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STATEMENT OF
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BEFORE THE
SUBCOMMITTEE ON ECONOMY IN GOVERNMENT
JOINT ECONOMIC COMMITTEE

Mr. Chairman and Members of the Committee:

As requested in your letter of June 1970, my statement today will cover certain matters as they relate to:

--inventory practices with respect to Government-owned automatic data processing (ADP) equipment, including equipment furnished to contractors, and

--the need for procurement specifications which will afford free and full competition to all qualified potential bidders, including the small manufacturers of peripheral equipment.

The United States Government is the world's largest user of automatic data processing equipment. Billions of dollars have already been invested by Federal agencies in efforts to develop and install computers and computer systems for use in Government operations.

The number of electronic computers in use by Government agencies has increased greatly in recent years. These computers have doubled in numbers and cost since 1965. The number of Government computers in use has increased from

2,412 installed in 1965 to approximately 5,000 expected to be installed in 1970. Also, annual cost has increased from a little over $1 billion in 1965 for in-house use of computers to over $2 billion in 1970, exclusive of military operational and intelligence systems.

Reports to the Congress

Overall reports are issued from time to time to provide the Congress with information on some of the broader management problems relating to ADP systems, which require attention if improvements are to be achieved in the efficiency and economy with which these systems are employed. Seven reports of this type have been previously submitted to the Congress. These are as follows:

Survey of Progress and Trend of Development and Use of Automatic Data Processing in Business and Management Control Systems of the Federal Government as of December 1957 (B-115369, June 27, 1958)

Review of Automatic Data Processing Developments in the Federal Government (B-115369, December 30, 1960)

Study of Financial Advantages of Purchasing over Leasing of Electronic Data Processing Equipment in the Federal Government (B-115369, March 6, 1963)

Review of Problems Relating to Management and Administration of Electronic Data Processing Systems in the Federal Government (B-115369, April 30, 1964)

Management of Automatic Data Processing Facilities in the Federal Government (B-115369, August 31, 1965)

Maintenance of Automatic Data Processing Equipment in the Federal Government (B-115369, April 3, 1968)

Study of the Acquisition of Peripheral Equipment for use with Automatic Data Processing Systems (B-115369, June 24, 1969)

Government inventory practices regarding ADP equipment

Several of these reports contain comments on the need for central information regarding the Government's ADP resources. At the time of our initial study in this field, we found that there were no procedures in operation for collecting data on Government agency ADP resources and planned acquisitions. Therefore, as part of the first Government-wide survey of progress and trends of development and use of ADP in the Federal Government, we collected data on ADP resources from Federal agencies. These data were published in our first survey report to the Congress in June 1958, which presented, as of December 31, 1957, the first Government-wide inventory report of ADP equipment.

Subsequently, in order to avoid unnecessary duplication of effort, it was agreed among representatives of our Office, the staff of the House Post Office and Civil Service Committee, and the Bureau of the Budget (now the Office of Management and Budget) that the Bureau would undertake to regularly collect this kind of information. By its Bulletin No. 60-4, dated October 9, 1959, and subsequent revisions over the years, the Bureau prescribed reporting procedures to be followed by executive agencies in rendering annual reports on ADP equipment.

The data collected under these procedures have been published annually from 1960 through 1966.

Public Law 89-306 dated October 30, 1965, was enacted to improve methods of purchase, lease, maintenance, operation, and utilization of the Government's ADP equipment. The implementation of this law was facilitated in April 1967

by the Bureau of the Budget's issuance of Circular A-83 which prescribed a management information system for Government-wide use. The law assigned to GSA responsibility for operating and maintaining the system and to BOB responsibility for fiscal and policy control.

The inventory information collected under these procedures has been published for fiscal years 1968 and 1969.

Although the executive agencies have been and are now required to submit information on their computer resources in accordance with BOB Circulars A-55 and A-83, our reviews have shown that the reporting system does not necessarily produce the accurate, complete, and useful information that is necessary to facilitate the making of proper management decisions on procurement and the utilization of ADP resources.

Our current review of the General Services Administration (GSA) Government-wide management information system for data processing shows that certain changes have been made to the reporting system which should contribute to an improved system. These changes, however, do not provide for the inclusion of certain information in the data bank or for refinements which we believe are necessary for the efficient management of the Government's ADP resources. Improvements could be made with regard to the following matters.

--There is a need for realistic and timely projections of acquisitions and releases of ADP equipment by the Federal agencies to improve reutilization efforts--to provide assistance for use in Government-wide contract negotiations and also to prevent unneeded ADP purchases.

--There is also a need for inclusion of information regarding software and its use in Government operations--to reduce duplication of effort and unnecessary costs.

During our current review, we found that the management information system still did not provide accurate and timely reports, as we reported earlier, and that, as a result, agencies had made only limited use of the system.

We were told by some Federal agencies that little use had been made of the management information system because the system lacked current and reliable information. For example, computer printouts of the June 30, 1969, reports were not available to GSA until December 15, 1969, and distribution of copies of these reports to the agencies was not made until February 20, 1970.

Potential savings available by the acquisition of peripheral equipment from independent peripheral manufacturers

During our recent study of the maintenance practices of Federal agencies, B-115369, April 3, 1968, we noted a few instances where aggressive managers saved their activities significant sums of money by not purchasing ADP system components and repair parts from the computer manufacturers but by purchasing the items directly from the actual manufacturers of the components and parts or from other sources of supply.

The officer in charge of the U.S. Fleet Numerical Weather Facility pointed out to us that, because the Facility maintained its own equipment, it was in a position to

determine the best method of procurement and that this led to the purchase of components and parts from the manufacturer of the component rather than from the Main Frame computer manufacturer.

For example, the Facility made two negotiated procurements of drum-storage devices and related controllers from the actual manufacturers of the components and parts. Equivalent equipment from the computer manufacturer could have cost an additional $475,200 computed as follows:

Purchase No. 1:		
Computer manufacturer's price	$530,000	
Drum manufacturer's price	480,500	
Savings		$ 49,500
Purchase No. 2:		
Computer manufacturer's price	845,500	
Drum manufacturer's price	419,800	
Savings		$425,700

The examples found during our maintenance study suggested to us that there was a possibility for Government agencies to achieve significant savings or other benefits through using procurement procedures which would provide for direct procurement of certain computer components and spare parts from original manufacturers or alternative sources of supply rather than relying on sole-source procurement from computer manufacturers. We conducted a separate study of this matter and issued our report on the Study of the Acquisition of Peripheral Equipment for Use with Automatic Data Processing Systems on June 24, 1969 (B-115369).

The study pointed out that it is common practice for Government ADP managers to obtain all required ADP equipment

from computer systems manufacturers even though certain items of equipment can be procured more economically from the original manufacturers or from alternate sources of supply.

We identified selected computer components that are directly interchangeable (plug-to-plug compatible) with certain other systems manufacturers' components and are available at substantial savings. We found that a number of private organizations had installed available equipment of this type and had achieved substantial savings. Yet we found only a few instances where Federal agencies had availed themselves of this economical means of acquiring computer components. We expressed the belief that central agency leadership could provide impetus for achieving similar savings in the Federal Government.

We estimated that, if plug-to-plug compatible components were rented from independent manufacturers rather than from systems manufacturers, annual savings would amount to at least $5 million. We estimated also that, if such components were to be purchased, they could be purchased for $23 million less from the component manufacturers than from the systems manufacturers.

We also expressed the belief that, in addition to the estimated savings in acquiring plug-to-plug compatible components, savings are available in the acquisition of non-plug-to-plug components from sources other than the systems manufacturers. We estimated that the purchase cost of such components--now being leased for about $50 million a year--from the systems manufacturers would be about $250 million

whereas the acquisition price for similar components from an alternative source of supply probably would be about $150 million--a difference of about $100 million.

One of the problems associated with the use of non-plug-to-plug components involves the compatibility of components with the main computer system. In this regard, the state of the computer industry today is such that, with the exception of plug-to-plug compatible peripheral devices, components cannot generally be directly interconnected with other manufacturers' components or systems. In this respect, both an electronic and a software interface generally have to be provided before the equipment can be interconnected.

A solution to this problem, which is now being considered by the industry, is the possibility of standardizing the interface media between peripheral equipment and the central processing unit. Interface standardization would stimulate competition in the peripheral equipment industry and would allow the user to select the peripheral equipment best suited to its requirements.

To this end, the United States of America Standards Institute, a privately supported organization acting as the national clearinghouse and coordinating agency for voluntary standards in the United States, has created a committee to consider the feasibility and practicality of input/output interface standardization.

Although the committee has been in operation since early 1967, progress has been slow in accomplishing desired objectives.

We believe that the development of a standard interface will promote industry competition and result in certain economies. It will provide the users with increased flexibility in the selection and use, regardless of the manufacturer, of those components best suited to achieve the desired objectives. Under such circumstances, the users will be in a better position to match system specifications with available equipment.

It is our view that, if an industrywide standard cannot be established in the near future, the National Bureau of Standards should be directed to develop a Federal standard interface program in order to achieve the significant savings which should result from increasing the compatibility of major components with Main Frame equipment. We have been advised that the Bureau of Standards has been handicapped by a shortage of funds in this area. We recommend that the Congress take steps to improve funding to the Bureau of Standards to promote this extremely important program.

Report Recommendations

The report contained the recommendations that:

--The head of each Federal agency take action to implement steps requiring replacement of leased components that can be replaced with more economical plug-to-plug compatible units.

--The Bureau of the Budget and the General Services Administration provide more specific guidelines for the evaluation and selection of plug-to-plug compatible equipment and of other components.

--Pending the issuance of specific policies, the factors described in the report be used by Federal agencies to evaluate alternate sources of ADP equipment, and

--Inasmuch as third-party leasing arrangements generally result in savings when compared with rental arrangements available from equipment manufacturers, the head of each Federal agency consider this method of procurement when purchase of the equipment is determined not to be advantageous.

In September 1969, our report was given specific consideration by top Federal ADP managers at a conference on the selection and procurement of computer systems by the Federal Government. The conference, conducted at the Federal Executive Institute by the Bureau of the Budget, was attended by officials of agencies which were major users of ADP systems in the Federal Government. The report of the conference, which summarized the consensus of the participants, contained the following statement:

> "Leased peripheral equipment components in systems now installed should be replaced by components available from independent peripheral manufacturers or other sources, if it is determined that such components are comparable, compatible, reliable, less expensive, and can be adequately maintained. Similar consideration should be given when adding to or modifying existing systems. These determinations should be made on a case-by-case basis in consideration of the particular circumstances that exist."

On February 2, 1970, the Bureau of the Budget issued its Bulletin No. 70-9 on the acquisition of peripheral components for installed ADP systems. The bulletin requires Federal agencies to review and make decisions on whether leased peripheral components in computer systems supplied by the system manufacturer should be replaced with less costly equipment available from independent manufacturers of peripheral equipment or other sources. Some agencies have completed their reviews and have made replacements which have already resulted in substantial savings to the Government. For example, in the case of the Veterans Administration (VA), a cost reduction of $1.5 million will be realized over the next 5 years by replacing 75 tape drives with less costly equipment supplied from a small manufacturer of peripheral equipment.

Before concluding, I would like to make a few comments regarding our current and planned audit work in the ADP area.

Because of the widespread and increasing use of computers by Government agencies, the General Accounting Office conducts continuing reviews of specific ADP systems in Federal agencies and of related management problems. Reports to the Congress relating to specific ADP systems used by individual Government agencies or their contractors are issued where we find unnecessary costs, losses, or other adverse effects of significance.

For example, the GAO has recommended the establishment of a common data processing facility for the foreign affairs community. Although the proposed facility has not yet been

established, a joint working group of representatives from the foreign affairs agencies has been in existence since 1968 and some progress has resulted from its efforts.

The Department of State and the Agency for International Development formed the joint working group in response to our proposal for merging their data processing systems which we made in a report to them dated July 14, 1967. We suggested, at that time, that State and AID should jointly reconsider the merger of their data processing activities to achieve more economical and effective utilization of equipment without unnecessary proliferation and to improve systems design and programming for more effective management of ADP operations. In establishing the joint working group, State and AID agreed to explore not only a bilateral integration but a common data processing capability for the foreign affairs community.

We have kept in touch with the joint working group since it was formed in 1968. The group consists of representatives of State, AID, USIA, ACDA, and the Peace Corps who have been meeting monthly to discuss and plan their activities.

We have agreed that the establishment of a hardware center to serve all of the foreign affairs agencies might be a promising first step approach, but we believe that more than a hardware center will be needed if full economical and operating advantages are to be gained. We have advocated that the group direct its efforts toward the development of common systems to the maximum extent possible, the

improvement of systems design and programming of all computer applications, and the consideration of existing or proposed plans of the various agencies for the upgrading and changing of their computer systems.

Currently we are undertaking Government-wide reviews of the management of computers and related communication systems, covering such significant problem areas as:

--performance measurement of Federal automated systems--to ascertain the most effective means of improving the utilization of the total computer inventory of the Federal Government.

--Government-wide management of software--to determine ways and means of improving the Government's position with respect to the heavy investment being made in software activities and to find ways to eliminate some of the duplication of effort which currently exists in the field.

--interrelationship of computer systems with communication systems--to inquire into the entire area of management of computers and related communication systems on a Government-wide basis.

--use of computer techniques to audit computer-based systems--to assist all Government auditing organizations to improve programs which involve the auditing of computer-based systems.

Within the next 6 months, we shall perform some 20 surveys and reviews of certain aspects of ADP activities having Government-wide implications. We have scheduled, in addition to our current review of GSA's Government-wide mangement information system for data processing previously referred to, reviews of the utilization of ADP equipment; the acquisition of general purpose ADP equipment;

the procurement of general-use program packages; the procurement of punch card equipment; and the adequacy of controls over computerized systems. We shall also explore certain other areas of cost reduction potential such as the feasibility of rehabilitating instrumentation tape and the multiyear leasing of ADP equipment as opposed to short-term leasing. We shall inquire into the actions presently being taken to implement the "single purchaser" concepts included in Public Law 89-306, dated October 1965.

In the civil agencies, we have planned some 20 additional surveys and reviews directed primarily to evaluation of specific ADP systems used by individual Government agencies or their contractors. Such work will include inquiry into the acquisition and utilization of particular computer systems, the effectiveness of computer applications, management controls of computer uses, and computerized management information systems.

In the defense area, our efforts have been directed toward specific requests of the House Committee on Appropriations involving primarily the degree of management control exercised over costly computer systems within the Department of Defense. During the past 2-1/2 years we have inquired into the practices followed by the military services in acquiring and installing new automatic data processing equipment.

We have suggested minimum criteria which we believe should be followed in the advance planning of computer system projects. We pointed out the need to minimize the development of management systems by one service without regard to interservice compatibility or the relationship of systems. We have issued reports on the Army's Combat Service Support System, on its Tactical Fire Direction System, on its centralization of Supply Management Operations System, and on the need to improve its Tank Automotive Command's Supply Management System. We have in process a review of the need, requirements, and implementation features of two large acquisitions: the Worldwide Military Command and Control System and the Air Force Advanced Logistic System, as well as a report covering the management of Department of Defense automatic data processing systems. We also plan to perform reviews of the Defense Supply Agency's Standard Automated Materiel Management System and the Navy's Integrated Command/Management Information System.

In support of international activities, we plan a review of the operations of the Regional Data Processing Center at Paris, France.

In summary, our practice over the past several years and our plans for the foreseeable future are to perform selected reviews of the planning for and installation of computers; controls over computer operations; the acquisition and utilization, of computers, peripheral equipment, and software; and the effectiveness of computers as they support program operations. We shall probe for areas in which

cost economies, by maximizing competition or improving operations, are possible and shall perform reviews to promote effective management through the use of computers or other means. We shall approach this both at individual agencies and on a Government-wide basis. We have long recognized that the expanding use of computers warrants our continued attention.

Reporting systems applicable to computer inventories and computer utilization, as well as the promotion of competition in procurement of ADP equipment, software, and services, will continue to be high among the areas of our audit emphasis.

In conclusion, Mr. Chairman, the results of our reviews support your Committee recommendation that GSA should make it possible for smaller manufacturers of ADP equipment to furnish part of the Government's requirements. Specifications should not be designed around the products of certain companies, which would have the effect of eliminating competition and stifling the incentive of smaller manufacturers.

As you know, your recommendation that GSA take action to accomplish this desirable objective fits in with GSA's responsibilities in the field of ADP equipment procurements as established by law.

In a Comptroller General decision of November 21, 1967 (B-151204) (B-157587), we held that, under section 111 of the Federal Property and Administrative Services Act of 1949, as amended by Public Law 89-306, the General Services Administration had exclusive authority to procure all general-purpose ADP equipment and related supplies and equipment for use by all Government agencies.

This concludes our statement. We shall be pleased to discuss any of these matters in further detail or to answer any questions the Subcommittee may have on our statement.