

The cost comparisons with respect to 16 of the 18 machine models studied during our review indicate potential savings of approximately \$148 million over a 5-year period (see exhibit A). The 16 different electronic machine models used for our study represent 523 of the approximately 1,000 electronic data processing systems installed or planned for installation on a lease basis by June 30, 1963. For additional use of the 523 machines after 5 years, there would be further savings at the rate of over \$100 million annually.

The general conclusions which we have reached on the basis of our study are as follows:

1. If possible and substantial savings are to be fully realized, management decisions as to whether data processing equipment should be purchased or leased should be made from the standpoint of advantage to the Government as a whole and not from the standpoint of the individual using agencies.
2. Because of the substantial savings that may be available, all decisions to acquire the use of data processing equipment should be supported by specific computations showing the comparative costs of acquiring by lease and by purchase.
3. Where purchasing is financially advantageous, the realizable savings increase in proportion with the increase in utilization of the machines.
4. The savings possible through purchasing are more pronounced for the larger and more complex machine systems.
5. While significant savings may be realizable in many instances through purchasing rather than leasing, for some types of electromechanical equipment, it is more advantageous financially to lease rather than to purchase.

With the present system of decentralized management in the Federal Government under which each agency makes its own decisions as to whether the use of data processing equipment should be acquired by lease or by purchase, there is no effective coordinating machinery at work to give consideration to these alternatives from the standpoint of benefit to the Government as a whole. Because of the very substantial financial savings that can be realized through more extensive purchasing of such equipment and the related need for directing and coordinating its utilization throughout the Government, we are recommending to the President of the United States that a central management office suitably empowered to perform these functions be established in his organization. We are convinced that the establishment of such an office is the only practicable way to provide the kind of management that will make possible the realization of savings of hundreds of millions of dollars in the years to come.

EXPANDING USE OF ELECTRONIC DATA PROCESSING SYSTEMS IN THE FEDERAL GOVERNMENT

In our report to the Congress on "Review of Automatic Data Processing Developments in the Federal Government" (B-115369, Dec. 30, 1960), we stated that there had been a continuous, upward trend in both the quantity and complexity of electronic data processing equipment being used in Government operations. This trend continues. New areas of computer use are being pioneered in such fields as automatic retrieval of information and in communication systems where electronic computers seem destined to play an increasing role. Also, the application of many new scientific management techniques depends on computers to process the enormous number of calculations that are required to carry out such advanced techniques.

EVOLUTION OF EQUIPMENT

During fiscal year 1960, Federal agencies began receiving deliveries of the more advanced solid-state equipment. This new equipment was brought about through the development of the transistor and other solid-state devices which are used in place of the vacuum tube found in earlier computer models. Transistors are but a fraction of the size of vacuum tubes, require less power, generate less heat, and are generally more reliable. The diminutive size of transistors has led to miniaturization of circuitry so that whole circuits can be placed on small card forms. In contrast to the vacuum tube systems, the solid-state systems are more compact, require less floor space and reinforced flooring, require less special power and air-conditioning facilities, are more easily maintained, and operate at faster speeds and with greater versatility.