

NSIB/DCI

Recommendation
#168

CODIB which is to be replaced by the Intelligence INFO HANDLING Comm.

THE WHITE HOUSE
WASHINGTON

CORNS' COMMITTEE

SECRET

July 15, 1965

MEMORANDUM FOR THE DIRECTOR OF CENTRAL INTELLIGENCE

SUBJECT: U. S. Intelligence Community Capabilities
for the Handling of Intelligence Information

Enclosed herewith is a report and recommendations which the President's Foreign Intelligence Advisory Board submitted to the President under date of June 15, 1965.

The President has approved the three recommendations contained in the report.

It is requested that Recommendations 1 and 2 of the report be carried out by the intelligence community under your coordination, and that you submit to this office and to the President's Board by October 1, 1965, a progress report reflecting the actions taken.

With respect to Recommendation No. 3, this office will look to the President's Foreign Intelligence Advisory Board and the Special Assistant to the President for Science and Technology, for periodic reports concerning the activities of the Panel to be established pursuant to that recommendation. To assure proper linkage of the Panel with the broader interests of the Bureau of the Budget in automatic data-processing generally, it is suggested that the Director of the Bureau of the Budget designate a representative of the Bureau to maintain liaison with the Panel.

/s/
McGeorge Bundy

Enclosure

- cc: The Secretary of State ✓
- The Secretary of Defense ✓
- The Director, Bureau of the Budget
- The Special Assistant to the President for Science and Technology
- The Chairman, President's Foreign Intelligence Advisory Board

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THE WHITE HOUSE

WASHINGTON

PRESIDENT'S FOREIGN INTELLIGENCE ADVISORY BOARD

June 15, 1965

MEMORANDUM FOR THE PRESIDENT

SUBJECT: U. S. Intelligence Community Capabilities
for the Handling of Intelligence Information

This report is based on a study made by the Communications Panel of the President's Foreign Intelligence Advisory Board. The study included consultations with knowledgeable representatives of the departments and agencies making up the U. S. intelligence community, and briefings supplied by the Committee on Documentation of the United States Intelligence Board (USIB) which, under the chairmanship of the Director of Central Intelligence, has been pursuing the current exercise known as SCIPS (Staff for Community Information Processing Study).

Our Panel's study leads us to the following conclusions and resultant recommendations for action in an area of U. S. intelligence activities which we consider to have a most important bearing on the national defense and security.

The principal objective of these recommendations is the prompt initiation by the U. S. intelligence community of positive steps toward the achievement of an improved capability for the efficient storage and retrieval of the intelligence product, through an appropriate combination of machine and human techniques for the management and control of the massive volume of intelligence information involved.

CONCLUSIONS:

1. Information-handling methods occupy a pervasive position in the whole administrative framework of the U. S. intelligence community. Present methods for handling the huge quantity of intelligence information, which is generated from day-to-day by a vast array of collection resources, are a determining factor in the effectiveness of our entire intelligence system to meet national security needs at policy and command levels of the Government.

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2. The systems problems involved are so massive and in many cases so expensive, in both money and human resources, that customary routines have often been rigidly embodied and retained. The systems problems of intelligence information access will continue to be of the most difficult type, heightening the importance of great improvements in the depth of understanding and of skills in tackling the wide variety of such problems which confront all levels of Government personnel concerned with access to the national intelligence base.

3. There is a necessary relationship of the United States Intelligence Board SCIPS study to the existing practices of information handling which are variously applied within the respective agencies engaged in the U. S. intelligence effort, particularly in regard to such matters as file format and file control methods. However, the present great demands for effective handling of information within the intelligence community require that additional actions go forward concurrently with those presently approved by the United States Intelligence Board.

4. The additional actions which are required provide the only foreseeable means of extending to the massive operations of the intelligence community the advantages of high-speed machine processing of both numerical and non-numerical information in a way which has already been applied in such specific areas of intelligence as cryptanalysis. Unless strong and immediate actions are undertaken in this area, there is danger that the efficiency of the production and dissemination of intelligence within the intelligence community will decline progressively, and that the already high costs involved will climb so steeply as to jeopardize national support of the broad intelligence effort.

5. Positive action is required now to supplement the longer-range Task Force projects being pursued by the United States Intelligence Board. A large share of the needed technical support will come from automatic data-processing machinery and methods, and from the resources of modern science and technology which are presently available to assist in meeting intelligence community needs for document handling all the way from initial production to final distribution. The need for new intelligence community actions for the handling and routine processing of intelligence information is not regarded as a direct consequence of the rise of the electronic computer. The need for such actions is more deeply the result of the growth of the intelligence community effort and the greater growth of the information which it must handle.

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The role of the computer is in offering a new way to assist in the reduction of greatly increasing problems in the intelligence field. The existence of these problems and the need to do things about them would have confronted the intelligence community in any event.

6. All the technical areas which must contribute to the problems of handling intelligence information are advancing very rapidly at present. The intelligence community, with its strong nucleus concerned with the use of computers in cryptanalytic and communications operations, has a real advantage in undertaking early and skillful planning in the information-handling area. (It would, however, be a mistake to assume that this experience can be easily applied to the use of computers in the handling of intelligence information.) The required planning and actions can be not only of great value to the intelligence community, but can be a broad and effective stimulus to improvement in other Federal Government computer operations whose importance is reflected in the President's recent message to the Congress on the use of automatic data-processing equipment.

7. The problems of the intelligence community in connection with information access and retrieval include, but are not restricted to, those common to all who must maintain very large bodies of information in accessible form. This is even true in the handling of information from unclassified sources. The importance of negative information, and of patterns of information, requires that access to intelligence information produce a completeness of response beyond that which is expected from many large files of stored information. Like statistics, intelligence cannot be satisfied with the highly anecdotal, but requires that all available items of information are allowed to contribute their part to the final summary or other intelligence product.

8. As a consequence of intelligence community requirements for high recall, the mechanized and automated means of access to many sorts of intelligence files cannot be required to meet simultaneously, rigid requirements as to relevance. Accordingly for some time to come the mode of gaining access to intelligence information will be through combined machine-human systems that will seek the machine retrieval of stored intelligence information in order that its relevance may be established by human examination. It is this combined machine-human factor which generates systems problems of great difficulty and dimensions.

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9. Ways and means must be sought by the intelligence community to enlarge the proficiency of personnel presently engaged in information-handling activities, either through (a) the retraining of personnel so engaged, or (b) the addition of new personnel having experience with systems work, preferably (but not necessarily) in the information sciences and technologies.

10. The scope of the intelligence community's problems in the information-handling field is such that it requires the guidance of a Panel of Technical Experts in the development of methods and facilities for information-handling and access.

11. In the area of experimental approaches to the adaptation of machine processing to the storage and retrieval of intelligence information, an encouraging beginning has been made within the National Security Agency where the Technical Information Processing System (TIPS) study is presently under way. This experiment, although on a limited scale and confined to a selected number of organizational units and information files within the National Security Agency, is producing important lessons for the achievement of a realistic system for the interrogation of a computer by remote users requiring access to a common information base.

RECOMMENDATIONS:

We recommend that the following actions be undertaken immediately within the intelligence community:

Recommendation No. 1: That selected personnel among the departments and agencies making up the U. S. intelligence community be provided specialized training and advanced studies at a university center or centers where systems thinking and systems skills are understood and imparted, and which at the same time possess adequate background in conventional bibliography and other more classical approaches to literature and information management.

An example of the type of specialized training center we have in mind is the Library School at the University of Chicago, headed by Dean Don W. Swanson. His background in mathematics and physical sciences, and his current emphasis on increased systems thinking in library education, accent the combination of educational capabilities and background which are considered necessary for purposes of meeting the objective of this recommendation.

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Arrangements involving this and perhaps other institutions might be made so that both senior administrative personnel and more junior operating people could acquire new abilities and attitudes which in the times ahead will be demanded in the discharging of responsibilities for the enormous file and distribution systems of the intelligence community.

Recommendation No. 2: That the Technical Information Processing System (TIPS) project, now under way within the National Security Agency, be expanded to include participation by other member agencies of the intelligence community in an experimental operating system constituting a first step toward interagency (and interbuilding) information handling. Since results should be sought from the experiment as promptly as feasible, the participation of other agencies should be achieved by September of 1965; the capability for extensive handling of the Russian biography problem should be available in the community-wide system by the summer of 1966; and by the summer of 1967 it should be possible to exchange outputs from various mechanized sources in the fashion pioneered by the TIPS project.

[Only through such experimental operational trials can the intelligence community come to grips with the wide variety of program problems involved, including those of security compartmentation, the encryption of communications between the computer information base and the user locations, and other problems. In order to make such a trial effective, it may be necessary to expand the scope of the information maintained in the TIPS system and, if so, this should be done with caution as to the total amount of material thus added. The intention should be to establish a system that will in fact be used by workers in at least a few agencies as a better way to meet day-to-day tasks; however, the system should be regarded as experimental and there should be no attempt to insure that in its experimental form its operation can be economically justified.]

Recommendation No. 3: That there be established a Panel, under the joint sponsorship of the Special Assistant to the President for Science and Technology and the President's Foreign Intelligence Advisory Board, having responsibility for: (a) providing guidance to the intelligence community in the forwarding of methods and facilities for information handling and access;

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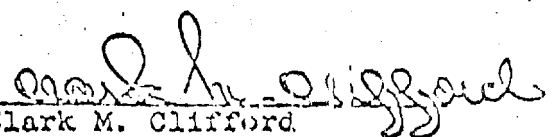
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(b) evaluating in technical terms the true meaning of the enormous and somewhat heterogeneous growth of the intelligence community's information pool.

[This recommended action is an urgent consequence of the USIB's Community Information Processing Study involving actions which, although helpful, are far from meeting the needs accented by the study. It is emphasized that the proposed panel of technical experts would not be tasked with the too obvious assignment of simply applying modern machine methods to the existing, specialized, and rigidly-maintained activities of processing and distributing information within the intelligence community. The panel would have the over-all task of guiding the necessarily large, and presently ignored, planning for the realistic and long-term development of mechanized facilities for the processing of information in the manifold forms in which it is encountered within the intelligence community. Thus, the composition of the panel and its individual skills should permit a concurrent approach to the overwhelming volumes of photographic, electrical and typographical material with which the intelligence system is presently flooded. It is noted that in such parts of the Government as the Bureau of the Budget, and in the Departments of State and Defense, attempts are being made to introduce automatic data-processing and information-handling systems into complex Government operations -- and the panel of technical experts could provide invaluable linkage among these detached efforts which now find some coherence only through the science and technical information people in the Office of Science and Technology and the Federal Council for Science and Technology. Finally, it is evident that the concept of the range of activities of the expert panel includes not only drawing on all the information-handling programs and activities in other parts of the Government, but also being available for over-all counsel in ways which might be especially useful to the Bureau of the Budget in understanding the role of mechanized information handling throughout the Executive Branch of the Government.]

For the Board


Clark M. Clifford
Chairman

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