adjusted to the same base dollar unit. Ruch and Hershauer, (1974) present a comprehensive model of the factors that affect an organization's productivity. This is included in as Appendix I.

Some examples, from Dahl (1979) will show how often meaningless productivity figures are missused. A common measure of productivity is company sales against the number of employees. But this ignores:the fact that sales does not necessarily reflect earnings; inflation and pricing strategy; different employee costs. Dividing pretax earnings by the number of employees in a firm is still not accurate because there is not a common unit of measurement and other relevant factors like capital investments are ignored. More accurately weighted figures can be obtained by substituting number of employees for $100 units of payroll, but this still ignores capital expenses. A measurement that has been successfully used at Upjohn is a variation of value added, or the measure of value or benefit an organization adds to what it buys. Value added equals sales minus purchased goods and services. A further breakdown separates the personnel costs.

Sales - Purchased Goods and Services = Value Added = Employee Costs + Capital costs + Pretax Earnings.

By calculating each of the components of value added as a percent of total value added and plotting the results over time a useful measure is produced that accounts for both major inputs (human and capital) and the

end result of earnings. Management can then use these figures when trying to cost out investments in capital or "human resources" or discussing the total productivity of various units. It should be noted that these figures would be difficult to use when assessing the performance of anyone lower than top level managers because of the aggregate level of data needed to calculate the results. Also those being evaluated may feel strongly that there are relevant factors, such as capital acquizitions,or training which are beyond their control. In this situtation, performance evaluations have been shown to decrease motivation.

It should be noted that much of the productivity literature ignores a crucial distinction between efficiency and effectiveness except when correctly claiming that U.S. management has recently been morgaging short term efficiency against longer term effectiveness. This distinction is true at a finer level of analysis though. First, efficiency refers to the technical ability of an organization to minimize the costs of transforming specified inputs into acceptable outputs. The term effectiveness is used to refer to the organization's ability to maximize returns to it by what - ever means; including not only the technical efficiency of its throughout process but the management of its input and output environment by political and other means. Many discussions of short term productivity changes accept the given organizational configuration without asking the more fundamental question of whether this is the most effective way for the organization to reach its goals. If productivity improvements, through office automation, for example, free a manager's time to only pursue the same tasks or customers in greater detail instead of experimenting with new ways of getting the job done or developing new customers, there will be no overall productivity gains. This becomes particularly important in situations, with unions or in the public sector for example, where it is difficult to reduce personnel costs. Goodman and Pennings (1977) present a good over-view of theory and research on organizational effectiveness.

Given these problems with economic measures of white collar productivity some research on behavioral measures could prove useful, particularly when trying to assess the more subjective or qualitative aspects of a manager's performance. Besides the situational approaches to leadership (see Filley, House and Kerr,1976) and the quite limited Work in America Institute review on managerial producitivity, Moise and Wagner (1978) present an intriguing

approach based on Mintzberg's findings. They developed an instrument to measure the variety of roles outlined by Mintzberg, reducing the set to six factors:

1. Managing the organization's environment and its resources;
2. Organizing and coordinating around the separate and distinct tasks toward the accomplishment of overall organizational goals;
3. Information handling to identify problems, provide understanding of a changing environment and to serve as input for effective decision making;
4. Providing for growth and development for themselves and their associates;
5. Motivation and conflict resolution;
6. Strategic problem solving.

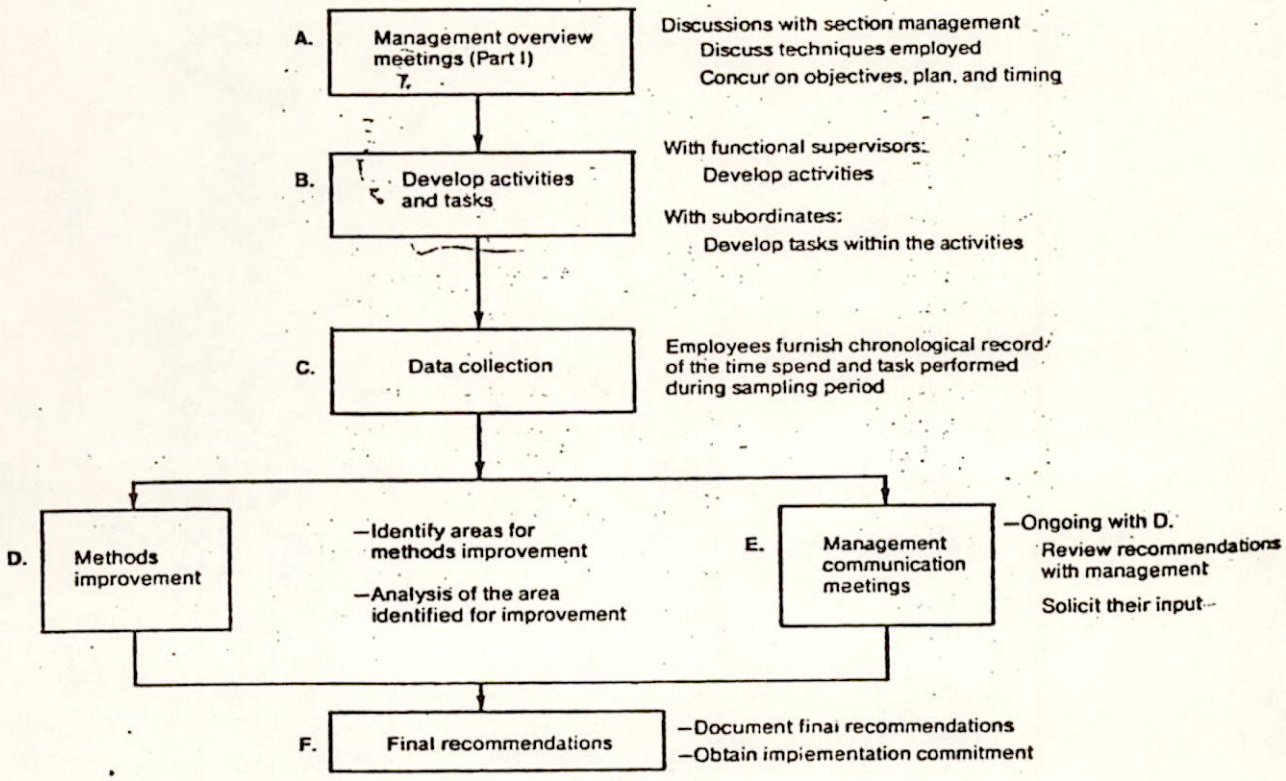
While these can only serve as surrogates of output, it is assumed that changes in these indicators will reflect changes in producitivity, if all other factors remain constant. This approach could prove useful in validating the more subjective performance measures used in many MBO programs.

A similar widely used rating system was developed by Hay Associates. The Hay system measure three basic competencies for each job: know-how, problem solving and accountability, or ability to assume responsibility. Know-how is further broken down into three kinds of job knowledge: technical, managerial and human relations. Problem solving and accountability also has several dimensions. These two systems are representative of a number of performance evaluation frameworks that can be used. They can enhance the positive motivational potential and hence productivity increasing impact of a well managed MBO and performance evaluation program. These efforts chronically fail to motivate because the goals are seldom clear, written, measurable or tied to specific a time frame. Further, they seldom represent a genuine synthesis of a subordinates' goals to those of the superior. (See Levison, 1970; MBSC, 1980).

How Do You Measure Productivity?

There are two basic approaches to this that use similar analytical techniques. The major differences lies in how involved those being measured are. The first approach is the traditional industrial engineering one in

which work study specialists anlayze task sequences, collect data on time use and propose work changes to management (Cannon 1979). The process is diagrammed below:



Implementation problems with this method are acknowledge and an effort is made to project a positive image. "In all cases we started with the premise that we weren't just conducting an efficiency study but that out motive was to improve the way we do business." "That may sound like a motherhood and apple pie statement of objectives, but the subtlety of the study is the avoidance of any reference to attitudes such as manpower cuts and everyone must work hard."(Cannon, 1979). "Gaining the confidence of that supervisor and the workers can be a big problem. Jerry Hamlin, a productivity expert at Cities Service Co., spent more than two months just circulating within the company the concept that productivity improvement did not mean workers would have to work harder on that employment levels would be reduced. But after that, he still ran into some resistance." (Adkins, 1979).

To expect to be able to overcome employees's resistance to what has often resulted in speed-ups in only two months shows a regrettable lack familiarity with the extensive research in this area. If this is at all indicative of the experience in the field it appears that many of the white collar productivity improvement efforts will repeat the mistakes made in earlier blue collar efforts. (See Davis and Cherus, 1975).

A more participative approach promises to over come some of these problems of buy-in to productivity experiments which make such a crucial difference when changes are implemented system wide. The American Productivity Center (APC) has borrowed the proven organization development group process Nominal Group Technique (NGT) (See Appendix II) and renamed it WORK PAD (Work Productivity Analysis and Design). They report good results when tried by the National Micrographics Association's Office Productivity Council (Presnick, 1980).

This process could prove useful in "quality circles" (QC's) that have been used extensively in blue collar settings and are now being tried in offices as well, (Adkins, 1979). The QC usually consists of all the workers in an office or section. It meets once a week for one hour, on company time, to identify and prioritize problems. Each group has a leader and a "facilitator" who researchers the problem and reports back to the QC. Suggestions are then submitted to management for approval. Because of the workers involvement in identifying problems and suggesting solutions the quality of the changes has been better and the resistance to implementation has been greatly reduced.

A continuing problem with both "work study" and participative methods is how the information on individuals' performance is used. The opinion in IBM for example is, "all results for every country are distributed to all participants. . ." "Every manager being measured by the system must know not only where he has efficiencies and inefficiencies, but also how he fits into the total picture and where he might go to learn how he can improve." (Adkins, 1979). While one can agree that it is important for one to know where they stand it is not clear that the open book method is the best way to convey that information. Experience has shown that the whole idea of productivity gains degenerate into gamesmanship with counter productive results.

Office Automation

We are living at an interesting point in history when several important historical trends are converging. First is the shift to the post-industrial, service economy. Several years ago, for the first time, more than 50% of the GNP was produced in service industries. There is a parallel increase in the percentage of the workforce who work in offices. Between 1975 and 1985 that number is expected to double from 20% to 40% of the workforce. Coupled with this trend is the increased capacity and reduced cost of information manipulation, communication and storage. The cost of computer circuits is expected to drop by a factor of more than 20 during the next decade. Computer memory is expected to drop by a factor of 170. Communication technology costs are also expected to drop by a factor of 3 (Uhlig et al,1979). As a result, this formerly scarce, costly resource is now becoming inexpensive; technology is no longer the limiting factor in the design of data processing systems. Finally a quite disturbing trend is the lack of productivity growth in the service sector. One study states that annual blue collar productivity has grown at 2% between 1972 and 1977, while shite collar productivity has grown an average of only .4%. One reason for this disparity is the tremendous difference in the amount of capital invested in each setting. The manufacturing industry has invested $25,000 in new equipment and technology per production worker, but white collar businesses have invested only $2,000 to $6,000 per office worker (Rhodes,1980). This nexus of the need for productivity improvement, the availability of moderately priced technology and the feeling (possibly overly optimistic) that technology can have a major impact, has led to the explosion of equipment for office automation. One only needs to look at any business magazine to notice the change in the mix of advertizing from only 10 years ago, to one dominated by word processors and electronic data processing.

Given that most offices are virtually the same as they were 30 years ago, there is clearly room for improvement. Harvey Popel, senior vice-president of Booz, Allen and Hamilton claimed a potential savings of $300 billion per year (Zientara,1980) by increased productivity through office automation. Now while potential exists, it is questionable if improvements of this magnitude are possible, at least not in the near future. It seems

that appropriate design methods and careful phase-in strategies are essential if office automation is to achieve its potential. We will first look at the tasks of white collar workers,then, two basic approaches to the automation of these tasks and the impacts these have had and can have on white collar work. We will end by looking at the problems of designing and successfully implementing these systems.

Needed Capabilities of the Automated Office

The chart below (Uhlig et al.,1979) displays a number of the tasks carried out in most managerial settings.

Office Processes vs. Office Activities

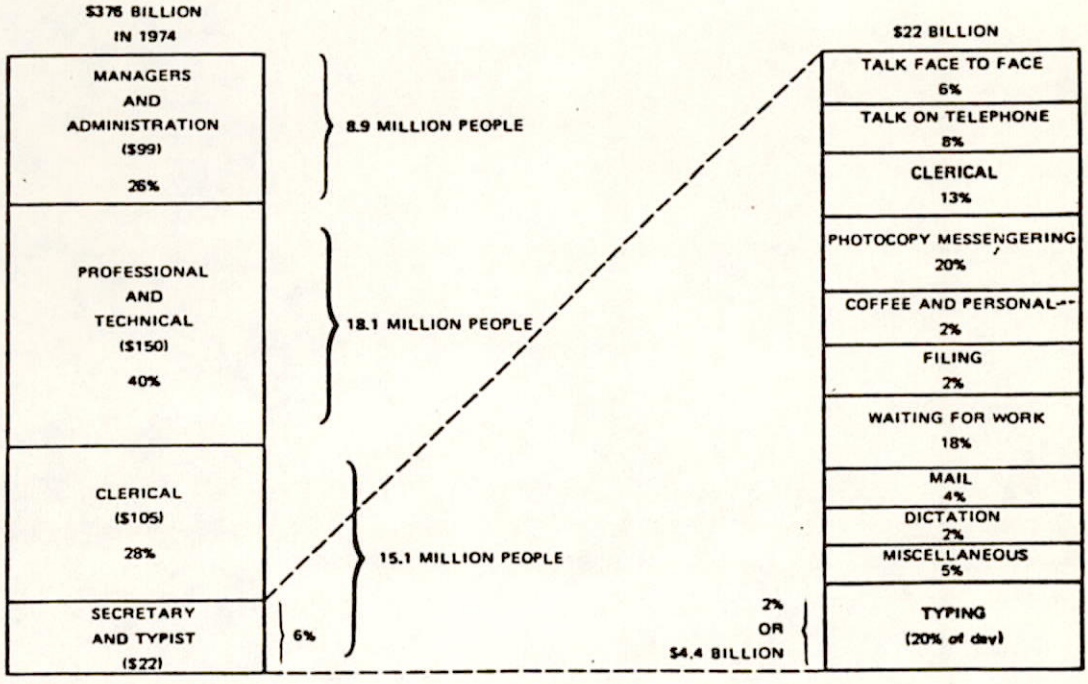
Processes		Activities
Planning		Communicate
Programming	Each of these	Gather
Budgeting	processes entails	Retrieve
Coordinating	some of these	Analyze
Monitoring	activities.	Organize
Policy Formulation		Transform
Decision Making		Generate
Directing		Modify
		File

As you can see, each of these tasks can entail a number of activities like retrieving stored information, analyzing it, generating a report, communicating the results and filing both the report and the original information for future use. The technology to do most of these tasks has existed for years. Conceptual advances in software design have only recently enabled these separate devices to communicate with each other which has provided the key. 80% of a manager's or researcher's job is communicating. It is the capability to electronically store, reproduce, manipulate and then communicate this new piece of information to a co-worker that makes the automated office possible.

There is a hierarchy of tasks in this list, and it is only recently that the more difficult tasks of analyzing, organizing and transforming information could be done with reasonably integrated systems. Initially the

technology and software has been used for either gathering information— data based searches, filing or retrieving information— management information systems, and generating hard copy— word processing. Further work in any of these areas would yield diminishing returns as the analysis below will illustrate. Again we are faced with the reality that these peripheral

The Distribution of Labor Costs and Secretarial Activities



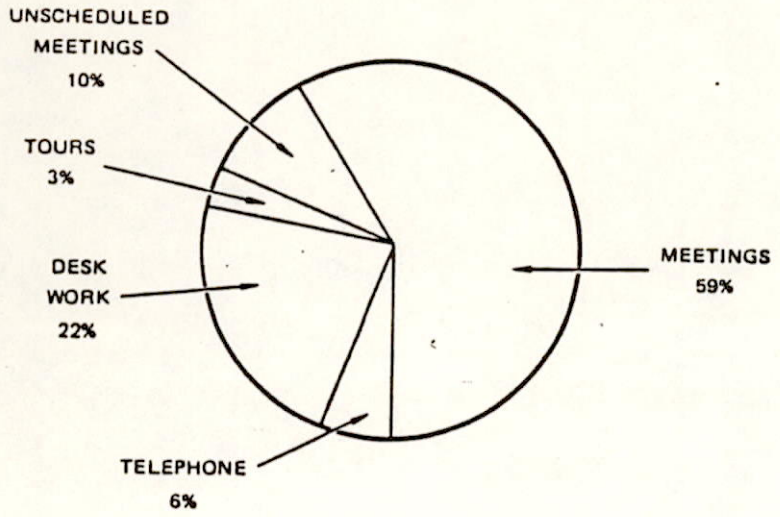
functions just do not constitute a large enough amount of the work in offices to contrubute significant cost savings when automated. It is only when integrated systems become useful to the more costly 66% of the employees-- the administrative and professional staff-- that real savings will accrue.

Strategies for Managers and Professionals

Two approaches promise to enhance the productivity of knowledge workers. The first is to automate routine activities, while the second is to inhance their analytical and decision making capabilities. The first option, while possibly not as exciting, is the easier of the two. For this reason many have concentrated on this first. The distribution of managerial work,

below, shows several areas where computer mediated communications could save time. Computer conferencing or electronic mail could reduce the

Managerial Work Distribution



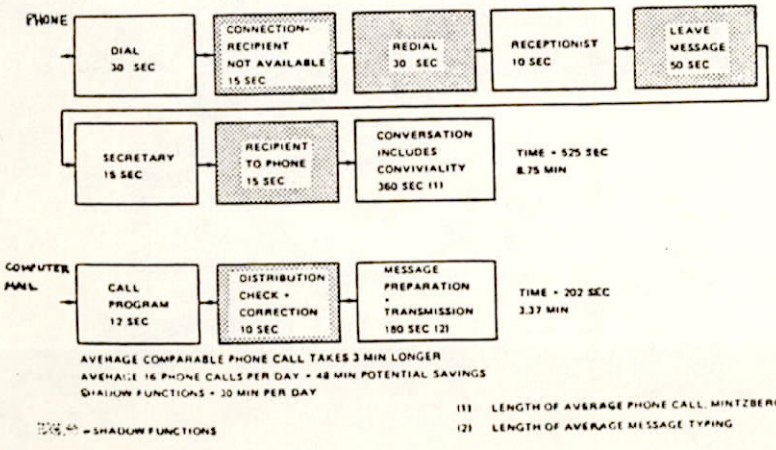
NOTE: COMMUNICATION IS 75% OF THE TIME.

(Uhlig et al.,1979)

amount of time spent in meetings and on the telephone, for example.

A key concept here is the "shadow function." These are the unforseen, unpredictable, time consuming activities that are associated with accomplishing a task but do not contribute to productivity. Take the typical phone call diagrammed below (Uhlig et al.,1979). If you consider the per-

Scenario for Labor Loss Due to Shadow Functions



centage of calls you make that don't get through you will see the potential cost savings here. Advocates of computer conferencing point to the travel time saved (refered to as "ugly travel") as well as the increased flexibility in scheduling. Those researching the potential for electronic mail claim information sharing at meetings can be reduced so that time can be spent utilizing the synergy possible in face-to-face sessions analyzing material and making decisions.

The alternative strategy of enhancing the analytical capabilities of the researcher or decision maker entails the much more difficult task of designing decision support systems (DSS's). The basic conceptual process here is the development of models of the system one is making decisions about. These models are then used as heuristic devices with which to speculate about and test potential outcomes to various decisions. A complete DSS would include: models of the system being controlled and its environment; timely data about the system; analytical capability to test different hypotheses about the system; and equipment to display the results in a meaningful fashion. (For a more complete explanation see Ackoff, 1970, and any of Stafford Beer's work. A schematic of an adaptive management system, from Ackoff, 1970, which shows the separate functions of a DSS is included as Appendix III.) The table below (Alter,1976) highlights the differences between a DSS and the more familiar electornic data processing (EDP) System. It is the misuse of the latter with its dictatorial inflexibility that has soured most people to computers and will probably add years to the time it will take the public to accept the current generation of much more humanized computers.

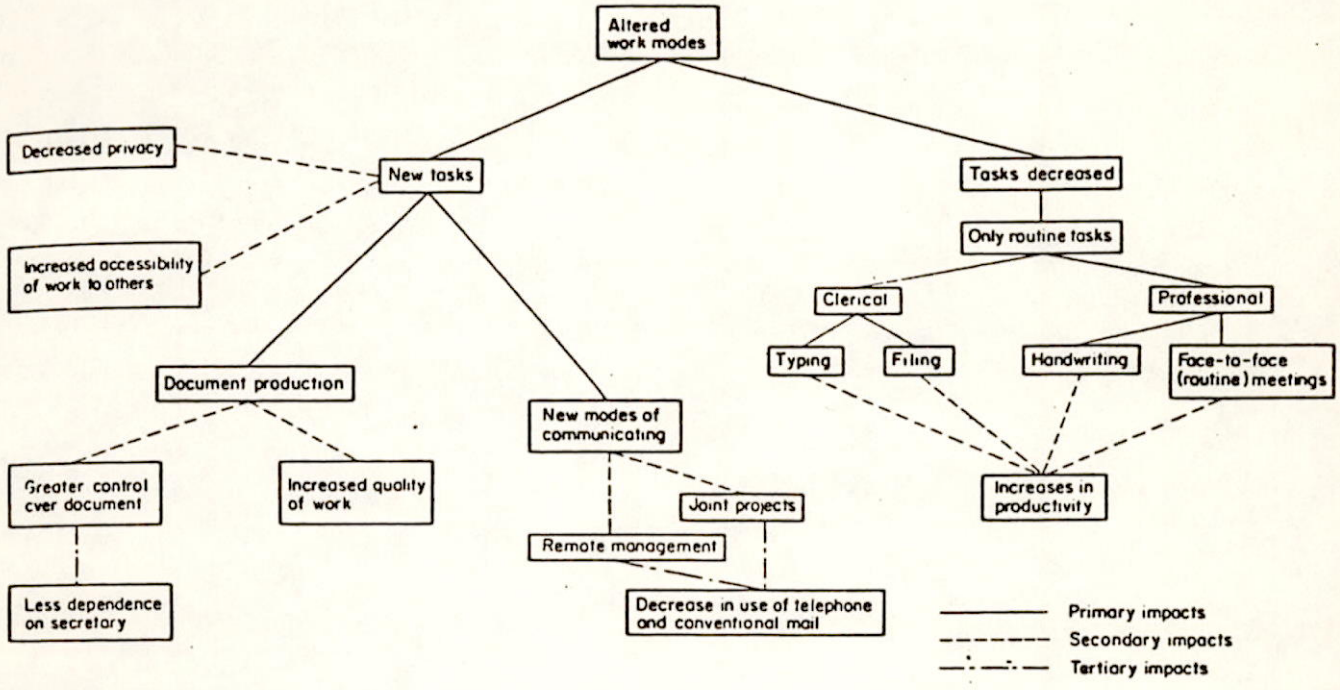
Comparison of EDP Systems and Decision Support Systems

	EDP	DSS
Purposes	*Transaction Processing *Record Keeping *Business Reporting	*Decision Making *Decision Implementation and Control
Uses	*Obtain Prespecified Aggregations of Data in the Form fo Standard Reports	*Retrieve Isolated Data Items *Use as Mechanism for Ad Hoc Analysis of Data Files *Obtain Prespecified Aggregations of Data in the Form of Reports *Estimate Consequences of Proposed Decisions *Propose Decisions *Make Decisions
Characteristics	*Passive Clerical Activities *Oriented Toward Mechanical Efficiency *Focus on Past *Emphasis on Consistency	*Active Line, Staff and Management Activities *Oriented Toward Overall Effectiveness *Focus on the Present and Future *Emphasis on Flexibility and Ad Hoc Utilization

Impacts

Although a series of studies is currently underway, few completely automated work-stations have been evaluated (see Edwards,1978;Ulhig,1979; White,1977). The results have been positive, although claims of productivity improvements are challenged by considerations discussed earlier. Clearly problems remain which relate to worker isolation, frustration with flawed systems, unanticipated impacts on informal groups and the disruption or inappropriateness of traditional supervision. The two diagrams below summarize early research done by the Stanford Research Institute (SRI) on the first users of its prototype system, NLS.

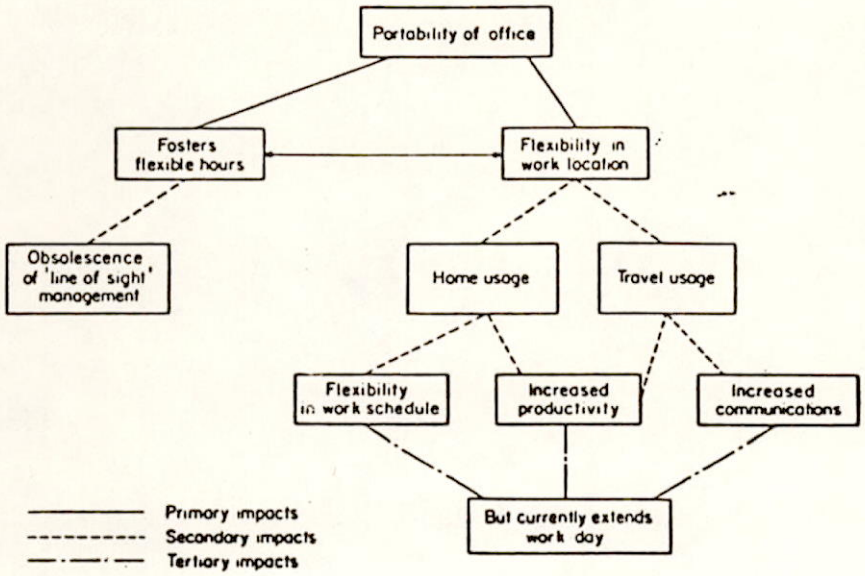
Primary Impact I: Altered Work Modes



Ulhig et al. develop a comprehensive framework upon which future evaluation studies can build. It remains largly speculative to date though, and experience with the diffusion of other technological innovations (Duncan et al.,1973) suggests that major problems still lie ahead.

A final note must be stated again. As a unit is able to automate certain standard functions, creative thought needs to be put into new ways that unit can contribute to the organization's task. Upper management or an appropriate task force should stay one step ahead of this process. It is important to

Primary Impact II: Portability of Office*



relate the unit's work to the more inclusive goals of the company and for the office automation effort to be integrated into the ongoing planning and development of the organization. If not, a great danger exists that any productivity gains will be lost to more efficient business as usual.

Implementation

Attempts to implement word processing systems, electronic mail and early automated work-stations provided some insights.

Driscoll (1979) makes the observation that much of what has been called office automation is not. He differentiates two stages - mechanization of tasks and automation of procedures - which should be integrated and guided by a "socio-diagnostic design" process. The chart below outlines the differences in the thrust of the three stages.

Stages in Implementation

Stage	Mechanization	Automation	Socio-Diagnostic Design
Focus	Tasks	Whole Procedures, Control Processes	Missions
Criterion	Indivi.Efficiency	Org. Efficiency	Org. Effectiveness

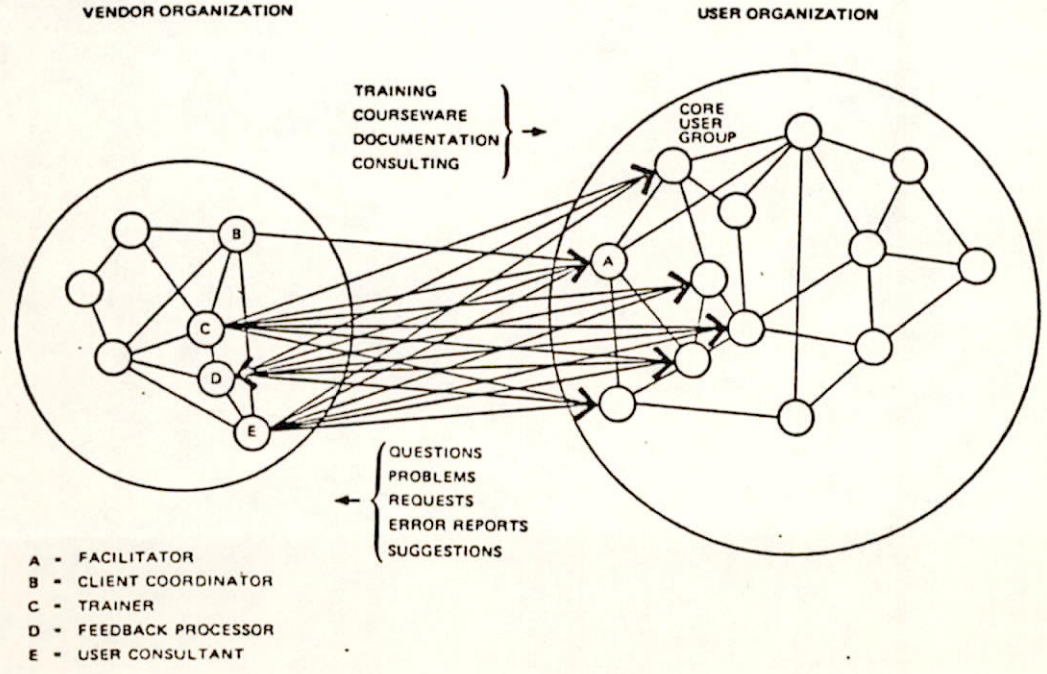
* See Appendix IV.

Form	Hardware	Software	Management
Discipline	Electrical Engineering	Artificial Intelligence, Industrial Engineering	Applied Behavioral Science
Origin	Vendor	Vendor	User
Obstacle	User resistance	Programming	Management
Feasibility	Present	5 years	Present

He further suggests a two stage approach to implement office technology. First there should be a broadly felt need for improvements. This means that those affected by the innovations should be involved in diagnosing the need for changes. After the need is established, there should be a slow paced, non-directive program in which experiments are tried and evaluated on a small scale. Successful systems are allowed to diffuse throughout the organization. The vehicle for this whole effort should be a top-level interdepartmental task force that should include staff with senstivity to the personnel issues involved. A facilitator is important.

Ulhig et al. (1979) give a more detailed description based on the early experience with SRI's NLS and include the actors below.

Communication System During Implementation



This process is more realistically complex because the organization will be dealing with one or more vendors. For this reason, the facilitator's role would include both coordinating the efforts of the core user group, the high-level task force and the vendor as well as being sensitive to the development of the user group and the "process" in general. Obviously this role is key; the person will have to be able to understand the culture and speak the language of each group as well as be knowlegable of both the core group's work and the new technology. Care should be taken in selecting and supporting this person.

Bair provides seven implementation principles which emphasize social and psychological factors:

1. An adequate level of usage must be maintained. Daily use is necessary for an electronic mail system to get started. Adequate skills necessary to fully appreciate the system won't be developed without constant use.

2. The environment must be flexible and work-station oriented. The ergonomics, logistics and asthetics of the automated office must be considered for people to be able to use the technology for much of the work day.

3. Equipment must be available to each user at all times. Each person should have his own terminal and immediate access to printing facilities.

4. Co-workers must be system users. Carefully consider the boundaries of the work group when selecting a unit and designing the system. The shared tasks should determine what are "natural" boundaries. The socio-technical design literature is invaluable here (Pasmore and Sherwood, 1978; Cummings and Srivastva, 1977; Davis and Chens, 1975).

5. There must be a need to communicate within user groups. Plan stages of the implementation so that as additional units are added the still limited group of users will communicate. A community of users should be strived for; common goals, tasks, management and interests generate communication traffic.

6. A ongoing assessment is desirable. "Implementation without a formal assessment is analogous to trying to navigate a mine field blindfolded."

7. Adequate user support must be provided. This should not only include training, but specialized documentation, a mechanism for feedback and ongoing consulting in the use of the technology.

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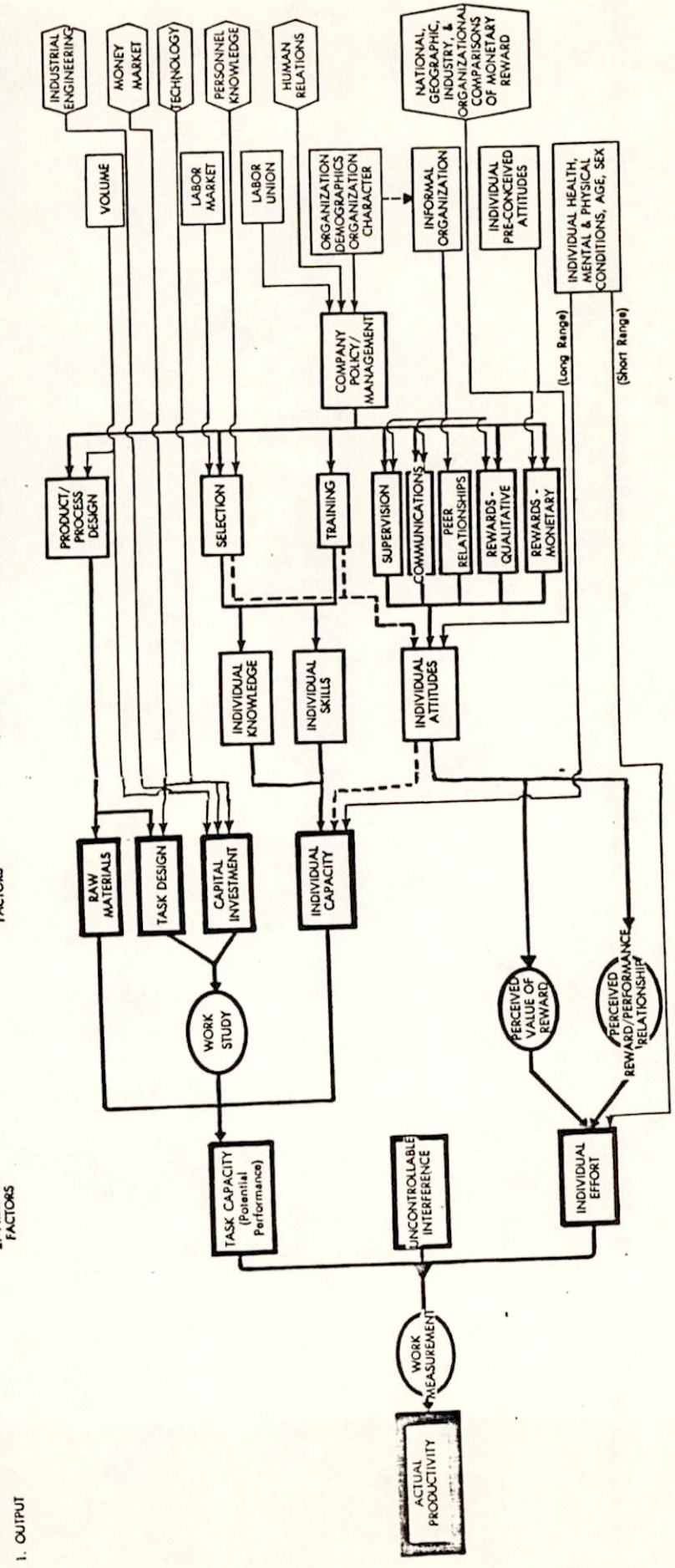
A CONCEPTUAL SCHEMATIC MODEL OF FACTORS AFFECTING WORKER PRODUCTIVITY



SCALES OF MEASUREMENT

1. MANAGEMENT		
A. Leadership Style	participative	autocratic
B. Selection: PFW	strict PFW	no PFW
C. Selection Criteria	attitude	skills
D. Beliefs re Productivity	controllable	uncontrollable
2. SUPERVISION		
A. Leadership Style	participative	autocratic
B. Selection: PFW	strict PFW	no PFW
C. Selection Criteria	attitude	skills
D. Support/Autonomy	maximum	minimum
3. COMMUNICATIONS		
A. Formal	open	closed
B. Informal	open	closed
C. Written-Upward	specified	unspecified
D. Written-Downward	open	closed
E. Performance Feedback	full	none
4. MONETARY REWARD		
A. Amount of Pay	high	low
B. Individual Incentive	full	none
C. System Incentive	full	none
5. NONMONETARY REWARD		
A. Job-Related	high	low
B. Social Rewards	high	low
6. JOB DESIGN	open	closed
7. WORKING CONDITIONS		
A. Job-Related	maximum	minimum
B. Not Job-Related	maximum	minimum
8. TECHNOLOGY	leader	anchor
9. LABOR-MANAGEMENT CONTENTION	cooperation	belligerence
10. TRAINING	maximum	minimum
11. COMPANY CHARACTERISTICS		
A. Special Programs	dominance	absence
B. Job Security	maximum	minimum
C. Reputation	best	worst
12. COMPANY DEMOGRAPHICS		
A. Ownership	unified	diffused
B. Location	urban	rural
C. Technological Change	rapid	slow
D. Worker Representation	unified	diffused
E. Labor Market	employer's	employee's

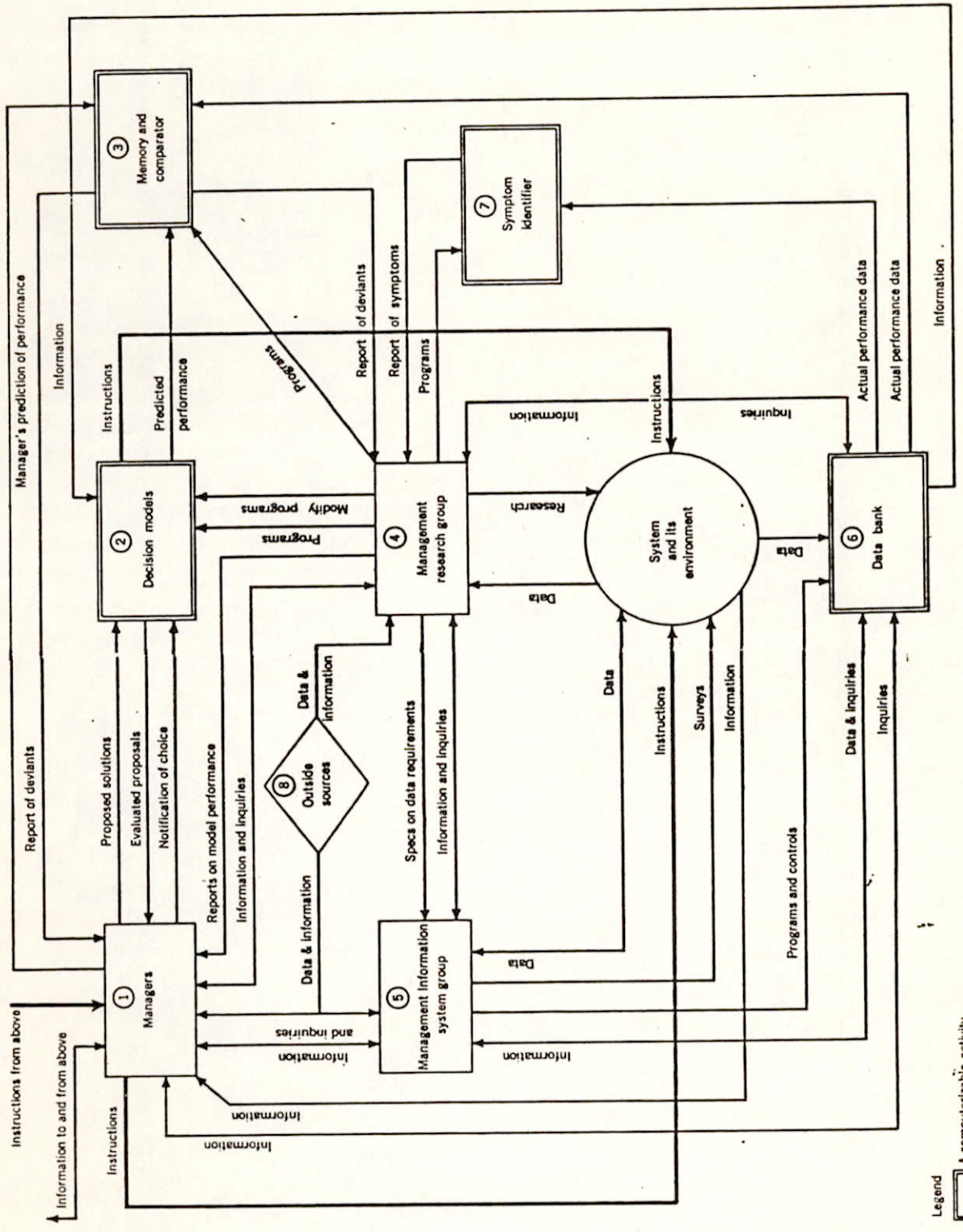


FIGURE 8.1 An adaptive management system.

Sony announces the typewriter, dictator/transcriber, text editor, communicator that fits in a briefcase.

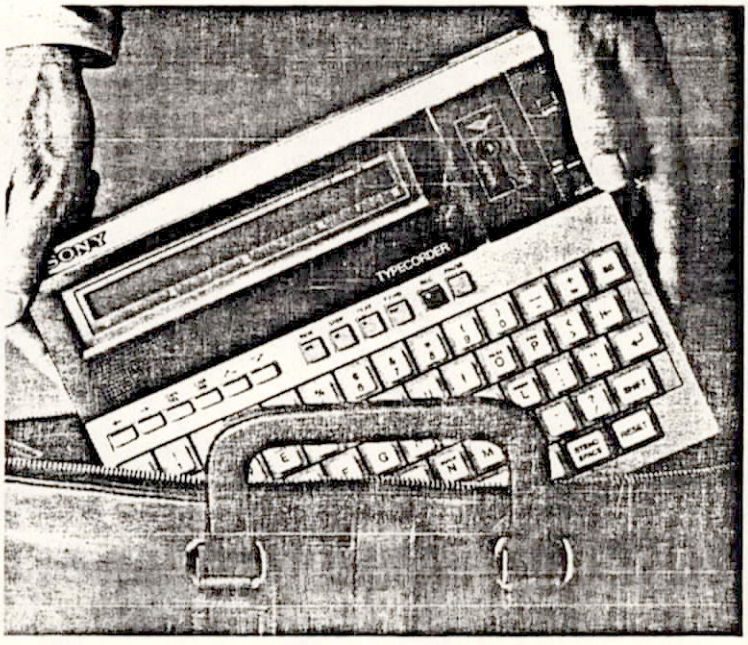
And it's only the beginning.

Office automation will never be the same. Because now when you want to automate your office, you can buy a Sony.

The same innovative Sony technology that revolutionized home entertainment is now coming to the office. And it's going to make your work easier, better, faster, and more efficient.

Sony is about to begin a revolution in office automation, called Sony-mation.™ It's going to make some of your favorite old machines obsolete. And it'll introduce you to equipment you never imagined was possible.

But we're not going to promise you all those things ten years from now, or even two years from now. That's because the Sony-mation revolution in office automation starts today.



Sony introduces the three pound office.

It's called the Typecorder.™ A name you've never heard before, because until now there's never been anything like it.

The Typecorder is merely 8½"x 11"x 1½", weighs about 3 pounds, and it can be used in your office to replace many single function machines, or as a veritable portable office that also lets you stay in touch with your home office. With the Sony Typecorder in his briefcase, the traveling executive, insurance adjuster, reporter, or retail buyer can take an office with him while transmitting information to his home office.

The Sony Typecorder takes advantage of Sony advances in microcassette technology. The same microcassette can store both dictation and pages of text. And that typed information can be sent from your Typecorder anywhere in the world. Coming out in your office as hard copy. In addition, by carrying a Sony portable printer in that same briefcase, you can have hard copy wherever you travel. Or if you want finished copy in your office, just use a Sony full sized printer. In fact, Sony even has a way to turn an electric typewriter into a printer.

But no matter where you use it, in your office or on the road, the Sony Typecorder is truly unique. What other machine lets you talk to it, type on it, edit text with it, transmit information through it and weighs about 3 pounds?

Sony reinvents word processing.

With Sony-mation you're not only going to get an office that you can take with you, you are also going to get a better office with our new word processor, Series 35.™

Series 35 does things other word processors never dreamed of doing. First of all, it's the only word processor that's also a transcriber. Second, it's so small and compact that it fits comfortably on top of any desk.

Series 35 is also simple to use. The Conversational Keyboard™ usually takes just one day for an operator to learn. And the full page Sony screen offers clear, sharp, easy-to-read characters.

But we not only give you a clear picture; we give you the first 3"-type diskette. It accommodates as much information as the conventional sized floppy disk. In fact, no other removable disk lets you put so much information in such a small space. And because Series 35 is compatible with our Typecorder, you can transfer information from microcassette to disk.

There's more to come.

You're going to be hearing about other Sony innovations in office technology. So if you're thinking of changing or adding equipment, before you do anything about it, you had better talk to Sony first, and find out all about Sony-mation. But remember one thing, it's only going to be the beginning. **SONY.**

For more information on the new Sony-mation revolution call 1-800-821-7700 Ex. 7070,* or send this coupon to Sony Office Products, P.O. Box 1624, Trenton, N.J. 08650.

*In Minnesota call 1-800-542-7655 Ex. 7070

☐ Please send literature. ☐ Please have representative call.

NAME AND POSITION

TYPE OF ORGANIZATION

NAME OF ORGANIZATION (AREA CODE) PHONE

ADDRESS

CITY STATE ZIP

SONY OFFICE PRODUCTS
Machines that understand people.

(More symbols can be invented to meet your needs). Important external "trigger" events should be noted. Predict when you think these will occur, or the latest you can wait to act without knowing the outcome of the action. The more detail you can fill in on this chart the better prepared you will be.

5. Finally from this chart develop a task list detailing what has to be done when and by whom? A form that can be xeroxed and filled in is attached. You have not completed your planning process until this task list is completed and circulated to the appropriate people.

TASK LIST

Task	By whom?	When?