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19 JUN 1975

MEMORANDUM FOR: Deputy Director for Administration
VIA : Director of Joint Computer Support
SUBJECT : Amendment of Office of Logistics (OL) Fiscal
Year 1977 Program Plan - Graphics and Visual
Aids Computer-Based Production Equipment

1. Action Requested: This memorandum contains in paragraph 4 a recommendation for your approval.

2. Background:

a. The Graphic and Visual Aids Staff (G&VAS) of the Printing and Photography Division (P&PD), Office of Logistics (OL), consisting of a staff [redacted] is unable to meet total demands for support that are being levied by Agency components. At the present time, approximately 50 percent of the requests for services are being rejected; and, even with acceptance of only 50 percent, G&VAS still carries a 6-month backlog. Limited manpower capabilities have forced G&VAS unilaterally to assign priorities, generally based on negotiation, rank, and interpersonal relationships, for acceptance or rejection of requests and for production scheduling. Rejection of requests or slow response time results in mutually unsatisfactory and often traumatic consequences to the customers and to G&VAS. Additionally, this has forced operating components to commit a substantial level of manpower to graphic activity, including the maintenance of at least nine other art centers throughout the Agency. Two of these are in DD/I, three in DD/A, three in DD/S&T, and one in the IC Staff employing between [redacted] people.

b. In absence of ability, or indeed the desirability, to increase the allocation of the Agency's declining manpower resources to artwork functions, OL/P&PD has been exploring the feasibility of automating the production of artwork. A computer-based system for production of artwork has recently been identified which is being marketed by the General Electric Company under the trade name Genigraphics.

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c. The Genigraphics system contains stock designs in computer storage. In addition to the stock designs--letters, numbers, symbols, logos, cartoons, scenes, etc.--a trained operator may input graphics of his preference. Then by manipulating controls that consist of a keyboard and a pair of knobs and dials, the operator can edit, crop, magnify, rearrange, distort, change color, and perform electronic wizardry on the image displayed on a television monitor. When the operator is satisfied, the push of a button transfers the image on the screen to a 35mm slide and/or stores the data on magnetic tape. The data may subsequently be quickly, efficiently, and conveniently updated through classical computer-based methods.

d. The computer generates images through the computerized juxtaposition of lines, slopes, rectangles, circles, and arcs. This base enables the system to be particularly efficient in the automation and composition of pie charts, bar charts, area charts, and other graphics composited from the basic geometric and alphanumeric elements. An artist averages about one simple bar chart per hour. Genigraphics averages about 18 similar charts per hour. Once the format is established, data are entered on punched cards and the system produces finished slides.

e. The minimum system consists of a control console, image processing equipment, a display monitor, and a minicomputer. However, optional enhancements include higher digital storage capacity, remote terminal and control systems, output in addition to the 35mm slides (such as color negatives), multiterminals, multicomputer systems (one dedicated to console operations and one to slide production), storage and generation of more complex data, and interface with other computer-based systems.

f. Evaluation by OL/P&PD of the Genigraphics system indicates not only the potential for increasing manpower productivity but also for improvements in artwork that can only be realized through mechanization.

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g. Presently, the production of artwork is manual and is labor intensive. It is estimated that approximately 50 percent of the predictable and recurring work processed by G&VAS could be processed on the Genographics system. The time savings are dependent on a multitude of isolated and interdependent factors, but are estimated at 18 to 1. Assuming the accomplishment of the same workload as the shop now processes with six artists, average manpower savings per year could be 2.85 man-years or \$49,000 a year at current salary rates. Conversely, this offers the potential for increased manpower productivity of 2.85 man-years.

h. Peak workload situations often occur where virtually all the artist's time is prioritized to the manual effort of updating existing organizational and statistical charts. OL/P&PD estimates .5 man-years at a cost of \$8,000 are now committed to these efforts. The most recent example representing a manual, routine, and machine-applicable work effort was (is) G&VAS' support for the Presidential and Congressional committees. A computerized system would enable G&VAS to meet these demands much more quickly while concurrently maintaining productivity on work which is not readily processed through automated methods.

i. The system enables fast response to priority requests. The DCI, for example, could give general direction and ideas to an artist; and, within a few hours, preliminary briefing material would be available on slides, or alternatively remotely displayed in the DCI office area on a video recorder. The DCI could approve or request changes. The changes could be made, and revised material would be available for remote video display in minutes. A remote communications option would enable the DCI to access and review stored briefing material and, within minutes, have available revised and updated material.

j. In summary, automation of artwork, particularly statistical-type briefing material, would:

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(1) Increase productivity of skilled artists by freeing them from the tedious and mundane work of creating and correcting statistical-based briefing material;

(2) Provide capability for providing operating component customers with more graphics and higher quality work;

(3) Provide an efficient method to meet peak workloads and short deadlines; and

(4) Extend the artist's capability to quickly create custom-designed artwork and special effects.

k. In addition to these summarized advantages, a computer-based system in G&VAS also offers the potential for significant manpower savings in other Agency art centers by providing a facility for production of centralized computer-based artwork.

3. Staff Position:

a. Genigraphics is the only known computer-based artwork system, other than animation-type systems, on the market. Preliminary analysis of the demonstrated power, versatility, and flexibility of the Genigraphics system indicates that, with the enhancements described in subparagraph 2e, it will meet Agency and OL/P&PD requirements. Initially, it is contemplated that procurement would include the minimum system and at least the options for higher digital storage capacity, remote terminal and control systems, and output in addition to the 35mm (color negatives, etc.), at a cost between \$360,000 and \$400,000. Estimating for G&VAS alone a manpower savings or the converse increase in manpower productivity valued at \$57,000 a year at current salary rates, the cost amortization for a \$400,000 system would be about 7 years.

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b. Due to the recent identification of the Genographics system, OL made no provision for procurement of graphics and visual aids computer-based production equipment in either the FY 1976 Operating Plan or the FY 1977 Program Plan. We are now assured that such a system is available and is responsive to Agency requirements.

4. Recommendation: Your approval is requested to amend the Program Plan for FY 1977 to include provision for procurement of the Genographics or a similar system in the amount of \$400,000.

/s/ Michael J. Malanick
Michael J. Malanick
Director of Logistics

APPROVED: _____

DISAPPROVED: _____

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C/P&PD: vh (18 June 1975)

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