SOME REMARKS ON PLANNING, PROGRAMMING AND BUDGETING

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I think it is appropriate for me to introduce myself by summarizing briefly my experience with program planning. My first contact with it was in 1954 when I joined the Cost Analysis Department of The RAND Corporation. It was there, in working on Air Force long-range planning problems, that we formulated the general concepts of Planning, Programming, and Budgeting (PPB). Many of the methods we used were not new even at that time. However, the organization of these methods into a system was, I believe, a significant contribution.

During the years between 1954 and 1960, as our system continued to develop, we spent considerable time trying to sell our ideas to the Air Force. Frankly, there were few takers. We were suggesting a degree of program disclosure that to the Air Force was politically unpalatable. In 1961, when Mr. Robert McNamara became Secretary of Defense, he asked Mr. Charles Hitch, one of our collegues at RAND, to be his Comptroller. The two of them agreed that Mr. Hitch would make installation of PPB in the Department of Defense a high priority goal. Not too surprisingly, some of us were called on to help. We accepted, formed a task force, and opened an office in the Washington area. After several weeks of survey, we agreed that the idea was sound but

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recommended that a year be spent studying the problem and putting together an implementation plan. Secretary McNamara listened to our recommendations and his main comment was, "Fine, but I want the system implemented this year not next." So we were faced with the task of quickly making operational something that until that time was little more than a set of concepts.

There were no end of problems, many of which, frankly, haven't been solved to this day. Where do you place such an operation organizationally? How do you integrate planning and traditional budgeting? Where does programming fit in? What are appropriate program change mechanisms? Will such a system cause an undesirable degree of centralized authority? What information systems will be required? These are typical of the questions for which we needed answers. For better or worse, the job was done and on schedule. The experience was at times frustrating but, for the most part, invaluable.

About three years ago, a number of us at RAND began to think seriously about applying similar analytical methods to planning problems in certain nondefense areas. Fortunately, this thinking coincided with that of our new president and with President Johnson's, who on June 25, 1965, announced that a PPB system comparable to that which had been working effectively in the Department of Defense would be adopted by each federal agency. From that time, my personal interest has been with applications in the health field. I have made some preliminary investigations but in reality I am just beginning to get my feet wet. My knowledge of many of the topics you discussed this morning is obviously limited. I have seen enough, however, to be convinced that PPB can play a useful role in health planning.

I have quite recently worked on PPB system implementation with the Health Services Administration of the City of New York; with Winthrop Rockefeller, Governor of the State of Arkansas; with school officials planning education for the State of California; with the Air Force; and, as I mentioned earlier, with the Department of Defense. Each has its own peculiar problems to be sure, but the extent to which they have common problems makes their trials and tribulations worthy of recounting.

In the next few minutes, I shall describe some of the general methods and broader implications of PPB. Following that, I will try to clarify the relationship between PPB and traditional budgeting and to place PPB in its proper context. Much of what I say will be familiar to you but perhaps I will be able to present it so as to yield some additional insights.

WHAT IS PLANNING, PROGRAMMING, AND BUDGETING?

I find it particularly useful in describing PPB to divide the total activity into three major categories: structuring, analyzing, and progress reporting and control. Significant benefits can be obtained from engaging in each separately even though they are intended to be parts of an integrated whole. Further, the fact that one doesn't do one particularly well is not a sufficient excuse for slighting the others, I shall concentrate, this morning, on the first two. Progress reporting and program control is important but not sufficiently novel to warrant much consideration at this time.

Structuring

In the structural part of program budgeting, the objectives of a particular organization, broad or narrow, real or implied, are used to focus an examination of the outputs and cost of an organization's current activities. A set of categories that highlight the organization's broad missions or goals are first defined. In PPB language these are called major programs. No organization I have yet encountered has been able to describe their goals satisfactorily when queried initially, a fact about which I will say more later. So what do we do? We make tentative judgments and proceed with a first iteration. Each ongoing activity or group of activities is identified to one or the other of these major programs. When activities are so identified they are called program elements. A measure of cost or resource requirements and a measure of output or program accomplishment is then

associated with each program element. Two sets of major programs considered for use by the Health Services Administration of the City of New York are shown in Tables 1 and 2. The first stresses the separation between physical and mental health while the second highlights preventive care and child health advancement. There is no best set of program categories that is independent of the question being addressed.

Physical resources are of interest because, as Dr. Devine pointed out earlier, many critical planning problems are not dollar problems at all but rather: how do you obtain resources to accomplish objectives even though you have ample funds? Potential requirements for specially trained people and unique facilities are often more troublesome than requirements for dollars.

For many program elements, it is difficult, if not impossible, to measure output or accomplishment. For this reason, inputs are frequently used as substitutes. For example, number of hospitals might be used to indicate the quality of care provided. Manhours committed to a particular research area might be used to indicate the output of that research. Most of these, while falling short of being true measures of benefits, do convey necessary impressions about what expenditures are buying. Structuring described to this point serves to relate that which is under way to the accomplishment of broad goals or objectives--to provide visability. The next and more important task is to project the future implications of current operations.

The projection should reflect no more than an extension of current activities. It should indicate what the future programs will look like if no changes are made. In this form, it provides a benchmark from which to evaluate possible changes. It has other value also. Having made such a projection, the typical reaction of people is, my God, is that what I'm doing? It is at that point that the first benefits from PPB become obvious, which points up what I said earlier about the difficulty of describing goals. With even a crude projection, the future implications of what's going on at present and how this relates to the accomplishment of goals becomes much clearer.

Table 1

A PROPOSED PROGRAM STRUCTURE FOR THE
HEALTH SERVICES ADMINISTRATION OF
THE CITY OF NEW YORK

PHYSICAL HEALTH ADVANCEMENT
- Prevention and Detection
- Care and Treatment
- Inspection, Regulation, and Standard Setting
- Evaluation
- Administration and Support

MENTAL HEALTH ADVANCEMENT
- Prevention and Detection
- Care and Treatment
- Inspection, Regulation, and Standard Setting
- Evaluation
- Administration and Support

ENVIRONMENTAL HEALTH SERVICES
- Health and Safety Education
- Implementation
- Inspection, Regulation, and Standard Setting
- Evaluation
- Administration and Support

MORBIDITY AND MORTALITY INVESTIGATIONS
- Inspection, Regulation, and Standard Setting
- Evaluation
- Administration and Support (Records)

RESOURCE DEVELOPMENT
- Research
- Manpower Development and Training
- Facilities and Equipment
- Administration and Support

Table 2

A PROPOSED PROGRAM STRUCTURE FOR THE
HEALTH SERVICES ADMINISTRATION OF
THE CITY OF NEW YORK

GENERAL HEALTH ADVANCEMENT
- Research and Development
- Statistics and Evaluation
- Work with Target Population (Education, Case-finding, Follow-up, Rehabilitation)
- Professional and Institutional Standards and Programs (Screening, Diagnosis, Preventive)
- Direct Treatment (Funding Only)

CHILD HEALTH ADVANCEMENT
- Research and Development
- Statistics and Evaluation
- Work with Target Population (Education, Case-finding Follow-up, Rehabilitation)
- Professional and Institutional Standards and Programs (Screening, Diagnosis, Preventive)
- Direct Treatment (Funding Only)

MENTAL HEALTH ADVANCEMENT
- Research and Development
- Statistics and Evaluation
- Work with Target Population (Education, Case-finding, Follow-up, Rehabilitation)
- Professional and Institutional Standards and Programs (Screening, Diagnosis, Preventive)
- Direct Treatment (Funding Only)

ENVIRONMENTAL HEALTH
- Environmental Sanitation
- Food and Drug
- Poison Control
- Occupational Health
- Radiation Control

DISPENSING OF PERSONAL CARE
- Ambulatory
- Inpatient
- Extended Care
- Home Care

(By Location)

HEALTH SERVICES QUALITY CONTROL
- Institutional Inspection
- Laboratory Improvement
- Medical Audit

Table 2 (cont.)

POPULATION RECORDS AND INVESTIGATIONS
- Health Records
- Investigation into Causes of Death

CENTRAL MANAGEMENT AND SERVICES
- Planning and Programming
- Health Statistics
- Health Manpower Development
- Central Research
- Administrative Services

How far do you project? It differs from organization to organization. To answer the question adequately one has to understand the reasons for making projections, and there are several. One that has already been cited by other speakers this morning is that changing programs to which you are already committed takes time. An extended time horizon allows anticipating needed changes in time to take effective action. You can't change things today but those programs that will result in future change can be gotten under way today. Further, acquisition of major capital items requires substantial lead times and so this is another reason for looking to the future. Anticipating the future will also help to identify decisions that can be delayed as well as those current decisions necessary to provide future options.

Projections of cost and output are generally shown period by period (or time phased). Why? Well, when the resources to do something will be required is often more important than what the total requirements will eventually be. One can amortize large capital investments over an asset's useful life for analysis purposes but for planning: when and how much the contractor must be paid has to be anticipated.

ANALYSIS

The analytical phase of PPB begins with looking at the projected program and deciding to consider changing direction. Among the reasons for wanting to alter programs are: A projected requirement for more resources than will be available; the program is pursuing the wrong goals; or there is a feeling that a generally more efficient utilization of resources can be achieved. In each case, a systematic evaluation of alternative ways of doing business is required and it is here that analysis plays its major role. Analysis won't make the choices for you but it can help.

The form of analysis we use at RAND is called systems analysis.* To be sure, it involves comparing alternatives in terms of their

*Cost benefit or cost effectiveness analyses, which produce cost effectiveness ratios as indexes of preference, are generally considered a necessary part of rather than substitutes for the broader systems analysis.

estimated cost and expected benefits but it also includes quite a bit more. A systems analysis typically starts by questioning the usefulness of addressing particular issues. If somebody looks at their programs and says, we are putting too much money into in-patient care and not enough into neighborhood health centers, a systems analyst would, in all likelihood, ask why this is of concern. A probable answer is that interest is in providing better health care to the population. Why? is the next logical question. Suppose that the answer is that you want to raise standards of living. The systems analyst would point out that there are other ways of doing it, some of which may be preferred, and then ask what makes you think that putting additional resources into health care is the best, or even a good alternative? Such dialogue is a major part of the systems analysis process. In this way, complicated issues are brought more clearly into focus.

Seldom, if ever, can one treat of the whole problem analytically. Many relevant considerations will be impossible to evaluate quantitatively. Relevant pieces of the total problem that can be analyzed must be factored out, a process which is, at best, more of an art than a science. Having selected a meaningful question, an analytical problem is structured, appropriate criteria are selected, possible alternative solutions defined, analytical models built, costs and benefits of each alternative estimated and conclusions drawn. In most cases, this is an iterative process. It is expected that one iteration will result in the invention of new alternatives and consequently in the need for additional iterations. It is a process of continual learning.

Systems analysis is then concerned with the extent to which the results of the quantitative analyses do, in fact, bear on the choice problem and with identifying all of the important nonquantifiable variables that must also be weighed by the planner. Sociological and political implications are examples of nonquantifiable variables that are often overriding. Organizing these vague and largely intangible but necessary inputs to the decision process is also part of systems analysis.

PPB AND THE TRADITIONAL BUDGET

Having addressed appropriate issues and with the help of analysis-made choices about how best to pursue objectives, the problem becomes one of implementation. To paraphrase Mrs. Luther, if you can't get the budget to move in the direction you want it to move, you don't have much chance of accomplishing your objectives. This fact explains why PPB is frequently made the responsibility of budget officers. Whether PPB because of its necessary relationship to the traditional budget should be in the budget office or whether PPB because of its focus on planning should be in the planning office is a debate that has yet to be terminated.

Traditional budget philosophy is and perhaps should continue to be somewhat at odds with long-range planning. For planning, we project programs and cost as many as five to ten years into the future. Making these projections requires describing future activities and estimating their requirements for resources. As I'm sure you're all aware, the farther we extend our time horizon the less able we are to describe things explicitly. Also, the more uncertain we are about estimates of resource requirements or about measures of accomplishment. Uncertainty abounds. Ranges of estimates rather than point estimates are prepared. The focus is, of necessity, on relative rather than absolute values. Significant differences among alternatives must be demonstrated for choices to be made. Gross estimates of the cost and effectiveness of alternatives are the best that can be achieved.

In traditional budgeting, the time horizon is considerably shorter; generally one year. Program elements are well understood and descriptive detail is plentiful. Cost estimates for budgetary purposes will dictate an organization's operations during the period budgeted for. Therefore, accurate point estimates are required and usually achievable.

Cost estimating for planning consists, largely, of the development and application of aggregate, statistically derived cost estimating relationships such as:

$$C = aP$$

where C = an organization's annual salaries,

P = average number of people in the organization,

a = average annual salary per person;

or

$$S = k + bD$$

where S = number of support persons required,

D = number of direct people requiring support,

b = number of support people added per additional direct person,

k = a constant.

Cost estimating for traditional budgeting more closely resembles matching a set of firm prices with a detailed bill of materials and calculating the total cost.

For planning, time streams of costs are related to activities or groups of activities (program elements) that produce output and are displayed in categories chosen to highlight requirements for particular kinds of resources or for particular functions to be performed. Costs are also identified as being for Research and Development, Initial Investment, or for Annual Operating which indicates their relationship to time and to volume of activity. A typical set of categories used for planning is shown in Table 3.

Traditional budgets are more concerned with the delegation of managerial responsibility, with accountability and with identifying objects of expenditure. For example, the traditional budget for the Air Force is organized around the major appropriation categories shown in Table 4.

Table 4

U.S. AIR FORCE BUDGET APPROPRIATION ACCOUNTS

Aircraft Procurement
Missile Procurement
Other Procurement
Research, Development, Test and Evaluation
Operations and Maintenance
Military Personnel
etc.

Table 3

TYPICAL COST CATEGORIES FOR USE IN PROGRAM PLANNING

RESEARCH AND DEVELOPMENT ($)
- Basic Research
- Applied Research
- Systems Design
- System Test

Total

INITIAL INVESTMENT ($)
- Facilities Construction
- Procurement of Primary Equipment
- Procurement of Spare Parts
- Procurement of Other Supplies
- Recruiting and Training of Personnel
- .
- .
- .
- Procurement of Support Equipment

Total

ANNUAL OPERATING ($)
- Maintenance and Replacement of Facilities
- Maintenance of Primary Equipment
- Maintenance of Support Equipment
- Procurement of Supplies
- Pay of Personnel
- Training of Personnel
- .
- .
- .
- Travel and Transportation

Total

PERSONNEL REQUIREMENTS (NO.)
- Administrative Personnel
- Direct Personnel
- Support Personnel

Total

This breakout applies to the total Air Force, and for years no identification to output-oriented program elements was attempted.

In concept, costs shown for the first increment of the plan should agree, at some level, with those in the operating budget covering the same period. However, obtaining this agreement has been a continual headache. In the early days of PPB, it was thought that a straightforward translation from the planner's resource categories to the budget officer's object categories was all that was necessary. For many reasons, this has not been easy to accomplish. Differences in cost estimating methods is a major reason. Definitional and allocational problems also contribute to the difficulties. Instead, the link has had to be made through the program itself as follows: Having chosen a plan, those resources necessary to accomplish the objectives set out are programmed. This consists of earmarking resources for the support of particular activities and scheduling necessary procurement. In other words, another plan (a resource plan) is constructed, the first increment of which furnishes the basis for the traditional budget. The traditional budget then describes how the first increment of the plan will be financed.

While the plan does provide guidelines and impose constraints on the budget, there are a large number of budgets that can be prepared for the next period, no one of which will preclude the accomplishment of the plan. The question to the budget officer is, which of these? The most relevant factors have to do with financing expediences, which are the primary concern of the budget officer and of little interest to the planner.

With all of these differences, PPB has had some important influence on traditional budgeting. Its influence on the budget review process is probably the most important. Historically, budget review consisted of general acceptance of that which was a carry over from the last period and evaluation in depth of proposed additions. For example, in the City of New York, each agency submits three separate budgets. The first, the basic budget, reflects, essentially, last year's operating budget adjusted to show the effect of wage changes resulting

from labor agreements. This budget is usually approved in total and with little substantive review. Each agency also submits a supplemental operating budget which includes all desired additions to the basic budget. Finally, a capital budget is submitted. The supplementary and the capital budgets are reviewed item by item, but not together with each other or with the basic budget. Items are approved or disapproved, but seldom does the possibility of paying for a new program by eliminating or reducing something in the basic budget ever come up. One of the fundamental principles of PPB is that on-going programs are reviewed simultaneously with proposed new programs and operating and capital budgets are considered together. There is always the possibility of paying for something new by reducing or otherwise changing that which is already in process.

Traditional budget reviews have typically been organized around objects of expenditure such as those shown in Table 4. For example, to this day, Congress holds separate hearings on Military Construction and decisions to build or not to build are made apart from other decisions having impact on units of military capability; i.e., program elements. It is quite possible for gross inconsistencies to result. For example, the procurement of major items of equipment may be approved at the same time the people to operate the equipment are disapproved. In PPB, the review process is organized around the program elements. Approval to procure equipment implies approval to acquire the other resources necessary to make that item of equipment effective.

As traditional budgets have such a short time horizon, decisions are frequently made in ignorance of their implications for the future. For example, a decision to go ahead with procurement this year, in all likelihood, carries with it the necessity of making expenditures for additional procurement in the future and, more importantly, for future operating costs. PPB, with its extended time horizon, and with its separation between Research and Development Costs, Investment Costs, and Annual Operating Costs goes along way towards alleviating this problem.

CONCLUSION

We don't know what the future is going to hold. There may be technological breakthroughs. There may be monetary breakthroughs. Everything is so uncertain. Why all the fuss about planning? Can it be more than an academic exercise?

It's the very process of planning from which the payoff comes. You don't sit down once a year and make a plan and then next year sit down and revise the plan. You recognize that any plan you make may change tomorrow or next week, or next month. No plan for the future is inviolate. Predicting the future is not the objective. The primary purpose of planning is that it keeps you concerned with the future. It provides you with insights that could not be provided in any other way. It provides you with a framework in which you can evaluate your goals and objectives and make meaningful decisions about your programs. The basic structure provides a frame of reference within which one continually deliberates about available choices. The frame of reference may change from time to time but at least there is a base from which to record change. Planning makes it possible for you, perhaps not to control, but certainly to influence your future.

Most significant decisions are based on political judgments rather than analytical results. Such being the case, is not analysis adding unnecessary confusion or is it not at best of limited use? PPB was never intended to be a decisionmaking device and it certainly is not. The most that it can do is to provide insights, to illuminate issues, to help identify relevant questions and thereby to make the choice problem a bit easier. If it adds confusion rather than insights, there is something wrong with the analysis and not with PPB. Further, many times, analytical results will indicate a certain choice and a decision will be made to the contrary. Analysis has not been slighted. The decisionmaker was, most likely, influenced by factors not a part of analysis and it is his responsibility to be so influenced. However, the analysis did, at the very least, contribute to his awareness of some possible implications of his decision.

When placed in its proper context, PPB will bring order to and raise the level of program planning and budgeting in any field. Comprehensive Health Planning is no exception. To that end, I hope this morning's discussion has contributed to your understanding and successful use of one of today's most important management techniques.