15 SEP 1969

MEMORANDUM FOR: Chief, Information Processing Staff, OPPB

SUBJECT : Strengthening the Information Processing Structure of the Agency

1. We have been asked to submit ideas about WHAT:

a. IPC responsibilities should be within the Directorate;

b. the responsibilities of the IPC group should be as a group;

c. the responsibilities of the Information Processing Staff, OPPB should be; and

d. the responsibilities of the Executive Director-Comptroller should be.

Ideas about how to strengthen the overall IPC structure and performance are also solicited, but will be specifically addressed at a later time.

2. I believe our approach to the management of information processing activities in the Agency has been backward. The concern has been with proliferating computer acquisitions and burgeoning costs. Consequently management attention has focussed on hardware. We have backed a few steps away from insisting on centralizing all computing capability of the Agency under single management, but we still attempt to lump together into one Program Category for planning and budgeting purposes all activities which use computers. The Information Processing and Exploitation Category is a hodgepodge. It is a strange mix of automated and manual activities; of functional units and organizational components. The logic of what it contains is equally as obscure as the logic supporting the omissions.

3. Computer systems are versatile. They will do a wide variety of things from mundane clerical operations to exotic and sophisticated scientific calculations. Essentially they are collections of hardware and software configured in a way to permit them to be used to solve some operational problem or serve some management objective. There is

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no reason for them to exist in an environment unto themselves. There is nothing about them which gives any element of commonality to the things for which they are used. Because computers instead of an acre of back to back analysts are used to retrieve information, for example, is not a reason to divert the responsibility for the management and productivity of information retrieval systems to the manager of the computer center, or to dilute that responsibility by sharing it. The manager who has the responsibility for the function has the responsibility for the system used to perform that function whether it requires slide rules, calculating machines, punched cards, or computers. He is responsible for what goes into the system, and what comes out. This is not to say, however, that he must have command jurisdiction over the computer center. It simply says that he cannot relinquish his responsibility for the function to the manager of the computer center no matter where that center may be located organizationally.

4. The judgment of whether or not to use a computer to solve a problem is in the first instance the responsibility of the manager who has the problem to be solved. He must evaluate the alternatives and decide whether a manual, a computer, or some method in between represents the most effective solution operationally and economically. Because computers are versatile and available simple as well as highly complex problems gravitate to them. Computer equipment is used too often simply because it's there with time available, or because the working level operator who has a problem also has a friend who is a computer programmer. Together they work out solutions to fragmentary problems in a fragmentary way with the result that valuable human as well as machine resources become committed without the exercise of management judgment about the cost, the resource allocation, the effectiveness or even the utility of the solution and its relationship to larger parts of the system. Once an application is on a computer it stays there regardless of how it got there or what its utility may have been when it was first installed, and regardless of whether it continues to serve a valuable purpose or has outlived its usefulness. Managers and operators almost never give their attention to a critical review of on-going applications for the purpose of discontinuing those which have been overtaken by changing requirements. It is for these and other similar reasons that the number of computers grown and the associated costs mushroom, but centralized management attention to computing equipment is not the way to get at problems of that sort. Segregation and separate identification of functions which use computing equipment and their merger into one information processing cauldron is not the way to get at it either. To lump imagery analysis together with printing services into one program category simply because they both use computing equipment or even because they are both, in a manner of speaking, processors of information does not make them a management homogeneity. The value of computer systems must be measured in terms of the effectiveness of the operational or management systems they serve. It cannot be measured in terms of numbers of

computers and their costs alone. There is no such thing as an ADP program in the Agency, and we should stop trying to manage it as though there were such a program. Instead, we have a wide variety of operational and management programs which use ADP and we should concentrate on their effective management of it.

5. The problem of controlling the numbers of computers is essentially an inventory problem. The problem of controlling their costs is essentially an accounting problem. These are relatively simple problems deserving only of the simplest possible solutions. Perhaps we should be seeking a way to adapt the FAN account and sub-object class mechanisms to accomplish these purposes rather than attempt to extract the computer usages from all of the operational and management applications they have in the Agency. In any case, accountability is essentially a clerical operation and it should be treated clerically.

6. If we are really going to manage and control computing equipment in the Agency, its costs as well as its growth in numbers, we have to find some way of getting at the source of the problem. We have to find some way of getting at the source of the problem. We have to find some way of bringing management judgment to bear on the decision to use the computer in the first place. There is an over riding concern that the use of computers be limited to problems which justify the expenditure of computing power and the scarce human resources necessary to operate and maintain it. I repeat: the judgment of whether or not to use a computer to solve a problem is the responsibility of the manager who has the problem to be solved. He must evaluate the alternatives and decide the use of a computer represents the best solution. We have to find some way to ensure that this responsibility is conscientiously, prudently, and judiciously fulfilled.

7. BOB Circular A-71 dated March 6, 1965 assigns to the heads of agencies responsibility for administration and management of ADP activities. Key words in that document are: mission accomplishment; utility; increased effectiveness; greatest return; higher productivity; integrated systems; systems management; program accomplishment; use; joint use; impact on the work force; and planning. If we can find a way to bring responsible management judgment to bear on these factors during the program planning stages before problem solutions become committed to computers we will have solved the problem of proliferation. We are not interested in trying to manage equipment in a vacuum. We are interested in mission accomplishment and the best management we can bring to bear to achieve that objective regardless of the tools used in the process. We need a mechanism which will determine when computing equipment will best serve the purpose; when it will not; what we should do when it will; and what we should do when it won't.

8. Inherent in the management and control over the uses of computing equipment is the need to plan for its use as far in advance as possible. This is not, and we should not attempt to make it, a

separate exercises. Plans to use computers can only be made when functional and operational plans have reached the point in their development where the manager begins to identify how he proposes to construct and conduct an activity. While it may not be possible to identify potential computer impact in the initial formulation, the conceptual stages of a plan, it should be possible to recognize them very early in the development of operational plans and programs. In any case, it is vital that potential ADP applications be identified as early in the planning process as practicable. This suggests the need for a very close relationship between the program planners and the information processing coordinators, particularly if we acknowledge that it isn't always reasonable to expect the operating manager to identify them because he may not be attuned to computer potential and capability.

9. While it is important for the Information Processing Coordinators to have a close working relationship with the program planners, we dare not rely entirely on the PPB cycle and mechanism for the identification of potential ADP applications. Isolating a problem, getting it defined, determining the desirability and feasibility of a computer solution, and designing a system to satisfy the requirement is a difficult and time consuming process which will very often cause the development of ADP applications to get out of phase with the PPB cycle. Accurate resource forecasting can only be done after systems have been designed which may further distort the time phasing relationship with the PPB mechanism. This suggests that we cannot rely entirely on the PPB mechanism for the early surfacing of potential ADP applications but will need a separate mechanism closely interrelated with it and overlapping it at certain points in the cycle.

10. Early identification of potential ADP applications is not only necessary to permit reasonable forecasting of computer resources, but also to permit logistics, communications and security planning. The information processing mechanism as well as the PPB system must provide for the early identification of plans and requirements to all of these components so their planning and programming can include provision for space, power and air conditioning supplements, screen rooms, building alterations and special construction, establishing the communications network and all of the other supporting actions necessary to put a computer application into practical operation. Early information is vital to these components, but it should be regarded as equally vital to the component proposing the installation in order to ensure that every precaution is taken to have the facilities ready when the application is due to become operational.

11. In summary, we should abandon the Information Processing and Exploitation category because it doesn't make sense; we should abandon the attempt to pull together into one lump all systems which use computing equipment as a means of managing and controlling proliferation of computers and costs because that doesn't make sense either; we should seek a simple mechanical method for maintaining an inventory and accounting system; we should direct our attention to a system for

find a suitable way to relate to program planners to assure the earliest possible identification of programs which have potential ADP impact; we should find a way to assist managers to make prudent judgments about adopting computer methods; and we should find a way to monitor the exercise of management judgments and ensure their judiciousness without looking over the manager's shoulder.

12. If this is a reasonable description of WHAT the IPC mechanism should be concerned with, we can begin to address the question of what the responsibilities of the various echelons should be.

13. While some of the activities of the Office of Communications and all of the computer support rendered the Support Directorate by the Office of Computer Services are included in the Information Processing and Exploitation Category of the program, none of the Support Information Processing Systems (SIPS) are included. The Support Directorate is the only Directorate which does not have its own general purpose computing equipment. With the exception of special purpose gear in the Office of Communications, we are only indirectly concerned with hardware management. Our attention has, and will continue to focus on managing and controlling the use of computing equipment at the source, that is with the component or manager who has a problem to be solved.

14. In October 1968 the DD/S directed a memo to each of the Support offices saying that centralized Directorate cognizance and broad management control over all information processing activities in the Support Directorate is imperative. (Information processing was defined to include all automatic and electronic data processing and related manual or machine activities except communications automatic switching.) The memo also said that all proposals for the development of new or substantial modification of on-going information processing systems must be subjected to an overall review and adjudication of priorities from the Directorate point of view. This requirement for review applies whether the proposal is for the conduct of a feasibility study, the acquisition of equipment, the modification of existing systems or any other aspect of system conception or change. All proposals and requirements for information processing service or assistance are to be taken up with the DD/S-IPC before assistance is sought from other Agency facilities or contractors. They are to be prepared for consideration in accordance with criteria and standards to be established by the DD/S Information Processing Coordinator. The IPC is to assist in problem definition, in determining what facilities can best meet specific requirements, and in the development of requests for project approval. He will recommend to the DD/S priorities for project development. The DD/S IPC was also made responsible for keeping the DD/S informed of all Information processing activities of interest to the Support Directorate in the Agency as well as the intelligence community.

15. In addition, last Fall each of the offices was asked to

identify separately all plans in their program submissions which they expected would have ADP implications. Each of the programs was also reviewed by the Chief, Plans Staff in the Office of the DD/S with the same objective in mind. We have compiled these into a separate document of Support Information Processing projections for FY 1971-1975. Time has been too short to have a good assessment of the value of this exercise, but I believe it can be shaped into a significant planning tool. Whether we will do the same thing again this year or try some other way to get at the source of applications is still to be decided. The point is that any Support component considering a new computer application is expected to present the proposal to the IPC first.

16. I have the responsibility for the personnel management of support careerists assigned to the SIPS Task Force, and for approving requests for ADP related training for anyone in the Directorate. Personnel management is a serious problem not only in finding the right people but in trying to provide for their reasonable career development and progression.

17. I believe this covers pretty well what the responsibilities of the Support Directorate are and ought to be. I doubt that it would be productive to suggest what the responsibilities of the IP Staff, the IP Group, and the Executive Director should be until I have had the reaction of the other IPC's to the approach discussed in this paper.

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Information Processing
Coordinator, DD/S

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