OC-M-70-157

1 2 MAR 1970

MEMORANDUM FOR: DDS Information Processing Coordinator

SUBJECT   : Savings Through the Use of Computers

REFERENCE   : DD/S 70-0672 (16 February 1970)

1. In response to the reference, attached herewith is a series of Office of Communications' component reports which show how this office has saved personnel positions, handled increased workloads, or used computers to accomplish work tasks that would otherwise be beyond our capability to perform.

2. Should questions arise related to the attachments to this memorandum, contact the undersigned for more detailed information.

SIGNED

25X1A

Executive Assistant
Office of Communications

Attachments: (6)
1 - OC-A Report
2 - OC-CS Report
25X1A   3 - OC-████ Report
4 - OC-CCD Report
5 - OC-SCD Report
6 - OC-SPD Report

Distribution:
Orig & 2 - DDS/IPC w/atts.
        1 - OC-RMS w/o atts.
        1 - OC-EXA Chrono w/o atts.
        (1)- OC-EXA Studies and Statistics w/atts.

25X1A ORIG:OC-EXA ████████ :djd:12 March 1970

GROUP 1
Excluded from automatic
downgrading and
declassification

SECRET

OC ADMINISTRATION STAFF
Savings Through the Use of Computers

1. The use of computers is best shown by ability of OC-A to absorb a substantial increase in workload in administering Communications personnel over the past ten years without an increase in the Administration Staff's Table of Organization ██████████████████. During this period, 25X9 management has become more sophisticated and cost conscious, resulting in more reports and reviews. The Administration Staff could not have absorbed the increased workload except through the use of ADP equipment. Examples of the assistance computers have given us follow: We are unable to identify the manpower used to perform these functions manually prior to the use of computers. As a result we have estimated the manpower savings.

Personnel:

   a. Machine runs 140C and 209A - Strength Reports - 16 manhours per month.

   b. (1) Machine run 144E - Headroom Reporting - is accomplished entirely from this run - 8 manhours per month.

   (2) Provides SC monthly comparison of career service on-duty strength and career service grade authorization. And as a result the Development Complement allocation report is no longer necessary - 2 manhours per month.

   c. Machine run 145A - SC positions by panel by grade - eliminates time spent on stroke tallying to determine points - 4 manhours per month.

   d. Machine run 184A - Fitness Reports - this run permits monitoring of report submission without maintaining a tickler file - 40 manhours per month.

   e. Other runs received are the 222C - not to exceed roster (people on LWOP and on Personnel Rank Assignments), Education Listing, Personnel Status Reports and others save time because manual record keeping is eliminated.

Personnel Total - 70 manhours per month

Budget & Fiscal.......

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Budget & Fiscal:

a. Obligation Status Report - Eliminated manual postings and now permits more time to do a better analysis of unliquidated obligation - 33 manhours per month.

b. Automated Budget Program - Develops budget data in various arrays at a sub-object class fan account level, which is a great improvement - 7 manhours per month.

c. A follow-on gives us a monthly trend report, which enables a quick review of our financial position - 4 manhours per month.

Budget Total - 44 manhours per month

Property Recording:

This system today is 50 percent manual and 50 percent automated. The manual system consists of recording encumbrances and issues to determine the available balance of PRA. The issues are recorded through the machine system and recorded manually in total against the encumbrances. If the trend continues to convert Type 1 stations to Type 2 systems, the additional workload cannot be absorbed with the present number of personnel involved in the recording of obligations and property data. At the present time, the workload of this section is at the maximum and any additional increase will necessitate increasing the staff by one additional employee.

2. In summary, the OC Administration Staff reports an approximate saving of 114 manhours per month by the use of ADP reports.

Category B & C

2

SECRET

OC COMMUNICATIONS SECURITY STAFF
Savings Through the Use of Computers

The Communications Security Staff is presently undertaking two continuing projects utilizing computers. These two projects relate to the EMSEC inventory of electrical office equipment (320 manhours) and to the production of several voice codes (3,000 manhours). This estimated increased workload of 3,320 manhours has been assumed without an increase in personnel. These projects could be done manually, but would require two additional people on a full-time basis.

Category B & C

SECRET

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25X1A

OC █████████████████████

Savings Through the Use of Computers

1. Personnel Savings:

Activation of MAX-II permitted a reduction of five positions below the level previously required to operate a manual torn tape relay facility. These positions, however, were shifted to the Facilities Control area where functions increased with the addition of circuitry and installation of new communications systems. Additionally, eleven circuits which were previously operated manually in the Project Terminal Facility and Special Activities Facility were also reterminated in MAX, freeing personnel devoted to these manual functions for other duties. Since these changes were not full time functions in either facility (PTF or SAF), no personnel reduction was possible; however, the personnel time previously committed to these functions is being used for other purposes in the message preparation, dissemination, and technical control fields, thus virtually eliminating both overtime and the need to request an increase in the T/O to provide adequate coverage in these areas.

2. Assumption of Heavier Workload:

The MAX Facility, working with a smaller personnel complement, is performing the relay function for 11 circuits beyond those which were handled in the old manual torn tape relay facility. Further, the capability exists in the MAX II repertoire to further increase circuit termination by more than 50% (together with a comparable increase in traffic volumes) but with significantly smaller increases in personnel complements, e.g., probably not more than 10-15% for the relay function.

3. Things We Would Otherwise be Unable to Do:

a. The generation of error reports denoting on a circuit-by-circuit basis the number of messages requiring human corrective action due to errors in preparation by connected stations/terminals permits timely corrective action to be taken in reducing the percentage of error, resulting in an increase in the operating efficiency of the network.

b. An increase in the security of message handling on a need-to-know basis in that the normal message need not be viewed by anyone during the relay process.

c. Almost complete elimination of message backlogs in the relay process, thereby significantly reducing the time loss in message handling for the relay process.

d. The possibility of missent messages has been virtually eliminated.

SECRET

e. Permits the effective utilization of high-speed transmission paths (a technique which was not practicable with manual operation), improving the economy of operation by reduction of cryptographic equipment and terminal gear.

f. Circuit and volume statistics for any given period of time, which previously had to be accumulated manually, are now generated automatically on request.

g. The amount of paper tape in use in the Signal Center is significantly reduced, with the attendant reduction in the storage and burn requirement as well as a possible fire hazard.

h. Eliminates the costly and time-consuming error factor resulting from the inevitable percentage of mis-handled messages in a manual torn tape relay process.

Attachment:
  MAX I, II & III Savings

Category A-B-C

2

25X1A   Attachment to OC ███████████████████

Savings Through the Use of Computers

MAX-I

The installation of MAX-I at ████████████ in FY-1965 permitted the
handling of a 50% increase in the traffic work load by FY-1969 without
the need for additional personnel. Using FY-1965 (pre-MAX) productivity
factors per man, the traffic increase represents the equivalent of approx-
imately 28 more personnel. Since no personnel were added, the figure of
28 positions can be regarded as savings attributable to the automation of
the facility. During the past two years BALPA and OPRED reductions taken
from the base at ████████████████████████████
authorized in 1966 to ███ currently authorized for FY-1970. The combined
traffic increases and the personnel reductions could not have been handled
without the computer.   (Category A-B-C)

25X1A (at right, top)
25X1A
25X1A

MAX-II

These computer-based, processor-controlled, store-and-forward switch-
ing and relay systems perform functions related to inter-station message
communication traffic. MAX-II is located in and serves the Headquarters
complex. (See ███ for savings or work benefits.) MAX II is programmed
and connected for mutual contingency support.   (Category A-B-C)

25X1A

MAX-III

1. MAX-III is located at the ████████████████████████████
MAX-III is programmed and connected with MAX-II for mutual contingency support.
On this basis, if MAX-III were to experience failure, MAX-II would take over
MAX-III's work and process the traffic.

25X1A (at right)

2. The Computer Message Switching System has increased the capacity of
the Relay Station to operate a greater number of circuits with increased
volumes without additional manpower. The system has the capacity to cope
with the message relay workload more efficiently with improved service to the
respective tributary stations. The flow of traffic to the tributary is even
and the traffic is transmitted in order of precedence on a first-in/first-out
basis. Additionally, the tributary station has a limited ability of being
self-served, i.e., the tributary operator can directly interrogate the proces-
sor and receive message re-runs automatically; can start/stop flow of traffic
to himself as his individual needs dictate.

3. Although manpower at the relay has not been reduced, the switch per-
mits management to assign (1) additional operating personnel to control
positions--thus directly improving service to the customer, and (2) personnel
to training in new clandestine and staff equipment and techniques.
                                                  (Category A-B-C)
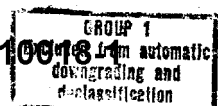
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OC STAFF COMMUNICATIONS DIVISION
Savings Through the Use of Computers

Savings accruing to OC-SCD and ultimately to the Agency through the use of computers are as follows:

a. Saved Positions:

CATRAN - (Cable Traffic Analysis) - A computer-based program for the treatment of management-oriented statistics relative to the operation of the Agency's communications system. The use of computers in the management analysis of our world-wide communications activity has resulted in a savings of 1500 manhours per year. The saved manhours are applied within the Staff Communications Division to other system operation requirements.

b. Assumption of heavier workload without increased number of people:

BYCEPA - (OCS support to OC's Communication Equipment Programming Activity) - Storage and selective retrieval of data related to the issue, installation, and use of non-expendable equipment. These programs have made possible our ability to handle a 150% increase in workload at Headquarters level without the necessity of requesting additional manpower, and has enabled us to standardize informational and reporting methods and procedures, thus making the data base more accurate and meaningful. This, in turn, leads to upgrading the effectiveness of our equipment programming effort.

c. Doing otherwise impossible things:

(1) DATACOM

(a) There are two UNIVAC 9300 systems and one UNIVAC 1004 system installed in OC-DO/DATACOM. These systems are used as data communications terminals to:

(1) Transmit and receive data in the form of cards, magnetic tapes, paper tapes, and/or page copy to and from [REDACTED] foreign field stations.

25X1A

(2) Serve as a small, temporary, store-and-forward data switch between the DD/S&T network stations and the OCS IBM-360 systems.

(3) Serve as a remote job entry to the IBM-360 systems allowing DD/S&T to upgrade and retrieve data from resident programs.

(b) The types of data that the network processes and the time elements, plus the accuracy needed in the integrity of the data, makes it necessary that a data communications terminal of the UNIVAC 9300/1004 type be utilized. The data could not be processed manually or with conventional communications terminal gear.

(c) The benefits derived from the use of the data terminal gear include the capability to provide the customer with a fast and secure transmission in a machine language that he can further manipulate in larger data processing systems. Some DD/S&T projects require real-time data communications support available only through the use of data terminal equipment.

(2) PDP-8

This computer, installed, maintained and operated exclusively within the SCD environment, performs digital engineering functions related to high-speed mathematical calculations as well as design and analysis of components and assemblies. Its use obviates the necessity to procure about $35,000 worth of complex test and instrumentation equipment, and enables us to simulate equipment interface systems which are otherwise very expensive or not readily available.

Category A-B-C

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25X1D

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SCD ✗
SPD ✗
CCD ✗
OPS NONE
PCS ✓ NONE
R&D ✓ NONE
ADMIN ✗
CMS ✓ NONE
CS ✗
BUD