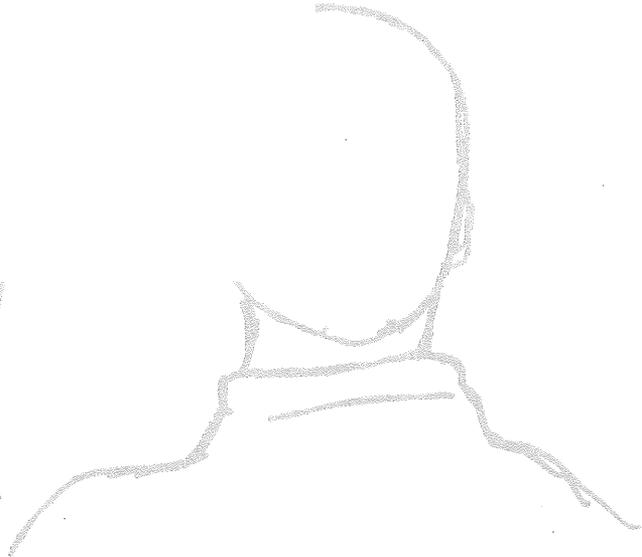


**IMPLEMENTING A
PRODUCTIVITY
PROGRAM :**

POINTS TO CONSIDER



PREPARED BY

**JOINT FINANCIAL MANAGEMENT
IMPROVEMENT PROGRAM**

JOINT FINANCIAL MANAGEMENT IMPROVEMENT PROGRAM
Suite 705, 666 Eleventh Street NW.
Washington, DC 20001

Phone: (202) 376-5415

The Joint Financial Management Improvement Program was authorized by the Budget and Accounting Procedures Act of 1950. It is a joint and cooperative undertaking of the Office of Management and Budget, the General Accounting Office, the Treasury Department, and the Civil Service Commission, working in cooperation with each other and with each of the operating agencies. The overall objective of JFMIP is to improve and coordinate financial management policies and practices throughout the Government so that they will contribute significantly to the effective and efficient planning and operation of government.

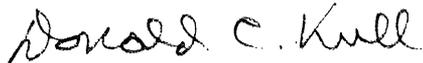
FOREWORD

During the early phases of the interagency effort to measure and improve the productivity of Federal workers the major thrust of the program was on the development and use of productivity measurement systems. Substantial progress has been made and measures are now being used for about two-thirds of the Federal civilian work force. Increasing attention is now being given, and properly so, to the development of comprehensive productivity programs and the management use of productivity data.

For about three years the Joint Financial Management Improvement Program participated actively in this program. We issued three annual reports on productivity to the President and Congress, the last one in July 1976. During this time we accumulated a great deal of information about productivity programs. We think we know some of the reasons for the successes that have been achieved. We also have some ideas on things that should be done differently or better. While our focus has been primarily on productivity in the Federal Government, we have had occasion to observe productivity programs of State and local governments and various private business firms. We have been impressed by the similarity of approaches used in the different sectors and by the great potential for useful interchange of ideas.

The purpose of this booklet is to capture some of the lessons that have been learned about productivity programs. We have drawn heavily on the information presented at a January 1976 conference on "How to Implement a Productivity Program" which was sponsored by JFMIP and the National Center for Productivity and Quality of Working Life. We believe the ideas presented by the four business speakers at that conference have widespread applicability. Examples of successful productivity programs of government organizations may be found in the case studies included in JFMIP annual productivity reports.

Additional relevant information may be obtained from the National Center for Productivity and Quality of Working Life, which now has leadership responsibility for national productivity efforts, including the work in the Federal sector.



Donald C. Kull, Executive Director
Joint Financial Management
Improvement Program
March 1977

IMPLEMENTING A PRODUCTIVITY PROGRAM:
POINTS TO CONSIDER

C O N T E N T S

		<u>Page</u>
FOREWORD		
CHAPTER		
1	Introduction	1
2	Organization and Content of Program	4
3	Measurement Systems	12
4	Management Use of Productivity Data	20
<u>APPENDIXES</u>		
A	Productivity at Xerox	28
B	Productivity Improvement--The Travelers	39
C	Productivity Measurements-- Today's Challenge to Management for Tomorrow's Survival	49
D	So You Want to Do Something About Productivity...???...How to Get a Program Going in your Organization	58

IMPLEMENTING A PRODUCTIVITY PROGRAM:
POINTS TO CONSIDER

CHAPTER 1

INTRODUCTION

Productivity may be defined as the rate of efficiency in producing goods or services, or the ratio between the units produced or services provided by an organizational unit (output) and the resources consumed in production (input) during a specified period of time. A productivity index measures the efficiency of the producing organization over a period of time by comparing the current output/input ratio with that of a previous base. A common way of expressing productivity is in terms of output per staff year.

Productivity has long been recognized as important for a strong national economy. Large gains in productivity in agriculture and manufacturing industries have been major factors in the economic strength of the United States. As service oriented industries begin to account for an increasing share of the gross national product, there is increased recognition that productivity is important for service industries also. Most government activities fall in the area of service rather than the production of goods.

Currently governments at all levels employ one out of every six American workers. The productivity of government workers thus is an important factor in the national economy.

Improved productivity can be an important weapon against inflation. It can also be a means of helping to control the levels of government spending in a time when there is increasing pressure against tax increases and expanded government programs.

Much progress has been made in recent years in finding ways to measure the productivity of government workers. Productivity measures are now being used for

about two-thirds of the Federal civilian work force. Many State and local governments are also beginning to measure the productivity of their workers. A productivity program, however, is much more than just a measurement system. While some government organizations are doing a good job of using productivity data in the management process, there is much work to be done in the development and use of comprehensive productivity programs.

On January 29, 1976, the Joint Financial Management Improvement Program and the National Center for Productivity and Quality of Working Life conducted a conference on "How to Implement a Productivity Program." This program featured presentations by officials of four business firms which have effective productivity programs. In the belief that the experiences of those firms are highly relevant to other private and public organizations, the texts of the speeches are included as appendixes to this booklet. The four speakers and their subjects are:

- Edward L. Maier, Vice President for Operations, Xerox Education Group - "Productivity at Xerox." (Appendix A)
- Norman D. Edmonds, Director of Corporate Management Services, Travelers Insurance Company - "Productivity Improvement--The Travelers." (Appendix B)
- A. J. Benes, General Auditor, The Detroit Edison Company - "Productivity Measurements - Today's Challenge to Management for Tomorrow's Survival." (Appendix C)
- Paul Elsen, Director of Human Resources, Honeywell Inc. - "So You Want To Do Something About Productivity...?...How TO Get A Program Going In Your Organization." (Appendix D)

These appendixes are not the usual dry, statistical analyses often found in appendixes. They are lively descriptions of action programs which achieved significant gains in productivity. Even the titles of the people leading the programs for these companies call attention to the fact that there is no one "correct" way to organize a productivity program. There is considerable diversity in the approaches used by the different companies just as there is diversity in the approaches used by the

various government, and other organizations whose programs have been reported previously as case studies in JFMIP productivity reports.

There are, however, certain common threads running through these successful programs. Some of the ingredients for a successful productivity program are: strong central leadership; meaningful involvement by top management; operational management, workers and unions; sound organizational and administrative arrangements; a measurement system, including provision for data collection and reporting; analytical capability; and motivation.

These and other factors will be discussed in the succeeding chapters.

CHAPTER 2

ORGANIZATION AND CONTENT OF PROGRAM

RESPONSIBILITY

The first step in developing a productivity program should be the establishment of a central focal point for leadership of the productivity effort. The central point should be near the top of the organization and the director of the productivity unit should have direct access to the head of the organization. This unit normally would not have line responsibility over the operating components of the organization.

The productivity unit should have overall responsibility for development and direction of the program. It should operate as a catalytic agent and a source of expertise for advising operating units.

The top manager should use this productivity unit as a staff resource, not as a substitute for personal involvement. There is no substitute for active leadership from the head of the agency. It should be made clear to all managers in the organization that productivity is a line management responsibility and that staff resources are available to assist in carrying out that line responsibility.

The size of the productivity unit will vary with the size of the overall organization. It need not be a large group. It should, however, have the skills necessary to provide technical advice on measurement and data collection systems, analysis of productivity trends, and identification of opportunities for productivity improvement. The personnel in this unit should be of a sufficiently high level that they can gain the respect of and work effectively with managers at various levels throughout the organization.

In a large agency it may be appropriate to designate full-time productivity representatives in some of the larger component organizations. In other cases, liaison with the productivity unit may be a part-time responsibility. In all cases the operating managers should be involved. A productivity council or committee consisting of representatives from all parts of the organization may be useful.

EMPLOYEE INVOLVEMENT

The best way to motivate workers to improve their productivity is to make it clear to them that they have an opportunity to participate in the development and operation of productivity systems. Where employees are represented by unions, the unions should also have a meaningful voice in this process, starting at the planning stage. Labor-management productivity committees can be an effective way of bringing about this involvement.¹

Employees will be less inclined to be suspicious of the implications of a productivity improvement program if they are involved in its development and implementation. Furthermore, the basic knowledge of their jobs which employees have can be useful to managers in considering ways to improve productivity.

Employees often can be motivated to improve their productivity if there is an opportunity for them to share in the benefits of increased productivity. This is often more difficult in Government than in the private section, but it is important that managers use their ingenuity, within existing systems, to reward those who improve productivity. Individual and group awards, within grade merit increases, special commendations and consideration of productivity in promotions are among the methods available to most Government managers.

¹
The National Center for Productivity and Quality of Working life has issued a number of publications on labor-management committees, e.g., Labor-Management Productivity Committees in American Industry, 1975.

MEASUREMENT

A system for measuring productivity, collecting the data in an orderly fashion, and reporting it to management is an obvious part of a productivity program. This will be dealt with in greater depth in a separate chapter.

ANALYSIS

As indicated earlier, the central productivity unit should have an analytical capability. The primary analysis of the data, however, should take place at the operating level. Line operating managers should receive the reports necessary for them to make their own analysis of productivity data. In many cases, they can take necessary corrective action without waiting for further review. In some cases, the operating manager may require the assistance of specialists such as industrial engineers or program analysts.

The process of analysis can help to identify opportunities for improvement. In some cases operating officials can identify needed improvements. It often is useful, however, to have a separate industrial engineering or management analysis group which can bring some additional perspectives and help the operating managers in their task.

It should be recognized that there are limitations to productivity measurement systems. The analysis function should not be limited to the analysis of measurement data. There is need for systematic use of other techniques such as special operational analyses, personnel management evaluation programs, operational or performance audits, and other forms of program evaluation. Such techniques can be useful, not only in assessing progress, but in identifying opportunities for improvement.

PLANNING AND EXECUTION

A very thorough planning process is needed whether an organization is developing an overall productivity program or developing plans for specific improvements.

The basic policies should be clearly established and documented. This should help all people in the organization understand why the program is being undertaken and the guidelines that will apply. Priorities and time schedules should be established.

Productivity goals should be established jointly by managers and employees for each operating unit within the agency. Where there are employee unions they should also be involved. There should be timely reporting of the productivity results and the operating managers should be held accountable for achieving their productivity goals. Managers should also be rewarded for exceeding their goals.

Front-end analysis is crucial before a specific improvement project is undertaken. This can help identify the primary targets for improvement and other areas with potential benefits which should be considered as the project progresses. It can also provide a basis for estimating the resources needed to do the job. It is important that adequate staff and other resources be provided.

The need for training should be assessed and provision made for the necessary training. Different types of training may be needed for managers, technical staff directly involved in productivity improvement projects or analysis, and the general work force. Unions can be helpful in training programs.

In some cases, improvements in productivity can be achieved by relatively minor modifications of operating procedures. In other cases more substantial changes may be necessary. If a significant investment of capital or other funds is required, there normally is a requirement for review by a higher management level.

It is important that there be a mechanism for prompt consideration of proposals for productivity improvement. If the process is too long or cumbersome many people will not bother to suggest improvements.

It is important, however, that there be firm standards for justification for proposed improvements. In the case of major changes, there should be an economic analysis showing the costs and benefits of the proposed change. Standard rules for performance of such analyses should be established to the maximum extent feasible. The process and time schedule for review should be firmly established. Persons making productivity improvement proposals should have access to expertise of the productivity unit and other staff resources.

It is equally important that approved productivity improvement projects be initiated and carried out promptly so that the benefits can be realized as soon as possible. In some cases the projects will be administered by the line operating organizations. In other cases there may be need for involvement of other groups. In any event, the installation of new procedures or facilities must be coordinated with operational requirements so that disruption of current operations may be minimized.

Improvement projects should be audited to determine whether the expected benefits are achieved. The entire productivity system should be subject to audit by the various responsible groups, e.g., GAO audits and CSC personnel management evaluations as well as internal controls.

FINANCING OF CAPITAL IMPROVEMENTS

One of the deterrents to productivity-enhancing capital investments in Government has been the difficulty of obtaining funds for the necessary investment. The long budget process and the requirement for line-item approval of individual items have often been cited as problems.

The General Services Administration conducted a study on methods of enhancing productivity through improved acquisition and management of capital equipment. The major findings in the study report issued in 1975 were:

- Few agencies have developed systematic programs designed to identify, evaluate, fund, and control available productivity-enhancing capital investment opportunities.
- Few agencies take full advantage of existing financial authority in funding low-cost investment projects.
- For larger projects (over \$250,000) a lack of financial flexibility within the existing Federal Budget process has limited efforts to achieve long-term capital efficiencies.

One of the most effective devices has been the use of omnibus funds. The budget might include a specified amount to be used for productivity improvements meeting specified criteria in terms of programmatic urgency, payout period, etc. The justification could cite past experience with use of such funds and give examples of the types of projects which might be required in the budget year. There should be clear responsibility for audit of the use of such funds and reporting on such use.

The knowledge that an omnibus fund is available can help stimulate efforts to identify good investment opportunities.

INTEGRATION WITH OVERALL MANAGEMENT SYSTEMS

A productivity program should be viewed not as an independent operation, but as an integral part of the overall management process. A close link with the personnel management program is essential. The development of productivity data collection and reporting systems must take into account the financial and other reporting systems already in operation. A productivity program could be a part of an overall program evaluation effort. Performance should be evaluated in terms of effectiveness and quality of the product or service delivered as well as efficiency or productivity.

Interesting results are now being achieved in a series of demonstration projects on a concept called Total Performance Measurement. In this approach, measures of productivity and effectiveness are integrated

with information on employee attitudes and customer attitudes to provide a powerful diagnostic tool to aid operational managers in identifying and correcting problem areas.¹

COMMUNICATIONS

For any program to be effective, the people throughout the organization must know about it and understand it. Special publicity efforts may be necessary when a productivity program is being established. Perhaps more importantly, there must be a regular mechanism for keeping people informed on how the program is progressing in addition to the basic plans and procedures. Employee newsletters and staff meetings can be useful communications mechanisms. Perhaps one of the best approaches is publication of successful results and information about the people who make those results possible. Good communication of what is being done within an agency may help get wider application of successful results. There should also be a means for keeping informed of productivity developments and operating improvements in other organizations.

Employee unions can be a vital link in the communications process. It is essential that union leaders have opportunity to participate in productivity planning and be fully informed of proposed management actions. Furthermore, the union organization is a logical vehicle for reaching the rank and file workers with information about productivity programs.

QUALITY OF WORKING LIFE

The National Center for Productivity and Quality of Working Life has recognized that one of its main responsibilities is to clarify the various meanings, objectives, applications, and results of the concept of quality of working life. The Work in America Institute also has a number of activities underway in this field. As further progress is made in this area,

1

Further information on Total Performance Measurement may be found in the JFMIP report, Productivity Programs in the Federal Government, Volume I and Volume II, dated July 1976.

it is hoped that there will be a better understanding of the relationship of quality of working life to productivity.

The drive for improved productivity should not be so strong that it ignores working conditions and the well-being of employees. Cooperation of labor and management leaders should lead to actions which lead to improved productivity and improved quality of working life.

ADAPTABILITY

No matter how good a program is, it needs to be subjected to continuing evaluation. Circumstances may change. There may be technological improvements or regulatory changes. If existing methods are not working well there should be a willingness to change, whether this involves change in the measurement systems or the way the productivity data is used in the management process.

CAUTIONS

There are several precautions which should be observed in organizing and carrying out a productivity program. Some of these are:

1. Be realistic in expectations.
2. Don't be deterred by temporary setbacks if progress toward ultimate goals is being achieved.
3. Keep the program as simple as possible. Don't be abstract or technical.
4. Productivity improvement involves some risk.
5. A productivity program is not a "cure-all."
6. Don't overlook quality and effectiveness.
7. Avoid a program which employees may perceive as being threatening.
8. Remember the importance of feedback.
9. Be aware of the limitations of measurement systems.
10. Don't underestimate the resources required.

CHAPTER 3

MEASUREMENT SYSTEMS

Many organizations which are just beginning a productivity program will find that their measurement needs can be met through use of a fairly simple productivity measurement system. In most such systems the ratio of output to input (usually staff years or staff hours) for a current time period would be compared to a specified base period. Some organizations, however, may wish to establish a more comprehensive work measurement system which defines and measures the detailed processes of an organization and compares current performance against standards. The standards used in such a system would take into account the past experience but might also reflect the results of engineering or other detailed analysis of what performance should be.

STEPS IN DEVELOPING A MEASUREMENT SYSTEM

There are certain basic steps which should be undertaken by any organization seeking to institute a productivity program.

1. Analyze and document the mission, objectives and activities of the organization.

Even if the organization has well-established written procedures, there should be a comprehensive and fresh look at the entire mission and operation of the organization. A good technique for doing this is the preparation of a series of flow charts covering all aspects of the operation. This should be a participative process involving people at all levels of the organization--not only the managers, but also the workers who are involved in the delivery of services. The resulting flow charts or other descriptive documents should reflect how the various programs of the organization really operate, not necessarily how they are described in existing manuals or how they are

perceived by the headquarters office only. This analytical process may lead to some changes in methods and procedures.¹

2. Determine what ought to be measured.

To do this it is necessary first to determine what are the most significant aspects of the process for each organizational component. Then the points where management control is being exercised or should be exercised can be identified.

3. Define the output measures.

The output measures used should be those which will indicate, with reasonable accuracy, the information which managers at various levels need to evaluate the progress being made toward achievement of the organization's objective. The output measures should be related to the management control points. If the organization has only one major mission perhaps one output measure can be used for all employees of the organization. In most cases, however, some breakdown of outputs will be necessary. If measurable outputs cannot be defined for all phases of the operation, the system should start with those outputs which can be defined.

The following tests may be helpful in defining output:

--Mutually exclusive - Can the input required to produce the output item be readily identified?

--Process definable - Are the same steps required to complete the operation each time?

--Countable - Can the number of units produced or services provided be quantified?

¹ This approach was used successfully in cooperative projects for development of improved financial management programs in the Farmers Home Administration, the Department of Agriculture, and the Bureau of Alcohol, Tobacco, and Firearms, Department of the Treasury.

- Uniform over time - Will the nature of the product or service remain relatively stable over a reasonable period of time?
- Mission oriented - Does the product or service represent all or a significant part of the mission of the activity being measured?
- Quality definable - Is quality of the product relatively stable, or at least definable? Quality becomes a problem only when it changes, but definition is needed in order to determine if change has occurred. If changes have occurred, these can usually be factored in to adjust the productivity equation.
- Data readily available - To what extent is data available from existing systems?
- Directness of measure - Are the measures direct or, if proxy (indirect) measures are necessary, is there a rational relationship between the output and the measure?

4. Identify measures of effectiveness and quality.

While the major thrust of this document is productivity or efficiency, the process of developing a productivity measurement system provides an appropriate opportunity to consider measures of effectiveness and quality also. These measures are generally more complex and difficult to develop, but should not be ignored. The previously mentioned Total Performance Measurement concept can be useful in many cases.

5. Determine the input measure to be used.

As indicated earlier the simplest and most commonly used input measure is labor, generally expressed in terms of staff years or staff hours. This is generally a quite satisfactory method for organizations where salaries and wages, along with related benefits, constitute the major part of the cost of doing business. An option is to use total operating cost as the input measure. A special analysis of the historical relationship between labor input and total costs may be helpful

in making a decision as to the most appropriate input measure.

6. Establish data collection system.

Existing cost accounting and management information systems should be studied to determine whether they can provide the required data. This also provides an appropriate occasion for judging whether all of the data generated by the existing systems is really needed. Wherever possible existing data collection systems should be used with such modifications as necessary, in preference to developing an entirely new system. The data collection system used should be one which provides the required information on a timely basis with reasonable accuracy and in as simple a form as possible.

CONSTRUCTING A PRODUCTIVITY INDEX

Once the outputs and inputs are properly identified and defined, productivity indexes can be computed. For an organization producing a single uniform product or performing some single uniform service, the productivity index simply measures the change over time of the ratio of units produced to total direct and indirect staff years expended to produce the output. The following tables illustrate the procedure used to construct a productivity index when a single output is produced.

EXHIBIT 1

BASIC DATA

<u>Year</u>	<u>Output Quantity Produced</u>	<u>Direct and Indirect Staff Years Expended</u>
1	4	10
2	6	12
3	8	14

The basic output and input data are indexed and then divided to obtain a productivity index.

EXHIBIT 2

OUTPUT, INPUT, AND PRODUCTIVITY INDEXES

<u>Year</u>	<u>Output</u>	-	<u>Input</u>	=	<u>Productivity</u>
1	100		100		100
2	150		120		125
3	200		140		143

An index shows how a number has increased or decreased with respect to a comparable number in the base (or reference) period. Thus, the output index in year 2 is constructed by dividing 6 (year 2) by 4 (year 1) and multiplying by 100 to convert the quotient to an index number. The input index is constructed in the same manner (i.e., 12 divided by 10 x 100 = 125).

Since most organizations produce more than one output, the various outputs must be combined in some meaningful fashion. For labor productivity indexes this is accomplished through the use of base year, labor weights. The quantity of each product produced each year is weighted (i.e., multiplied) by the labor required to produce one unit of output in the base year. Thus, those products which required more unit labor time to produce in the base year will have more importance (or a greater weight) in the composite output measure.¹

PROBLEM AREAS

Wherever possible, the output measures selected for an organization should reflect the final product or services, that is, the outputs that are consumed outside of the organization. The staff years or other input associated with intermediate outputs, that is, those produced and then consumed by the organization

¹ More detailed information on constructing productivity indexes may be found in the JFMIP report, Productivity Programs in the Federal Government, dated July 1976, in Volume I, Appendix F, or by consulting the staff of the Bureau of Labor Statistics.

itself, should be allocated to the final output. This is particularly important for productivity measures which are to be aggregated with measures from other organizations to form composite productivity indexes.

For its own internal management purposes, an organization may wish to accumulate information on the various steps leading to the final output product. A heavy emphasis on final output, however, can be a very useful management mechanism for assuring that the detailed activities of an organization contribute to the end product.

Productivity trends are intended to reflect the changes in efficiency in producing specified products or services, assuming no change in the quality of those products or services. Definitions of changes in quality of output are somewhat ambiguous. For purposes of labor productivity measurement, changes in output quality refer to changes in the characteristics of the output which reflect an altered production process with different base period labor requirements for producing the output. Where such changes are significant, the output measures should be adjusted.

Another problem encountered in measuring productivity is that of quantifying outputs in sufficient detail to adjust for shifts in mix of the output. If the output units represented by one output indicator are not homogeneous and if over a period of time the proportion changes between those units that are more labor intensive and those that are less labor intensive, the resulting output per staff year measure will reflect this change as well as true productivity changes. Where there are separate outputs which are known to have widely varying labor requirements, usually it is necessary to divide the output into two or more line items.

Measurement problems are also encountered where there are outputs which take many months or, in some cases, years to complete. Recording the outputs only in the year they are completed in such circumstances could produce inaccurate and erratic indexes. For example, if five years are required to build a ship it would be improper to report the production of one ship

in the fifth year and zero production in the first through fourth year. In order to obtain a meaningful measure, organizations must either estimate what proportions of these long-term outputs were produced in each year or break the outputs down into component parts, each of which is completed in a relatively short time.

Questions are frequently raised about the degree of detail that is needed and the degree of precision or accuracy in the measure. A general rule is to begin with rather broad or gross measures. Then, after some experience is available, the measures can be subdivided if it seems necessary or desirable to provide needed management information. The degree of accuracy of precision required will depend largely on the use made of the data. A high degree of precision is not necessary for analysis of long-term trends. On the other hand, if a measurement system is being used to compare the performance of subunits within an organization, measures should be precise enough to avoid actual or perceived inequities among the units.

If an organization has had little experience with measurement systems and if there is some apprehension about the usefulness of such systems, it may be well to start out on a small scale. Perhaps one subunit or one function could be selected for a pilot operation. This provides an opportunity for debugging a system and for identifying changes which can be made prior to instituting the system throughout the organization.

Wherever possible the measures of output should be direct measures. In the case of some service activities, however, this may be rather difficult. In some cases it may be necessary to use proxy or indirect measures such as the number of people served.

Productivity measures are usually used to measure the productivity of an organization or a function. In some cases, however, they may be used to measure the specific performance of individuals. It is important to define at the outset which approach is being used. It is important, also, that employees clearly understand which approach is being used.

Some productivity measurement and work measurement systems have evolved over the years into exceedingly complex systems. In some large organizations where highly technical staffs are available there may be a tendency to be overly critical of the measurement system and to continually make refinements and "improvements." There is a danger in such cases that perfection of the system may be viewed as an end rather than a means to an end. There is a danger also that managers and workers may have difficulty fully understanding the complex system and thus will not be motivated to use it.

CHAPTER 4

MANAGEMENT USE OF PRODUCTIVITY DATA

Some organizations, both public and private, have made significant progress in demonstrating how productivity measurement can be used in both the operational management process and the budget process. The study of several successful programs has been helpful in identifying some of the ways that productivity data can be used in the management process. Among the management areas where productivity measures are useful are the following:

1. Setting goals.
2. Estimating resource requirements.
3. Budget justifications.
4. Cost reduction.
5. Organizational improvements.
6. Control of operations.
7. Reallocation of resources.
8. Accountability.
9. Motivation for improvement.

SETTING GOALS

Whether they use formal management-by-objective programs or other means, most organizations are accustomed to establishing goals for their current and future operations. Too often, however, these goals are general in nature and difficult to assess in terms of accomplishment. A productivity measurement system can be a means of making the goals more specific and meaningful. It should be recognized, of course, that not all goals are readily quantifiable.

Productivity goals should be set for the overall organization and also for component units. To be meaningful, productivity goals should be specific to the organization. They should be based on the specific potential for productivity improvement in that organization during the specified time period and take into account the plans for capital improvements or other changes. One should be cautious about establishing identical percentage targets applicable uniformly of a number of different organizations and programs. Often the variances in organizational goals and circumstances make this unrealistic.

The potential for improvement in any particular organization depends in varying degrees on the importance of untapped past opportunities as well as on new opportunities that may arise either from within the organization or externally.

The availability of productivity data, no matter how refined, cannot reduce the setting of productivity goals to an automatic process but it may help to make that process simpler and more effective. When the productivity data is generally accepted by an organization or individual, then a frame of reference is established concerning the efficiency of the organization.

With the development of a productivity measurement system and productivity goals, the next step is to integrate the measures and goals into the budget process.

ESTIMATING RESOURCE REQUIREMENTS

Operating managers at all levels are constantly seeking better ways to define the resource requirements for their program. First, of course, it is necessary to establish basic program plans and assumptions. Then comes the more difficult task of pricing out the program.

Analysis of past productivity trends provides a helpful starting point. If workload is projected to be at about the past year's level the main problem may be to identify the extent to which operating improvements may make possible productivity gains and, thus, lower work force requirements. Whether this also leads to lower total costs and lower unit costs will depend upon such factors as salary levels and other price changes. If workloads vary substantially either up or down, there may be significant variations in unit costs and output per staff year. In such cases the computation of the estimates requires analysis of such factors as economies of scale and the effect of shutting down some plants or starting up new ones with an attendant learning curve. In any event, the availability of good productivity data can minimize the situations where reliance must be placed on general judgment.

BUDGET JUSTIFICATIONS

For many years there has been a requirement that Federal agencies submit productivity data in support of the annual budget estimates. For a number of reasons, compliance with this requirement has been rather spotty. Some agencies have simply not had the basic data required. In other cases there has been a reluctance to use it in the budget because of concern that it might be misused in the budget review process.

To the maximum extent practicable, productivity goals should be incorporated in the budget process. Budget justification should include information on past productivity trends and set forth clearly the various factors expected to affect the level of productivity during the coming year. Presentation of meaningful productivity data and clear statements of assumptions on which goals are based can lessen the possibility that the productivity improvement goals and trend information will be used in an arbitrary or uninformed manner.

Projections of resource requirements also must be based on specific assumptions about the projected output, i.e., the total volume, the proportion of the various individual outputs and explanation of factors affecting quality of the services rendered or the products produced. Assumptions on changes in prices of resources should also be clearly stated.

Where capital projects are expected to increase productivity, the justifications can be strengthened by inclusion of information on the expected productivity gains to be achieved by the proposed equipment or facilities. The submitting agency, of course, must be prepared later to show the extent to which the projected savings were achieved. The existence of a system for measuring productivity changes can lend credibility to proposals.

COST REDUCTIONS

The greatest immediate value of productivity measurement is its potential for contributing to improvements in productivity and hence savings of manpower and money. Productivity data may be helpful

in at least two ways. First, it provides a history of what actually happened to productivity under a variety of conditions. This information may be drawn upon in formulating plans for increasing efficiency in the future. Second, measures of productivity may be used as a follow-up device to determine how well the goals for productivity improvements are actually being achieved.

Analysis of productivity data can make possible more informed judgments about the effects on productivity of various actions or events such as introduction of a new type of equipment, centralization of operations, changes in legislation or changes in systems or procedures.

ORGANIZATIONAL IMPROVEMENT

The benefits of increases in productivity can readily be seen. However, careful analysis of declining trends is also important. A downward productivity trend can alert the manager to a need for careful review of the organization and operating methods. A productivity measurement system can be useful in evaluating the extent to which improvement efforts really pay off in actual improvements.

CONTROL OF OPERATIONS

A functioning management system containing one or several measures of productivity will provide periodic reporting on the efficiency of the organization and will bring to the attention of management any departures from the planned goals, or from the pattern of change in comparable organizations.

Productivity measures for large organizations may not be designed to reflect all of the details necessary to monitor day-to-day operation. In some cases productivity systems should be supplemented by more detailed work measurement systems dealing with intermediate outputs for smaller organizational units.

One type of analysis that often is useful is a comparison of productivity using direct labor, indirect labor, and total labor resources. This tends to focus management's attention on the contribution of each

segment of the resources used in producing an output. Analysis of the indirect labor area may show unexpected increases. This could suggest need for study of overhead staffs.

Combination of productivity measures and financial data can indicate the actual cost of products and services produced and changes in the unit costs. Some systems permit analysis of changes for the various major components of input and output.

REALLOCATION OF RESOURCES

The need for reallocating resources occurs at various times during the budget review process. A system of productivity measurement and unit cost analysis can enable managers to assess the impact of different funding levels and to respond on a timely basis to questions or challenges to the estimates.

After funds have been received and operations are being conducted there are frequent occasions for reallocation of resources in many large organizations. Often there may be unforeseen changes in workload or costs for some parts of a program. The availability of a productivity system will help the manager in determining whether it is possible to make reductions in some activities to offset workload increases in others. If there just is not enough total money to meet all the needs, an analysis of productivity can help determine which activities are most deserving of priority consideration.

ACCOUNTABILITY

A productivity measurement system fosters accountability on the part of managers. Productivity measures the rate of change in efficiency. It measures the change in the relationship of products or services produced to resources used. It gives visibility in terms of specific numbers as to the change in the efficiency of program operations and makes managers accountable for performance. It forces managers to explain poor performance and provides a vehicle for documenting good performance.

A productivity system can also help counteract allegations about inefficiencies in Government operations by providing factual data to Congress and the public.

To maintain its credibility, of course, a productivity system must be able to stand the tests of the audit process. This can also be a means of identifying needed changes in the system.

MOTIVATION FOR IMPROVEMENT

If productivity is to be improved, it is necessary that there be motivation for both managers and workers. A productivity measurement system provides documentation of the results of efforts of managers and workers to improve operations and productivity, thus, becoming a basis for recognition of good performance. Both the prospects for favorable recognition and the knowledge that poor performance will be documented can be motivational factors.

Both managers and workers should have opportunity to share in the benefits of productivity gains. If the only result of productivity gains is a budget reduction, a manager has little incentive to seek further improvement. Incentive can be provided by permitting a portion of the gain to be used for program activities which are important but which might otherwise have had to be deferred for budget reasons. One agency which has used this approach successfully is the Internal Revenue Service.

Workers can share in productivity gains through special recognition, individual and group incentive awards, within-grade salary increases, and consideration of productivity in promotions.

A person, whatever his place in the organization, will generally be more motivated to increase productivity if he or she has a meaningful opportunity to participate in planning the work. There should be widespread participation in the establishment of productivity goals. There should be an open environment where ideas are welcome.

Some organizations have had good results with job enrichment programs, use of flexible work schedules, redesign of jobs, and other efforts to increase worker job satisfaction. In many cases there is positive evidence of improved productivity through such programs.

There have been several attempts to overcome the obstacles inherent in monetary awards for productivity improvement. One approach has been a concept called "productivity bargaining." This is a joint method of negotiating pay increases for employees based on increases in productivity. Productivity bargaining means that employees share directly in the savings realized through joint labor/management productivity efforts. Several local governments are trying this approach. In addition, the Bureau of Engraving and Printing is exploring a "Scanlon Plan" approach where Federal employees would share in productivity savings. The key to any of these approaches is that a suitable productivity measurement system must first be developed.

The setting of productivity goals within the framework of an MBO system will help motivate managers to take an interest in productivity. Once goals are established there is accountability, commitment and involvement on the part of managers. However, the MBO system must be used by top management in reviewing organizational performance if managers are to be motivated to reach their productivity goals.

Institution of a productivity program could meet with opposition, or at least lack of enthusiasm, by some middle managers. They may feel threatened by the more exacting performance reports that are part of a productivity system. In some cases this may result from feelings of inadequacy. On the other hand, it may be due to insufficient attention to communications and training during the implementation of the productivity program.

The process by which mediocre or poorly performing managers are replaced is often a long one. An organization which is installing a productivity program must give careful attention to its techniques for selecting future managers so as to assure compatibility with the

demands and nature of a continuing productivity effort. Some organizations have used special assessment techniques to measure a candidate's receptivity to exacting performance measurement as well as the ability to manage in a productivity improvement environment.

CONCLUSION

It is both possible and practicable to measure the productivity of many governmental operations. The data from productivity measurement systems can be extremely useful in the management of government programs. If the potential benefits are to be achieved a high degree of leadership and management skill must be applied to the development, operation and use of a comprehensive productivity program.

PRODUCTIVITY AT XEROX¹

Productivity in Xerox--What is it, how is it measured, how can it be improved. I will discuss a specific program, but first let me set the stage with a few general comments.

1. Productivity for us is simply output versus input.
2. We measure it in a number of ways, some of which are:

Units Produced/Employee,
Revenue/Employee,
Profit/Employee,
Investment/Employee,
Operating Cost/Employee.

Notice, however, a common denominator:

The Employee.

Now the question is, how can productivity be improved? I will discuss how we have done it in a particular function in our Education Division, namely clerical.

The potential for productivity exists almost everywhere. The trick is to identify it, implement it, and get the best out of it.

Our clerical productivity program is a small part of the overall Corporate program on productivity which includes manufacturing and distribution. My discussion, however, will cover clerical and related editorial development work.

The clerical program involves paper-handling activities for customer interfaces such as order receipt, order response, customer correspondence, invoicing, and mailing; as well as editorial functions for our published products. Our objective in establishing this program was to reduce the number of times paper is handled, thereby reducing

1

NOTE: Speech given by Mr. Edward L. Maier, Vice President for Operations, Xerox Education Group on January 29, 1976, in Washington, DC for a JFMIP Conference "How To Implement A Productivity Program."

errors, speeding up the process, limiting redundancy, and finally, providing job enrichment opportunities for the employees involved.

THE EDUCATION DIVISION

So that you might understand the magnitude of this program, let me describe the Education Division very briefly. We have approximately 3,500 employees in some 30 locations worldwide. The bulk of these employees, approximately 3,000, are in about 25 U.S. locations. This talk is aimed at the domestic operations involving these 3,000 employees. The table below shows the breakdown by category; this talk concerns two of them, namely, the clerical and the editorial groups of approximately 1,000 people.

EMPLOYMENT BY ACTIVITY PERCENT OF TOTAL PAYROLL

--Editorial/Development	20%
--Sales & Marketing	20%
--Fulfillment . Clerical	15%
. Distribution	13%
--Manufacturing	13%
--Finance & Control	6%
--All Other	13%

THE PROBLEM

Our paperwork connected with receiving and servicing customer orders had been mounting in both volume and cost. Statistics concerning this activity are:

SELECTED STATISTICS

--Annual Orders	7,100,000
--Annual Labels & Invoices	63,600,000
--Annual Correspondence	8,700,000
--Individual Order Values	\$10 - \$500,000
--Average Order Value	\$25 - \$30
--Cost Per Transaction	\$ 1 - \$11

As you can see, we handle lots of paper for some pretty small orders. So we must keep our costs down.

Clerical functions performed on fulfillment include the following:

CLERICAL FUNCTIONS

--Mail opening and sorting	--Label creation
--Batching and logging	--Reject analysis
--Order analysis	--Invoicing
--Correspondence review	--Credit and collections
--Order or data entry	--Adjustments
--Correspondence preparation	--Freight calculation
	--Filing and retrieval

As our product lines became more diverse and complicated, we were finding that our clerical employees' productivity was dropping, that is, pieces of correspondence per employee, such as customer orders, customer responses, and invoices. We were experiencing rising costs, declining employee morale and a sense of frustration of the supervisors in their relationship with the employees. The latter two points became evident from a series of attitude surveys we administered throughout this division.

At the same time our costs for product development were increasing significantly. Coupled with this was the feeling that our programs were taking too long to bring to the marketplace. We saw a relation between the paper handling costs and time, and the editorial costs which we felt could be attacked by productivity improvements.

THE PROGRAM

The need for an attack on the problem became more and more obvious. Consequently, we embarked on a program to identify and resolve the problems.

We established a task force to evaluate our situation and to propose solutions. The task force consisted of line department representatives, systems people, personnel employees, and functional experts from the respective organizations. We determined that user involvement was necessary, and subsequent events indicated that this was one of the more important aspects of the entire program.

The task force, after studying a number of alternatives, decided to introduce a new approach including new processes, methods, and procedures to handle the increasing load. We made this decision for the following reasons:

1. Employee turmoil and relocation could be minimized.
2. An opportunity was provided to enrich the job of employees.
3. We saw more lucrative longer-term cost reduction opportunities.
4. The possibility for significant speedup and turnaround improvements leading to increased customer satisfaction and swifter product development became evident, and finally,
5. The proposed solution provided continuity, that is, it did not lead to major inter-
ruption of the business.

The clerical productivity program selected involved the elimination of a number of manual operations which handled customer paper from the receipt of the order to the final invoicing and shipment. These operations were changed to mechanical ones using the computer. Likewise the editorial productivity program permitted change from typing and retyping to computer text editing capturing the tests and processes on computer. We took the myriad of manual operations, computerized them on line, converting our clerical and editing people to decision makers while eliminating non-productive operations.

The solution allowed us to handle clerical activities and text editing as few times as possible while making routine jobs, such as searching and filing and retyping, obsolete.

Our program included a number of significant elements of productivity, namely,

PRODUCTIVITY ELEMENTS IN THE
RECOMMENDED ALTERNATIVE

- Application of technology
- Labor saving devices (more investment per worker)
- Upgrading the worker (training)
- Better allocation of labor
- Economies of scale

We have a good deal of seasonal activity in our business with dramatic peaks three or four times a year for periods of up to 1 month. During these peaks we had in the past hired large numbers of temporaries whom we then trained to perform routine tasks. These temporary employees caused major employee dissatisfaction and disruption, and many supervisory difficulties. In addition, these temporary employees were expensive to train. Our clerical and editorial productivity program largely eliminated this group of temporary employees. We were able to reduce temporary manpower needs through the elimination of activities such as:

- Redundant batching
- Overlapping data search and input
- Continual checking
- Cross-over mail
- Transaction rejects
- Extensive indoctrination

We aimed at eliminating the lost motion work through our computerized system, freeing the individual to make the more important decisions regarding customers and orders and eliminating the drudgery.

THE PLAN

After we had identified the problem and its symptoms, evaluated a number of alternatives, and selected a solution, we then created a plan to solve the problem. We spent a good deal of time in this planning phase and this is the area which cannot be too carefully carried out. The plan included the following:

- a. The procedures, targets, and objectives were all established.
- b. The responsibilities and authorities were delineated.
- c. A timetable was agreed to.
- d. A startup group entirely separated from the day-to-day operations but interwoven with them was created.
- e. A parallel running period was set up.

- f. Checkpoints or measurements were defined, and finally,
- g. Careful cost estimates and benefits were set down.

One of the very critical elements in the plan and its implementation is user involvement. This must be planned for and insisted on.

We established a training program for the familiarization of all participants--management, supervisors, and workers. We consider this essential because thorough knowledge by everyone--those implementing, those interfacing, and those affected by the program--would help make the transformation progress more smoothly, because people could understand the impacts only if thoroughly versed in them.

IMPLEMENTATION

After we had created the plan and completed the preliminary steps including thorough training, we began the implementation process. This process included:

- Creating and documenting the systems and procedures
- Parallel running
- Debugging and shakeout
- Live operations
- Phaseout of old process

Critical to the implementation were, in my opinion, management knowledge and understanding which included frequent status reports. Equally important is management awareness of the need for flexibility, that is, the need to change a procedure without destroying confidence in the program.

Finally, any program must include a post-auditing procedure to evaluate the program and to validate the assumptions including as a minimum:

- a. The time assumptions,
- b. Manpower needs,
- c. Costs,
- d. Desired results both from an internal standpoint as well as those from a customer service standpoint.

User involvement, mentioned earlier, was one of the most frequent sources of problems when the user either had little or no knowledge of the program or had not felt that he was involved in the action. In this program, we felt that the user had to make the following commitments:

The user must:

- a. Agree that there is a need for improvement.
- b. Support the alternatives selected or, put more forcefully, be committed to the program.
- c. Define the needs of the program.
- d. Bear ultimate responsibility for the success or failure once the needs are defined and steps for solutions are implemented, and
- e. Fund the program on a self-liquidating or cost-effective basis, if this is at all possible.

I cannot overemphasize how critical this user involvement is to the success of a program.

WHAT DID WE LEARN--THE DO'S AND THE DON'TS

Hindsight is an excellent teacher. We made many mistakes. However, we soon learned the importance of flexibility. The program is performing very well. The following are some of the things that we learned.

The Do's:

- a. Plan and evaluate carefully.

The value of very thorough upfront planning cannot be overemphasized. False starts and false leads are costly and time consuming, and they can undermine confidence in the program.

b. Clearly define targets and goals.

In this regard, define the "needs," not the "wants." Most people will create a shopping list of what they want, which includes too many extraneous functions. Look only at the needs and implement accordingly.

c. Involve the people responsible for implementation--the user.

Without full commitment on the part of the user, no program on productivity can succeed.

d. Train and familiarize.

Time spent on this activity, although it can sometimes be considered unproductive and costly, if carried out carefully, pays dividends later.

e. Measure results, both while carrying out the program and after the program has been fully implemented.

f. Feedback is important to each additional step in a project as well as for obtaining valuable experience for similar projects in the future.

g. Parallel procedures, both the old and the new, as long as is necessary. This parallel period allows bugs to be worked out while permitting people to become familiar with the program before it must stand on its own. A base case as a reference point should be established as part of this procedure.

h. Continue to look for additional benefits once the system is installed. Methods analysis can be particularly useful in this regard.

The Don'ts:

- a. Don't underestimate the resources required: Time, manpower, and costs. Once these resources are exceeded during implementation, the program is in danger of losing favor.
- b. Don't expect immediate results. Bugs take time to work out.
- c. Don't rush into a program just because you have problems. Take time thinking it through.
- d. Don't underestimate the interest and ingenuity of the people. Solicit their ideas and get their inputs throughout the program including planning, implementation and post-audit periods.
- e. Don't be satisfied with obtaining only the defined improvement. After the program is installed, continue to look for any actions that might eliminate unneeded activities which crop up after the program is installed or with which the program interfaces, i.e., another area such as manufacturing.
- f. Do not confine productivity improvements to the elimination or change of activities. Productivity should be ongoing in any operation and to associate productivity with introduction of new procedures or elimination of old procedures would be shortchanging potential benefits. Look at all existing operations to see how they might be combined, streamlined or improved. Do this on a planning ongoing basis. Make it a part of performance targets.
- g. Avoid complexity. The simpler the procedures, the better the results. Attempt to create productivity programs that build on simple basic steps which can be added or removed.

LESSONS LEARNED

We underestimated the short-term resources required, namely, time, manpower and costs, and we were too optimistic on the short-term results; that is, the immediate expectations were too high. However, on the longer term expectations we were too conservative. After we had been in the program for 6 months, we found many additional benefits which could be implemented and which added to the overall attractiveness of the program exceeding our original expectations.

The costs of the program as established by our post-audits showed a direct relation to preplanning. The better the preplanning, the more accurate the costs and resources required. In those segments of the program where we skimmed on planning, we had the most surprises.

We found early that the requirement to be flexible was essential. We found it important to be ready to try something different--a different approach, for example, to an individual problem if in the implementation snags develop.

It is essential that everyone involved in a project from top management on down be committed to the program. For any productivity program to succeed there must not be an "I told you so" attitude or a "standing on the sidelines" by any participants. Everyone must be enthusiastic and onboard and contributing. You must sell the program; not force it into use.

We had to avoid being discouraged by setbacks. A particular aspect which became a problem was isolated and our best resources applied to overcome the problem. We had to establish a firm resolution to plow ahead and circumvent the short-term problems.

Although vendors and consultants can be helpful in a productivity program which introduces new procedures and practices, there is no substitute for your own in-house expertise and knowledge. One way or the other the buck stops with the "users."

THE BENEFITS

Of course, first and foremost as a benefit was the cost reduction and savings resulting to our division from the labor savings and associated costs.

Improvements in employee morale were significant. Our new procedures provided job enrichment, and eliminated the confusion and resentments from the large temporary workforces which we previously had used. Additionally, employees were introduced to new procedures requiring them to make decisions.

Each employee became a center for decision. An employee handled all the service problems associated with a particular customer. Finally, these changes in employee attitude and morale were shown in a greatly reduced employee turnover.

Customer service and satisfaction improved dramatically. There was a speedup in handling orders and responding to customers.

As a part of our program, reduced recordkeeping was a significant benefit. The masses of files that we previously had, disappeared. The duplication of records, lost records, redundant manuscripts, and physical filing were reduced or eliminated.

Finally, the increase in productivity, that is, faster processing, faster response led to increased revenues. A disgruntled customer will not reorder. We found as we introduced this program and we handled our customers efficiently and quickly that we could expect reorders shortly thereafter. Along the same line swifter introduction of our new products through more rapid development allowed us to begin earning a return sooner on our development dollars.

PRODUCTIVITY IMPROVEMENT--THE TRAVELERS¹

We are one of the largest multiple line insurance companies in the world and are organized around lines of insurance, that is to say, we operate with departmental autonomy within our Group, Casualty, Property, and Life Departments. Each of these major functions has its own specific departmental budget. Once that budget is established at the corporate level, department heads are generally free to allocate those funds as they see fit when considering their organizational mission and objectives. This departmental autonomy carries over to our Field Office structure in that each Field Office manager reports to his respective Home Office Department regarding expenses, profitability, underwriting practices, and so forth. In a large Field Office, for example, we could have as many as six managers who would form a Management Committee to run the administrative affairs of the Field Office. Beyond that, however, there is little or no inter-relationship on a product or marketing basis. We have 32,000 employees across the United States in approximately 120 locations, with 10,000 of those employees housed in our Home Office in Hartford. Our annual premium income runs about \$4.7 billion and the company has assets of about \$11.2 billion.

Travelers has what could be called typical problems for a large highly decentralized organization. For instance, you could correctly assume that it is a very difficult organization to control from many points of view, expenses being one of them. We also have problems that are present in any organization that must take widely varying geographic consideration into its planning efforts. Communications can also be difficult particularly in the area of possible confusion between expense reduction versus profit improvement. This causes conflict in terms of desired organizational emphasis. Last, being a labor intensive business our problems are compounded by the fact that much of our output is directly related to the effective use and management of human resources.

¹ NOTE: Speech given by Mr. Norman D. Edmonds, Director of Corporate Management Services, Travelers Insurance Co. on January 29, 1976, at Washington, D.C., for a JFMIP Conference "How to Implement a Productivity Program."

CORPORATE PRODUCTIVITY PROGRAM

In this overall organization lies the Management Services Division of which I am a member. This organization has about 50 professionals. We perform as internal consultants to the corporation in the areas of expense reduction, and operations and profit enhancement. Recently, we became involved in a Corporate Program to analyze both our organization and our pattern of expense allocation. This program has two major components.

The first is a measurement component. We measure inputs as well as outputs in our measurement activity. With regard to the input measurement, we deal with work measurement and negotiated standards. We find that production goals that are set for people by someone else are not likely to be as well received as goals that they participate in setting for themselves. Consequently, when dealing with the activity or input portion of our measurement program we use very simple measurement techniques and negotiate with supervision as to whether or not the resulting performance standards represent what an average worker could do during the course of a work day or during the course of a single work cycle. This type of work measurement is then included into standards which are applied across the organization and served primarily as staffing guides.

The second part of our measurement activity deals with outputs or productivity measurement. We are attempting to identify, measure, and monitor productivity variables, which will then lead to planning and control mechanisms for the operating departments. In this effort we attempt to separate activities from outputs. For instance, in a claim operation you may find that there are many activities, such as setting up a claim file, establishing pending files, examining first notices of loss, and other such things which go into the successful settlement of claims. Those activities are measured through our work measurement program. The final output of that organization is the number of claims that are settled on a timely basis as well as the average amount of claim dollars paid. Our productivity measurement system allows us to segregate these outputs and develop what is called a Final Output Index which leads us to a cost per staff-hour for claim settlement.

The second part of our Corporate Productivity Program deals with the identification of change alternative. This part of the program also has two segments.

The first is an examination of our workflow. Essentially we are looking for ways to alter the means that are used to produce our required outputs. We examine where the work comes from, how it's handled, where it goes, how many steps are involved, and what level of personnel are involved in handling the various types of work.

Second, we look at the organization and how it has been designed to process that workflow. The organization is initially examined from the macro point leading down to the micro point of view. We also look for formal and informal organizational structures. Very often what is on the formal organization chart is disregarded by people operating in the system, because the formal organization does not complement what they perceive to be their work output requirements.

Our job is to examine what needs to be done, compare that to the organization designed to do those things, and make adjustments either to the workflow or the organization. Our objective is to process our business more effectively and efficiently.

An important part of this productivity program is that we rely heavily on management implementation. Our objective is to assist our managers and supervisors in improving our organization's effectiveness. For example, our work measurement standards are not emphasized as a means of controlling managers and supervisors as much as it is used as a tool to develop alternatives and a guide for staffing to meet desired work output levels. We also help managers assess and develop their own internal capabilities with respect to making organization and workflow changes that will result in improved output. We try to assess the work and production pressures on these people when considering their ability to implement change alternatives.

For instance, management by objectives has long been seen as an effective tool for operating managers. However, MBO is too often external to what must go on in the organization each day. My boss and I once agreed that the development of objectives for my function would be a desirable thing. We discussed it and set up time-tables for the development of objectives. Some time later he came to see me and asked if I had completed them. I replied that I hadn't. When he asked me why, I said,

"Each time I get started on them something important to do comes along." We recognized that the people that we work with are under the same kind of pressure. Therefore, one of our major functions is to make sure that our inputs are relevant, timely, and directly related to what he is trying to accomplish in his organization on a daily basis.

IMPLEMENTING A PRODUCTIVITY IMPROVEMENT PROGRAM

The first step in implementing a productivity improvement program in an organization as diversified as ours is to recognize that there are many types of productivity which apply. Financial and cash management, use of capital equipment (primarily data processing equipment), marketing productivity, procedural considerations, and human factors are all important in terms of productivity evaluation and improvement. At The Travelers many different organizations are concerned with these productivity issues. We have a Systems Division which deals with automation, programming, and EDP capital equipment expense. Our Corporate Actuarial and Control Area as well as our Investment Department deals with cash flow management productivity. Our Administration Department deals with salary administration, supply conservation, and other such administrative productivity factors. Our line departments are also active in areas related to procedures, new marketing thrusts, and monitoring and controlling our loss ratio.

The job of the Management Services Division is to complement not duplicate these productivity efforts. We must be concerned with providing synergism not competition. In order to achieve this objective it was necessary for us to develop some sort of strategy. One way to describe this strategy is to discuss how we view the difference between training versus structural intervention by internal consultants.

There is a popular notion that has been around for years implying that if productivity problems are present in an organization the obvious solution is to improve your training so that your staff can perform at a higher level. The theory is that proper training will lead to an improvement in worker attitude, resulting in a more desirable on-the-job behavior and productivity improvement will result. This premise assumes that if workers are more sure of how to do what it is they must do, then they will in fact do it better and more quickly.

Our intervention strategy is based on another principle. We feel that the common denominator is change in the structure through which work gets done. Structural change (properly implemented) will force a behavioral alteration. Once people are behaving differently a change in attitude about their work generally occurs. This in turn leads to the desired productivity improvements. We are not saying that training is irrelevant; however, training must be placed in perspective and must support structural changes.

DIAGNOSTIC TECHNIQUE

The key to determining what sort of structural changes are required in order to alter behavior, attitude, and productivity lies in effective diagnosis of the organization before any changes are suggested. I would like to take a moment to give you an overview of our diagnostic technique. Essentially it involves interviewing in a planned manner, cross sections of those people who work in the organization at all levels and with various amounts of experience. We observe the work process, examine historical records as well as the methods used to report on output. The data gathered through this approach is then examined from a number of perspectives.

First, we examine it from the point of view of organizational purpose. What is the organizational component there to achieve? Second, how well does it execute its purpose? Third, what are the developmental and human utilization considerations in the organization? Last, what environment does this organization operate in? This information is then compared to what the organization does when conditions are normal, what it does when conditions are deviant, and then what it does when conditions are extraordinary. Often we find that extraordinary conditions cause procedural changes designed to alleviate temporary problems and these procedural changes often wind up as normal behavior of the organization.

Our objective is to get management to recognize this potential problem and to place its perspectives and conditions in the proper order to maximize on its productivity capability.

We have found that our form of productivity and work measurement provides the structure we are looking for in order to begin to effect behavior change. Volume counting and control of staffing is a useful tool to get managers and workers thinking about what their productivity is. We attempt to provide feedback to them on

staffing levels and work output levels in a way that is non-threatening, constructive, and seen as possibly developing change alternatives. Once they have a better handle on the resources used to produce their output they begin to develop a new attitude which creates a readiness for change.

Over the past 7 years we have developed our procedure for productivity improvement through a series of events. In 1968 we began our work measurement effort which was aimed at improved efficiency and proper staffing levels. It was admittedly activity oriented and designed to measure what was currently being done. In 1970 we began experimentation with work design and skills development strategies, and in 1972 we began working on productivity measurement systems. This was the identification and quantification of outputs as opposed to activities. Diagnosis, activity measurement, job design, workflow analysis, and output measurement are the major components of our Productivity Improvement Program.

The corporate program, which I mentioned previously, came into being because of a need to integrate these techniques across departmental lines. The program relies heavily on communication to line management of our intent as well as methods. A key part of this program involves the selection and training of representatives from major departments to work with our internal consulting group on the implementation of the program. It is designed not to do things to organizations but with them.

In the course of implementing our Productivity Improvement Program we have observed many do's and don'ts.

Do's:

1. Internal consultants need to maintain a low profile in the organization. Too often this type of staff group is more interested in getting credit for its work than it is in seeing that the desired changes are made.
2. Determine who your client is. It's often very easy to sell your products or services at the highest level in the organization and then implement at lower levels. This very seldom works. People who are involved in productivity improvement programs need to know what's in it for them; therefore, the identification of your true client and

what you are doing to help that client is quite important.

3. As I mentioned previously, you need to determine needs early through an effective diagnosis of the organization you are working with.
4. As opposed to your deciding what an organization needs, be certain to listen to your client's expression of his problems.
5. Recognize that your productivity improvement program probably arose from a crisis of some sort or other. This crisis situation will not always exist. Consequently, you must take advantage of the crisis to sell your services on a long-term basis related more to organizational improvement than solving a crisis problem.
6. Keep people informed all through the process. There is a regrettable tendency to gather data from the rank and file workers to develop your solution alternatives on your own. After these alternatives have been formulated the rank and file workers are left out of the implementation process. If they are not kept informed as to what conclusions were drawn, they can very easily sabotage your efforts. They are the source of your ideas, they are the people through which your ideas will be implemented--they need to be kept informed.

Don'ts:

1. Try never to be abstract or theoretical in terms of explaining yourself to your client organization. Theories come and go but work is always here. Rather than try to confuse your client with a theory, take what you know and make it as practical and as related to his work as possible.
2. Never design or apply your program rigidly or unevenly across the organization. The communications between various offices are much better than internal consultants usually assume they are. Rigid or uneven

treatment will be quickly passed along to your future clients.

3. Try not to diffuse your efforts along many lines of change. In most instances there are generally only one or two major changes that can be absorbed, accepted and used by an organization.
4. Do not simply measure without providing your client with some method of using the measurement results. A measurement system without assistance in how that system should be used is a useless device.
5. With all due respect to auditors, the internal consultant is not an auditor. Your support should be based on your knowledge and skill and not the authority you have been able to accrue by edict.
6. Never be trapped into selling at one level in the organization while implementing at another. Programs that are sold to the President become just that--the President's programs. As soon as a client feels that the attention from the top is diverted, your program will be doomed to failure.

LESSONS LEARNED

What have we learned while implementing this program? First we've learned that we should focus on reporting organizational productivity more than individual productivity. Reporting on individuals can be easily construed as a speed-up, a push-out, or attempting to get two for the price of one. Organizational productivity focus is particularly important if there are union involvements where you are working. The threat of layoffs becomes lessened. Second, we have learned that the program should be adapted to individual departments and individual managers while maintaining corporate vision. It can be individualized and stylized and still relate to the achievement of objectives at the corporate level. Lastly, we have learned that strategy must always be emphasized above tactics. If you are manipulative with your client, simply to get implemented what you want implemented, you will generally find short-term success and long-term

failure to be the result. You should accept a few minor defeats as long as those defeats fit into your strategy of long-range productivity improvements. Going for the long haul is the best procedure.

BENEFITS

I would like to enumerate just a few of the benefits that we see coming out of our approach to productivity improvement. The first and most obvious benefit is expense reduction. We have hard evidence that this approach to productivity improvement can significantly reduce expense while keeping the organization intact during the process. Second, increased budget control and an awareness of the fact that control is the responsibility of the operating management. We were surprised to find that many of our managers did not feel that they could control their budget at their level. Improved response and turnaround time was another benefit which came about through job redesign, a need that was identified by work measurement. Once an employee has greater control and greater autonomy in terms of deciding just how service will be rendered, service generally improves. We also think we are moving toward a simpler, more flexible organization than we had before the program. The possibility for alteration or compression of unnecessary hierarchy is one indication of that.

A clarification of organizational purpose and processes is another result. Because of the size of our company, a knowledge of purpose and the process you are going to go through to reach that purpose is often dim in the eyes of many. Assuming that people know the significance of their role in an organization is a very dangerous mistake. We have also identified the management practices that are being used and what the management development needs of our organization are. Last, we have found that productivity improvements are not always related to expense reduction. Quite often the reallocation of expense dollars to areas of need tends to have greater influence on productivity improvement than expense reduction. We have been able to develop methods through which this reallocation of expense dollars can be achieved in a controlled manner and tracked as to its effect on productivity improvements in the organization.

In concluding, we do not feel as though we are completely where we should be in terms of productivity

improvement programs, but we are a long way from where we used to be. It is important for you to note that it has taken us from 1968 to the present to get where we are. We are not selling any sort of instant oatmeal in our company. What we are selling is a systematic, businesslike approach to analyzing what our problems are and bringing solutions to those problems--solutions that are not as much theoretical as they are related to what our organization is here to accomplish.

PRODUCTIVITY MEASUREMENTS--
TODAY'S CHALLENGE TO MANAGEMENT FOR TOMORROW'S SURVIVAL¹

Detroit Edison has 9,700 employees, down 1,600 in the last 4 years by attrition. We cover approximately 7,600 square miles, and we serve over half the people in the State of Michigan with electric power. Our plant investment approaches \$3-1/2 billion, and our yearly revenues are a little over a billion. Obviously not in the ball park when compared to the digits that you people have to place after your numbers, but it does mean that Detroit Edison is probably the sixth or seventh largest investor-owned public utility in the country. For many years we enjoyed a very fine reputation with our customers and with our local regulatory commissioners. For approximately 25 years we never asked for a rate increase, and in fact three or four rate decreases took effect during that period. It was truly a good example of the economy of scale being passed directly on through to the customer.

But did our low rates and excellent service endear us to anyone--even our customers? It appears not.

You are aware of public and community opinion of us...

Cost-plus mentality.

Fat cats with automatic profits and no risks.

We yell for help instead of getting our ship in order.

The only improvement action we take is when we're forced into it.

Only outside consultants can tell us how to properly run our utility business.

At Detroit Edison we believe the criticism harsh and unwarranted, but we recognize there was and is room for improvement. I would like to illustrate Detroit Edison's management efforts to improve individual and overall performance by implementing productivity measurements.

¹NOTE: Speech given by Mr. A. J. Benes, General Auditor, The Detroit Edison Company on January 29, 1976, at Washington, D.C., for a JFMIP Conference "How to Implement a Productivity Program."

We decided that the only consultants we could afford now were our approximately 65 department heads, who ought to know how to run their particular areas better than any one else. We developed a new sense of urgency about the supervisor's job--at all levels.

ACTION PROGRAM--PLANNING
AND PREPARATION PHASES

We designed and launched our ACTION Program ... All Committed To Improving Operations NOW.

In a meeting with 450 management officers, our President, Bill Meese, said in part:

"...let me stress one very important point that is often misunderstood...accountability. It is my intent to delegate decision making to those who have responsibility for action. As we delegate more responsibility and authority for decision making down the line, we must make certain with this delegation goes accountability...."

"Accountability will be looked upon favorably by supervisors who make things happen. It will not be welcomed by those who are accustomed to watching things happen...we will evaluate and assist supervisors to assure desired results are attained. I believe the pairing of accountability with responsibility and authority will make us more responsive to the Company's needs...."

Bill then met with each functional group to explain what he expects from their future performance, and as an integral part of our program, we planned three conference units on the Company's financial picture, customer relations, and effective supervision was designed for supervisors only. This conference highlighted the following points:

How the Effective ACTION
Supervisor Works

The effective ACTION supervisor of the 70's is one who:

1. Knows the job, boss, employees, and others he works with.
2. Makes things happen.
 - Plans for deliberate change.
 - Acts - just doesn't react.
 - Accepts improvement.
3. Helps the boss make better decisions.
 - Provides accurate information.
 - Is problem-solving oriented.
4. Builds an ACTION team.
 - Defines each job, gets undertakings and effective performance.
 - Establishes objectives, keeps score, lets individuals know how they are doing.
 - Provides recognition and correction.
 - Goes to bat for his employees.
 - Becomes a person builder.
 - Earns the respect of his team.

We considered it important that better supervision results when the supervisor is to establish objectives for himself and his group, and to keep score.

In addition, there were suggestions about better communication and taking action in unpleasant situations.

The second phase of our ACTION Program was launched in 1973. As with most companies, we had objectives through the years. However, we are making our objectives specific, measurable, and reportable, with a feedback system. Our program calls for specific corporate objectives and also each department has specific operational objectives. For example, the Production Department has objectives and feedback meetings monthly to discuss availability, heat rate, responsibility budget, and other indicators. When deviations on planned objectives occur, superintendents must identify and initiate corrective action.

The next integral part of our ACTION Program was Phase III, which covered productivity analysis. We have adopted these simple definitions for the term productivity: Getting more output from resources, or getting the same output from fewer resources.

IMPLEMENTATION

The first step in implementing our ACTION Program was to establish the functions of our Productivity Committee. The functions included:

1. Determine the potential for increased productivity in Company operations through improved methods, standards, and controls in clerical, technical, and field operations.
2. Recommend organization and staffing for support services to achieve increased productivity through improved methods, standards, and controls.
3. Evaluate services of professional consultants for advice or installation of systems for improving productivity.
4. Recommend programs which have potential for increasing productivity and decreasing costs in the Company.

The principal criterion for appointing the task force was that the entire corporation had to be represented. We also wanted a results-oriented committee, so its membership had to include people with individual accomplishment.

The auditor was chosen to be chairman of the committee. The first thing an auditor thinks of is to take an inventory. So, the first phase of our committee's plan was to take a survey (an inventory) of the corporation. Sixty-five department heads were asked to respond to our initial survey in which we asked:

--What is the present situation:

- . Formalized measurements used.
- . Jobs that are being formally measured presently.
- . Jobs that are not being measured.
- . Views on effectiveness of ongoing programs.

--Plans for extension of formalized measurement in your area of responsibility.

--Assistance desired or required:

- . Corporate staff assistance.
- . Development of expertise.

At our department reviews on the survey, the department head himself was asked to make the presentation. Thus, he had to become acquainted with and committed to some formal measurement system. He realized that measurement was an important part of his responsibility. Here are some facts we uncovered:

--50 percent of the corporation was using some form of measuring performance.

--Many stated "our jobs are different--unique--and can't be measured."

--Some said "you tell us."

--Difficulty in answering question:

"How many employees do you actually need to carry out your assigned responsibility?"

Our initial findings were reviewed with our senior management. We explained that many departments were measuring performance--that approximately 50 percent of our total work force was being measured, which was consistent with our findings elsewhere in the country. It was decided, on a corporate level, that our long-range objective would be to increase our present level of measurement from 50 percent to about 75 percent for 1974.

To assist departments in establishing productivity measurements we held a seminar in March 1974, which consisted of individual workshop sessions of selected departments where we felt meaningful measurements had been developed. Among the selected departments were Real Estate and Rights of Way, and Engineering.

A significant part of this March seminar was to invite an outside "appraisal." We asked Leon Skan, the 5th Regional Representative of the President's National Commission on Productivity and Work Quality to be our keynote speaker and give us his appraisal. We wanted to share our experience and receive a candid opinion of our results, and suggestions for future improvement.

It was gratifying to hear Leon Skan say that of all the companies he had reviewed, Detroit Edison's effort in this regard was second only to the Honeywell Corporation. When Mr. Skan realized that we had printed his remarks in our Company newspaper, he called to apologize for placing us second, adding that he could have said first. Of course we are pleased with second--it makes us want to try harder.

As you know, inspection is vital to the success of any program. In October 1974 we held another progress review with all our department heads, reminding them of the importance of this corporate objective. We asked for a current inventory of what measures were being used--we wanted to identify particularly changes made since the last formal report in March 1973, and we wanted to identify unsuccessful attempts to measure certain jobs.

RESULTS

Now let's take a look at some of our results. Any recognition for our accomplishments must go to our total management effort.

In the construction area, particularly underground lines, there was a perennial claim that each job was different and therefore could not be measured. Now we have identified approximately 1,500 specific work units. Each job will be estimated in work units, including time and material as standard time measurements. Work units will give great flexibility to management in measuring all facets of general construction and underground lines work.

A most important side benefit of the serious work done in this area was the development of a computer software package which has potential applications elsewhere in the corporation.

A most creative measurement system was developed for the Real Estate and Rights of Way Department. Essentially, the Real Estate and Rights of Way Department stratified the types of work they do in degrees of complexity. For instance, a street light permit has a base complexity factor of 1 compared to obtaining property for a substation with complexity of 75. These complexity factors were developed jointly and agreed to by all affected employees. This cooperative system permits the department to get a handle on total workload thus enabling supervisors to better allocate manpower. Another benefit of

this system is that work performance comparisons can be done between employees. Employee comparisons, incidentally, are the guts of any meaningful measurement system.

The illustration here is that the top man in the department had 11 points per working day; the low man in the department had 3.75 points per working day. The low performer claimed his low performance resulted from driving 16,844 miles during the period. The high performer actually drove 40 miles more. In reviewing the statistics with the low performer, department management was able to determine that the man's work habits were poor. Corrective action was taken.

It was gratifying to note the significant movement some departments made in developing standards. For instance, the Meter Department at the first review in 1973 reported measuring 43 percent of its total manpower. In our October review, the department reported that 83 percent of the manpower was being measured. Equally important is the positive attitude of the department management toward our productivity work.

For instance, the Meter Department says that by more effective procedures timekeeping costs have been reduced by \$7,500. They are experiencing difficulty with some supervisors in accepting the new system, but we have found training must not be overlooked in implementing this type program. It is indeed encouraging that the union has not objected to the new system.

Another example is in the Insurance Department. In 1965 the department had 16 employees, and using an index of 100, it was able to issue 1,690 checks per employee per year. The insurance Department now has 20 employees. However, it is issuing 3,470 checks per employee per year with far more complex insurance claims.

The Director of Accounts Payable Department reported significant advantages to the overall productivity program. Results of his program to date shows that the program:

- Has led to specific management objectives.
- Has pointed out training needs, bottlenecks, improved procedures, and increased accountability.

- Has maximized scheduling.
- Has reduced errors.
- Has increased throughput.
- Has leveled and equalized workload.
- Is used as part of individual job performance review and salary administration.

It is counterproductive to pressure our employees to improve productivity and allow contractors to waste our investors' money by inefficiency and mismanagement. Thus, through our project management organization, we are asking our contractors to prove to us that they will prudently manage the millions of dollars entrusted to them.

We fully intend that complete monitoring controls be implemented and maintained over all construction dollars.

SUMMARY

To summarize the overall results of our efforts, we have progressed from approximately 50 percent of our employees being measured by a work unit measurement system to 90 percent today. Our measurements cover all classifications of employees.

Decisive management action has reduced total employees by more than 1,600 and this reduction was accomplished through attrition. Also, our labor cost declined.

Our overall purpose again is to:

- Improve overall performance.
- Accomplish this through use of internal management team (no outside consultants).
- Cover all facets of corporation.

We are convinced that our management team is now better equipped to manage the vital resource of labor. We will continue to seek ways to improve individual and overall management performance. Planned improvement through productivity measurement will be a way of life at

Detroit Edison. As internal auditor, I am especially pleased to have played a role in implementing this program at Detroit Edison. It is not an unusual subject matter for the internal auditor to become involved in, but rather falls under our basic charge of protecting the Company assets from loss of any kind.

SO YOU WANT TO DO SOMETHING ABOUT PRODUCTIVITY ...???
 ...HOW TO GET A PROGRAM GOING IN YOUR ORGANIZATION¹

"Productivity Improvement"--Everybody says we ought to have it--but, how do we get it? Where do we start?

As a result of efforts begun several years ago and the conscious and continuing top management commitment to do something about productivity, Honeywell has developed an organized, total company productivity improvement effort that contains what we believe to be the key elements of a successful Productivity Improvement Program.

Here's what it takes to get a complete program going:

1. - TOP MANAGEMENT SUPPORT

A company productivity improvement program starts with commitment from the senior executives. These people must be dedicated to the premise that a viable, visible, disciplined, and organized approach to productivity improvement throughout the organization is desirable and necessary for attaining the key operating goals, such as profit, return on assets, service level or growth. Further, top management must recognize and communicate the importance that the effective development and use of human resources plays in improving productivity. As Honeywell President Edson Spencer puts it, "...Increasing productive use of the Company's resources and particularly its human resources in a prime motive governing management actions."

Top management support--without it a company program at best can be no more than a collection of partial programs oftentimes counter-productive to each other.

2. - PRODUCTIVITY STEERING COMMITTEE

Establishing a Productivity Steering Committee is recommended. This is the behind-the-scenes policy body--the overall guiding force for the program. Key line and

¹NOTE: Speech given by Mr. Paul Elsen, Director of Human Resources, Honeywell Inc. on January 29, 1976, at Washington, D.C. for a JFMIP conference "How to Implement a Productivity Program." Original paper written by John McClure, Manager, Productivity Improvement Programs, Honeywell Inc.

staff executives serve on the Committee and advise top management on productivity matters and at the same time ensure that the company position on productivity gets transmitted on down through the organization. The Steering Committee can examine any area of productivity including human resources, technology, capital, or systems at any level. The Committee can direct the implementation of changes or revisions to the company program.

The primary role of the Productivity Steering Committee is twofold:

- (1) It serves as a forum for exchanging ideas and getting programs going.
- (2) It monitors company policy to ensure that changes create positive productivity in the long run.

3. - PRODUCTIVITY COORDINATORS

Primary responsibility for productivity improvement rests with top line executives and the leaders of key staff organizations. Line executives are responsible for ensuring that an organized and disciplined program supported by goals, objectives, and measures is in effect in their respective units.

The effectiveness of a company program can be greatly enhanced by using productivity coordinators throughout the organization.

At the Corporate level, we have found it useful to assign a staff specialist to give full attention to the productivity improvement program. This person, called the Corporate Productivity Administrator, reports to a member of the top management team. The Productivity Administrator communicates with Division Managers on productivity questions, conducts meetings and seminars on the subject, prepares and disseminates productivity improvement materials and ideas, establishes and coordinates the work of Division productivity councils and prepares studies of productivity trends throughout industry and in the company.

The Productivity Administrator acts as a consultant, instructor, auditor and researcher. This person works with Division General Managers and their plans and progress in improving productivity. Regularly, he or she works with a wide variety of middle managers on specific techniques which are or might be used to boost productivity.

At the Division or Department level, Productivity Coordinators should be appointed to serve as the productivity program focal point locally. Typically, the appointment should be based on the such criteria as:

1. Awareness and interest in productivity concepts.
2. Willingness to work hard.
3. Communications skills.
4. Being able to work with different levels of people across all functions.

No particular background is preferred. In fact, Divisional coordinators throughout Honeywell range from key staff people to managers and directors and come from finance, personnel, manufacturing, marketing, quality, production control, industrial engineering, and legal.

In short, the Divisional Productivity Coordinator performs a function similar to that of the Corporate Productivity Administrator only at the divisional level.

The efforts of the productivity coordinators are tied together via a company Productivity Council. The Productivity Council includes coordinators/representatives from each of the operating divisions, components, and key staff groups and is chaired by the Corporate Productivity Administrator. The Productivity Council concerns itself with:

1. Productivity improvement ideas.
2. Exchange of best practices.
3. Specific goals, plans, programs, results and problems.
4. The Corporate position on productivity.
5. The efforts of divisions, and components to assure consistency of effort.

The Corporate Productivity Steering Committee serves as the advisory and approval body for the activities of the Productivity Council.

4. - MEANINGFUL AND REALISTIC DEFINITIONS OF PRODUCTIVITY

The term PRODUCTIVITY is a fairly straightforward concept. Briefly stated, productivity is a comparison between the quantity of goods and services produced and the quantity of resources used to produce those goods or services. In other words, $\frac{\text{OUTPUT}}{\text{INPUT}}$.

How you define productivity locally depends on what inputs and outputs you are working with. For example, the definition of people productivity for the company as a whole might be

$$\frac{\text{SALES}}{\text{EMPLOYEE}} \quad \text{or} \quad \frac{\text{SALES}}{\text{PAY}}$$

but in the accounting department a more meaningful measure might be

$$\frac{\text{ACCOUNTS HANDLED}}{\text{CREDIT EMPLOYEE}}$$

In summary, productivity definitions (measures) must be developed in all areas and at all levels and they must reflect local productivity concerns. Productivity improvement developed in all subareas of the company theoretically will add up to greater overall company productivity improvement.

One final note--key goals of profit, growth, service level or return on assets should out-weigh productivity goals. Productivity improvement can provide a significant impact relative to attaining these operating goals.

5. - TOP DOWN PROGRAM OF STIMULATION AND AWARENESS

A total company productivity program should have the backing and enthusiastic support of all managers and supervisors starting at the top. There must be a genuine willingness to challenge traditions and what the internal culture of the organization has defined as acceptable behavior.

If people do not feel that all levels of management are behind the program, then they will not be committed. Our best advice is proceed slowly, level by level, moving

down through the organization only as acceptance and understanding are achieved. Once top management is on board, move into middle management gaining commitment as you go, etc.

6. - EFFECTIVE COMMUNICATIONS

This--far and away--is the most difficult and challenging aspect of getting a company productivity program going. People will generally agree that every organization ought to become more productive. But before real improvement can happen, people need to know what the problems are and what they are supposed to do.

Productivity can have hidden meanings; productivity is seen by many as a code word for speed-ups, layoffs, and a reduction in security.

If a positive communications program is not carried out people will tend to perceive productivity improvement as benefiting only the company, followed by a "what's-in-it-for-me?" attitude.

Managers, supervisors, and each employee need to know why an organization has a productivity improvement program. The reasons are straightforward:

1. To increase the possibility of corporate success.
2. To generate more earnings and make investing in the company more attractive to shareholders.
3. To improve profits so as to finance the business.
4. To provide better service and products to customers.
5. To increase market share.
6. To grow.

It has to be accepted that in the long run gains for individual employees can follow only after improvements in company productivity are realized. People need to know more about "WHY" things are done. They need to feel they belong to an organization before they will support its systems and programs.

Some techniques for productivity communication are:

1. The company newspaper.
2. An in-house productivity newsletter.
3. Talks by management.
4. Employee listening sessions.
5. Small group meetings to instill a feeling of teamwork and mutual responsibility.
6. Follow-up questionnaires periodically circulated to employees to gain reaction to management meetings or communications.

Here are some things to watch out for in your productivity communications program:

1. Employees may resent emphasis on productivity without some tie-in to self interest.
2. Some communications backfire because they are silly or demeaning.
3. Use discretion during periods of layoff or reduction in force.
4. Communications alone can't do the job. Communications programs must coordinate with other line and staff efforts to change work habits and attitudes of all.

The key to a successful program is timely and effective communication. A defined and planned productivity communications program should include newsletters, brochures, management-employee meetings, complaint systems, etc., and a genuine effort of managers and supervisors to keep all employees, and each other, informed.

7. - SEMINARS AND TRAINING FOR SUPERVISORS

In many organizations, managers and supervisors have not been trained in productivity improvement tools. These tools include effective supervision, crew loading, automation, work simplification and measurement, job enlargement or redesign, motivation, incentives, systems analysis and design, and human resource management.

Factories have traditionally had well-established ways of tackling productivity problems. However, over the years even industrial companies are now finding themselves with a greater proportion of employees in non-factory support areas (sales, engineering, clerical, and administrative departments). Productivity training programs are needed for all areas of company operations.

A productivity training program should:

1. Provide managers and supervisors with an understanding of productivity and the part it plays in industry and the company.
2. Describe the major factors affecting productivity.
3. Cover the tools, measures, and techniques for improving productivity.
4. Instill in all a desire to apply productivity thinking to on-the-job concerns.

8. - PARTICIPATION OF ALL EMPLOYEES

Inspiration has to come from the top, but often the best ideas come from the bottom up. Nobody knows the work better than the people doing it. The involvement of people including managers and supervisors, to want to improve, to want to do a better job, will help to ensure a successful productivity improvement program.

The following programs and techniques, if properly administered, will get employees involved, make jobs more interesting, and provide a participative atmosphere for productivity improvement:

- Employee suggestion programs
- Work simplification
- Job rotation
- Employee teams
- Employee surveys and listening sessions
- Attendance recognition
- Cost reduction
- Employee/Foreman/Supervisor of the month/
quarter/year programs
- Incentives
- Flexible working hours

9. - GOALS AND OBJECTIVES

To be successful a serious productivity improvement effort must include productivity goals. Our advice: Try some goals even if you're not sure they are right; make corrections later.

Here's a simple six-step technique for productivity goal setting:

1. Collect your productivity data
2. Decide what to measure
3. Set goals
4. Build plans
5. Implement productivity improvements
6. Monitor progress

Once you have decided on the $\frac{\text{OUTPUT}}{\text{INPUT}}$ ratios which best fit your work, set improvement targets for the next week, month, or year.

10. - A SYSTEM FOR MEASURING, MONITORING, AND REPORTING

As with any program having goals and objectives, there must be some way to measure, monitor, and report performance against goals. The productivity measurement system can be simple or sophisticated, modest or ambitious. Keep it simple at first. Numbers far from perfect can serve as the foundation for a system which tracks individual, group, and company productivity.

We've seen many company productivity efforts break down over measuring, monitoring, and reporting. Managers become so involved with unnecessary methodology (modeling, simulation, probabilities) they never get around to doing anything about the improvements!

Keep your measurement system simple and let it grow with the rest of the productivity improvement program. A productivity measure is a ratio (output divided by input). The absolute value is somewhat important, but from a productivity standpoint the rate of improvement is more important.

Whatever you are measuring and monitoring, be consistent and report the numbers regularly. The simple concept of a "productivity balance sheet" can be effective in getting started on a program to measure, monitor, and report company productivity. The table below presents a

simple format which enables an organization to effectively track "people productivity" as measured, for example by sales per employee and sales per pay dollar.

XYZ COMPANY

1976 PRODUCTIVITY

Jan. Feb. Mar. Apr....ETC.

- 1. Sales
- 2. Average No. of Employees
- 3. Sales/Employee (1 divided by 2)
- 4. Wages and Salaries
- 5. Sales to Pay (1 divided by 4)

If over time, your "people measures" are in fact moving in the right direction, yet profit goals still are not being met, you can conclude that people productivity is not your problem. From here you might take a look at make/buy decisions, procedures, capital acquisition philosophy and the like, to find where the real cause of a decline in profit lies.

Remember that productivity measures are measures of the efficiency with which you use your resources to generate output. Productivity ratios must be placed in a framework of economic and social objectives and compared with other measures. Achievement of formal company goals and department goals is primary. Productivity measures can keep you apprised of status and trends as you move toward attainment of these goals.

11. - INFORMATION RESOURCES

Finally, take stock of the resources already available and lean on the experiences of others to help get a productivity program going in your company. Following is a list of organizations and publications highly regarded by Honeywell as having meaningful input for any company productivity improvement programs.

Organizations

National Center for Productivity
and Quality of Working Life
2000 M Street, NW.
Washington, DC 20036

Joint Financial Management
Improvement Program
666 11th Street, NW., Suite 705
Washington, DC 20001

The Improvement Institute
P. O. Box 6245
Cleveland, Ohio 44101

Books and Periodicals

-----, "Improving Productivity, a Description of
Selected Company Programs," National Center for
Productivity and Quality of Working Life, 2000 M
Street, NW., Washington, DC 20036, December 1975.

-----, "Situation Report" (Productivity Series), U.S.
Department of Commerce, Office of the Ombudsman
for Business, Washington, DC 20230.

Hickey, James J., Employee Productivity; How to Improve
and Measure Your Company's Performance, Institute
for the Advancement of Scientific Management and
Control, 88 Lindsley Place, Stratford, CT.

Jacobs, Herman S., with Katherine Jillson, "Executive
Productivity," (American Management Assns. AMA
Survey Report), AMACOM, 135 West 50th Street,
New York, NY 10020, c.1974.

Katzell, Mildred E., "Productivity: The Measure and
the Myth," (American Management Assns., AMA Survey
Report), AMACOM, 135 West 50th Street, New York,
NY 10020, c.1975.

Mager, Robert F. and Peter Pipe, Analyzing Performance
Problems, Fearon Publishers/Lea Siegler, Inc.,
Belmont, CA, c.1970.

McBeath, Gordon, Productivity Through People, A Halsted
Press Book, John Wiley and Sons, Inc., New York,
c.1974.

Schleicher, William F., editor, "National Productivity Report" (biweekly), William F. Schleicher and Associates, 1110 Greenwood Road, Wheaton, IL 60187.

Sutermeister, Robert A., People and Productivity, 2nd ed., McGraw-Hill Book Co., New York, c.1969.

Vough, Clair F. with Bernard Asbell, Tapping the Human Resource, A Strategy for Productivity, AMACOM, 135 West 50th St., New York, NY 10020, c.1975.