COMPUTER SCIENCE & ENGINEERING BOARD

16-17 September 1970

ATTENDENCE LIST

BOARD MEMBERS

ATTENDEES

Dr. Walter S. Baer
Dr. Launor F. Carter
Prof. Wesley A. Clark
Dr. Sidney Fernbach
Dr. Martin Greenberger
Mr. Jerrier Haddad
Mr. William Knox
Mr. William L. Lurie
Mr. Roy Nutt
Prof. Anthony G. Oettinger, Chairman
Mr. Kenneth Olsen
Dr. Alan F. Westin
Dr. Ronald Wigington

Dr. John R. Pierce (16 Sept. only)

ABSENTEES

Dr. J. C. R. Licklider
Mr. John R. Meyer
Prof. W. F. Miller
Dr. Alan J. Perlis
Prof. J. B. Rosser

CONSULTANTS

Mr. Joel Cohen
Mr. John Griffith
Dr. Bernhard Romberg

STAFF

Mr. Warren C. House
Mr. Jack F. Kettler

Executive Session

NATIONAL ACADEMY OF SCIENCES

COMPUTER SCIENCE & ENGINEERING BOARD
2101 CONSTITUTION AVENUE
WASHINGTON, D. C. 20418

Revised 10 September 1970

COMPUTER SCIENCE AND ENGINEERING BOARD AGENDA

Executive Session 16 September 1970

Joseph Henry Building

7:00 P.M. Room 600A

7:00 p.m. Welcome and opening remarks by the Chairman

7:05 p.m. Tentative negotiations with Mr. Herman Pollack, Director, International Scientific & Technological Affairs, U.S. Department of State, regarding possible support to that office through making a study of computers and their relation to foreign affairs of the U.S.
The Chairman

7:20 p.m. Progress report on the Information Systems Panel work under the contract with the Council of Library Resources
Dr. Ronald Wigington, Panel Chairman

7:35 p.m. Review of the Planning Group's report to the Board outlining proposed new mission, functions, responsibilities and working program of the Special CS&E Panel on Computer Technology as a National Resource
Dr. Donald Ling, Panel Chairman, or The Chairman

7:50 p.m. Status report on the Special CS&E Panel on International Computer Activities and a summary of international computer activities of interest to the Board
The Chairman and Mr. Isaac Auerbach, Chairman Designate of the subject Panel

8:05 p.m. Brief, hopefully heartfelt, summary of life out there in his part of the military-industrial-university complex
Dr. Barkley Rosser

8:20 p.m. Summary of tentative impressions and conclusions arising from site visits and special briefings completed by the Data Bank Survey Team, with description of the Team's two-day site visit on September 17-18 with the U.S. Attorney General and selected Assistant Attorneys General
Dr. Alan Westin, Panel Chairman

Day Session

NATIONAL ACADEMY OF SCIENCES

COMPUTER SCIENCE & ENGINEERING BOARD
2101 CONSTITUTION AVENUE
WASHINGTON, D. C. 20418

Revised 10 September 1970

COMPUTER SCIENCE AND ENGINEERING BOARD AGENDA

Day Session 17 September 1970

Joseph Henry Building

9:00 A.M. Room 600A

9:00 a.m.	Carry-over remarks from the evening session	The Chairman
9:15 a.m.	The CATV-New York Caper, a technical assessment, with political overtones	The Chairman, Dr. Walter Baer
10:00 a.m.	Status report on the '70 Summer Conference on Computers and Higher Education at Woods Hole (the Oates report) and prospective developments	The Chairman
10:30 a.m.	Proposed disposition of the '69 Summer Conference on Computer Technology in Relation to Export matters	The Chairman
11:00 a.m.	Presentation regarding problems of computer security and probable developments therein as they relate to CS&E Board interests	Mr. Jerrier Haddad, Dr. Mike Feder Mr. Robert Courtney
12:30 p.m.	LUNCH	
1:00 p.m.	Status and disposition of the report on trends in the support of computing activities in universities and colleges by the computer industry (Miller report)	Dr. William Miller, The Chairman
1:05 p.m.	Remarks regarding significant developments in the area of sciences and technology in the government area	The Board
1:15 p.m.	Such other matters as may be brought before the Board	

Pollack Corresp.

9:00 ?

AUG 21 RECD

Xerox to (WH), JTK
JG

File: NAS 5/3

WH: The Pollack correspondence should form the basis for a September agenda item.

NATIONAL ACADEMY OF SCIENCES

OFFICE OF THE PRESIDENT
2101 CONSTITUTION AVENUE
WASHINGTON, D. C. 20418

August 12, 1970

Dr. Anthony Oettinger
Aiken Computation Laboratory
Harvard University
Cambridge, Massachusetts 02138

Dear Tony:

I was pleased to see the correspondence between you and Herman Pollack with respect to the development of a useful relationship in which the Department of State would have an enhanced understanding of how the state of the computer art is relevant to foreign policy considerations. Please do go forward with the projected discussions and keep me informed as they occur.

Sincerely yours,

Philip Handler
President

NATIONAL ACADEMY OF SCIENCES
2101 CONSTITUTION AVENUE
WASHINGTON, D.C. 20418

5/3

7 August 1970

THONY G. OETTINGER, CHAIRMAN
MPUTER SCIENCE & ENGINEERING BOARD
KEN COMPUTATION LABORATORY
RVARD UNIVERSITY
MBRIDGE, MASSACHUSETTS 02138

Dr. Philip Handler, President
National Academy of Sciences
2101 Constitution Avenue
Washington, D. C. 20418

Dear Phil,

As you know the Computer Science and Engineering Board has had a long standing relationship concerning the export control problem with the State Department amongst others.

As the enclosed letter from Herman Pollack indicates, he now has an interest in working with us on somewhat broader problems.

We are now having some preliminary talks with him and if these prove fruitful my next step would be my customary one of appointing a planning group to recommend to the Board precisely what action, if any, it should take. I shall keep you abreast of any sifnificant developments as they arise and, in any case, review the matter with you in detail if and when we have a recommendation by a planning group.

Meanwhile, I would welcome any advice you or John Coleman care to offer me on this matter.

Sincerely yours,

Anthony G. Oettinger

AGO:chm

enclosure

cc: J. Coleman
W. House

Re:
NAS 5/3

DEPARTMENT OF STATE

Washington, D.C. 20520

July 15, 1970

Dear Tony:

I very much appreciated the opportunity to meet with the Export Panel of the NAS Computer Science and Engineering Board last week. I would like to pursue with you the suggestion we discussed briefly at that meeting -- that there be produced for the use of the policy level of the Department a document that would deal intelligibly with the impact of the computer upon foreign relations and its conduct. These are, I think, two separate subjects.

As you know I have been unable to find any useful material on these subjects, and especially any material organized in a form that would be useful here in the Department. It is possible that the computer experts have been so busily advancing their art they have not had time to reflect upon its impact upon foreign affairs. Then, too, perhaps the occasion to so reflect has not arisen. On the other hand, I know of no foreign affairs expert who has enough knowledge of the capabilities and uses to which computers are and will be put to deal adequately with this general subject.

I do feel it is important, and becoming urgent, that the Department come to understand more than it now does about the computer in its relation to foreign affairs, and that it begin the process of equipping itself with some in-house capability in this field.

Before I go on leave the middle of August I would welcome a chance to meet with you and such

Professor Anthony G. Oettinger,
Aiken Computation Laboratory,
Harvard University,
Cambridge, Massachusetts.

of your colleagues as you care to engage in a further discussion of this subject, with the objective of getting a project under way this fall. Would you have any time to get together between now and the middle of August?

All the best,

Sincerely,

Herman Pollack
Director
Bureau of International Scientific
and Technological Affairs

Ling Planning Report

NATIONAL ACADEMY OF SCIENCES

COMPUTER SCIENCE & ENGINEERING BOARD
2101 CONSTITUTION AVENUE
WASHINGTON, D. C. 20418

TO: Chairman, Computer Science and Engineering Board

FROM: D. P. Ling, Chairman, Computer Export Technology Panel

SUBJECT: The present note describes the proposed charter and the proposed initial program of the revised and expanded Computer Export Panel. The first part, on charter, is fairly general. The second part, on program, is more specific.

GENERAL.

I see the main function of the Computer Resources Panel as that of putting itself and maintaining itself in a position to give timely, informed and penetrating advice to interested agencies of the government on matters relating to computers and data processing -- computer systems (including technology and software) and computer utilization.

Its end functions would be served by responses to requests for assistance or advice by interested agencies or by unsolicited advice when such action appeared desirable. Its output would generally take the form of reports, solicited or self-generated, but might also include briefings or seminars.

The Panel is thought of as eclectic in nature and composition, requiring native expertness not only in the computer arts but also in matters of economics and the social and governmental sciences. The Panel's general modus operandi would be via the hearing, absorption and interpretation of briefings and testimony of informed and thoughtful people in government, industry, universities

and elsewhere on topics of relevance to its interests. Occasionally, but probably rarely, it might see the need for a small funded study of a special and detailed nature. More frequently it might constitute ad hoc internal-external study groups on a "volunteer" basis.

Since the relations of computers to military and strategic strength will remain prominent, the Panel membership should be (as it is now) cleared to the level of SECRET and certain panel members should be (as some are now) in a position to receive information at a higher security level.

While the Panel's interests are, as described above, suitably broad, its earlier more exclusive interest in the problems of export controls should remain as at least one of its central interests and as a unifying and focussing theme for its broader work.

THE PANEL PROGRAM.

So much for the generalities. The question now is what immediate program would serve best to give the Panel a basis for the broad understanding and expertness it has set as its goals? To understand what U.S. computer export policy should be to any foreign nation, a useful checklist would be

1. Effects on strategic and military posture of that nation vis-a-vis the U.S.
2. Effects on the general economic sophistication and strength of that nation.
3. Trade and commercial issues between U.S. and that nation or U.S. competitors and that nation.

4. Role that computer primacy of the U.S. can play in maintaining a position of world leadership, technologically and politically, for the U.S.

In order to get at these questions the Panel feels it will prove more fruitful to proceed from the particular to the general rather than the other way around. Consequently, it proposes two case studies, selected to be as diverse as possible, targeting Japan on the one hand and the USSR on the other. For Japan, item 1 is not of great current importance, while it is very important for the USSR. Item 3 is very important with respect to Japan, but has only a lopsided importance for the USSR.

As a special but important input - and one long in contemplation - Dr. Fernbach would undertake with the support of an ad hoc working group a comprehensive survey of the uses of computers and data processing in the U.S. Department Defense. This would be in line with his responsibilities as Chairman of the CS&E Data Bank Panel.

PANEL OUTPUT.

The output of the above program, in addition to a report on the special activity discussed above, would be two interim reports on the two cases, plus a "bridging" report drawing what conclusions can be drawn, making appropriate recommendations bearing on U.S. export policy, if any seem warranted and reasonably unambiguous, and pointing out further areas of required work for the Panel or for others.

I believe the likely time span for such a project to be no less than the normal gestation period of nine months: six months of briefings and individual tasking plus three months of reporting activity. This would probably involve about nine meetings of the Panel, of which the last two or three might be two-day writing meetings. Doubtless a number (unspecifiable) of individual sorties of one sort or another would be needed. In addition, some expenses would doubtless be incurred by Dr. Fernbach's ad hoc group on DoD.

PANEL SUPPORT.

It is becoming ever more apparent that the Panel needs a data bank to assist it in its work. This data bank would take the form of a "library" containing data on machines, foreign and domestic, production rates and utilization of machines, data relevant to basic computer technology, material on trade and exports, articles and reports of interest, summaries of briefings and so on. While the aim would be to keep this data file to as modest proportions as possible, its maintenance and utilization would certainly require additional staff support. This support could also provide the added and allied function of keeping better accounts of the Panel's proceedings than are presently maintained.

If a data bank is ever to be set up to assist the Panel, right now seems to be the strongly indicated time, since, otherwise, it will not be in being in time to contribute to the proposed case studies. Its setting

up will be facilitated by following Dr. Fernbach's recommendation that this library be set up to handle primarily unclassified materials, but with strong provisions for safeguarding "privileged" information. Important classified material we need could simply be filed in Warren House's office and used as an extension of the general library. There is no reason, of course, why the data library could not be tailored with little additional effort to serve more broadly the needs of the entire CS&E Board rather than exclusively the needs of the Panel.

FUNDING.

It is clear that the expanded panel, increased staff support and maintenance of the Technology Library will require a somewhat larger budget than needed by the smaller and more specialized Export Technology Panel. It is possible that future requests by government agencies for particular studies could meet some of the needs for an expanded budget. I understand from the Chairman of the Board that general funds of the Board can be made available for the initial program outlined in the above report.

CS&E EXECUTIVE SUPPORT STAFF.

CS&E Staff Note: For the past nine months, the CS&E staff has maintained a modest effort by a part-time professional librarian to develop a general library of materials relating to the computer science and engineering field. We have been following the approved procedures of the Library of Congress. This effort could be quickly enlarged and made available to support the proposed panel.

Auerbach Proposal

JK

NATIONAL ACADEMY OF SCIENCES
2101 CONSTITUTION AVENUE
WASHINGTON, D.C., 20418

SEP 14 9:00 Rec'd

10 September 1970

ANTHONY G. OETTINGER, CHAIRMAN
COMPUTER SCIENCE & ENGINEERING BOARD
AIKEN COMPUTATION LABORATORY
HARVARD UNIVERSITY
CAMBRIDGE, MASSACHUSETTS 02138

Mr. Isaac L. Auerbach
Auerbach Corporation
121 N. Broad Street
Philadelphia, Pennsylvania 19107

Dear Ike,

Many thanks for your letter of 25 August which I found on my desk when I returned from Japan on 8 September.

By now you will have had a call from Jack Kettler inviting you to meet with us on 16 ot 17 September for what I hope will be final Board approval of your charter.

The people on your list strike me as an able and broad group capable of handling the task you have set for yourself. If at all possible, I should appreciate your bringing the biographies of Bouvier and Huskey with you for the meeting. I anticipate no difficulties concerning this slate.

In the meanwhile, I have kept Philip Handler, the President of the Academy, informed about your plans. He made one specific comment which I pass on to you along with my suggestion for meeting it. I think the matter is a minor one which we can easily resolve at the meeting. Handler said "I find myself itchy with respect to the charter of the proposed International Computer Activities Panel which seems primarily to be addressed, as stated in Item 1 of that charter, to the particular interests of the computer industry rather than to the development of computer science and its application. We have no equivalent relationship to any other industry, either requested or voluntary, and I do not believe it appropriate that we establish such a relationship in the present instance." I replied to Handler as follows: "I think your qualms about the charter are a consequence of an accident of wording. Item 1 of the charter really addresses itself to the strategic import of computers, hence to the importance of understanding relative strengths and weaknesses of computer science and engineering developments, the industrial stance, and the strength of applications of the United States vis-a-vis foreign countries of various categories. That seems like a rather long-winded statement for a charter and I would therefore prefer simply to delete the phrase that caused the misunderstanding and have Item 1 read as follows:

1. To assess the importance of international computer sciences and engineering activities to the country and to report on them periodically.

You might think over the spirit and the letter of this exchange so that at our meeting you may either signify your agreement with the change or be prepared to suggest some alternative that would be acceptable to you and that I might discuss with Handler. Many thanks and best regards!

Sincerely yours,

Anthony G. Oettinger

AGO:chm

cc: J. Griffith
W. C. House
F. Kettler
J. R. Pierce

enclosures

3/9

information and management sciences

AUERBACH
121 n. broad st.
philadelphia
penna. 19107
215-491-8200
cable: auerinfo

August 25, 1970

Dr. Anthony G. Oettinger, Chairman
Computer Science & Engineering Board
Aiken Computation Laboratory
Harvard University
Cambridge, Massachusetts 02138

Subject: Proposal for International Computer Activities Panel

Dear Tony:

This is in response to your request to formulate a proposal for the establishment of an International Computer Activities Panel to monitor and report to the Computer Science & Engineering Board on subjects of possible interest in the international arena of computer sciences and engineering.

Mission:

1. To assess the importance of international computer sciences and engineering activities to ~~the industry and~~ the country and to report on them periodically.

2. To report on matters of significance pertaining to the activities of intergovernmental organizations in the computer sciences and engineering field.

3. To provide advice, guidance and methods for obtaining assistance to the Foreign Secretary of the National Academy of Sciences pertaining to international matters in the field of computer sciences and engineering and relevant to requests from AID, OECD, and similar organizations and for tours requested from foreign delegations.

Plan of Action:

The initial efforts of the Panel will be to segment the international computer sciences and engineering activities so that task forces may be assigned to assess and report on the importance of overseas developments to our country.

A survey will be assembled on significant intergovernmental activities in the computer sciences and engineering field, for the Board.

Finances:

An actual budget of $20,000 for the formative stages is requested. Additional grants will be requested as the work becomes more specific.

Suggested Panel Members:

It is proposed that initially the panel consist of about six individuals who are knowledgeable in the international computer sciences and engineering field. Based on the recommendations of the Computer Science and Engineering Board, I have made inquiry as to the availability and willingness of several individuals to serve on an international computer activities panel if they were so requested. The following list is therefore submitted for consideration by the Board.

Mr. Richard Bouvier
IBM Europe
29, rue Pastorelli
06-Nice, France

Mr. Stewart Fliege, Vice President
Computer Sciences Corporation
Century City
Los Angeles, California

Dr. Wade Holland
Rand Corporation
1700 Main Street
Santa Monica, California 90406

Dr. Harry Huskey, Director
Computer Center
University of California
Santa Cruz, California 95060

Mr. Benjamin Kessel, — Private Consultant
Arcadia Road
Natick, Massachusetts 01760

Dr. Richard Tanaka, Vice President
California Computer Products
305 N. Muller Street
Anaheim, California 92803

Biographies for the above men, with the exception of Bouvier and Huskey, are enclosed, and the missing papers will be sent as soon as they are received.

Best regards,

Isaac L. Auerbach

Isaac L. Auerbach
Organizing Chairman
International Computer Activities Panel

Enclosure

AUERBACH

ISAAC L. AUERBACH is an acknowledged world leader in the development of the information sciences. He is founder and President of AUERBACH Corporations, which are concerned with information and management sciences in all areas of business, government and education, internationally, and publish the well known AUERBACH computer technology services. The corporate headquarters is in Philadelphia, with technical offices across the United States and in Western Europe.

He is known worldwide as a lecturer in the computer field, has published extensively, and has registered numerous patents. He was an original member of the design team of UNIVAC I, the first commercial electronic computer, and directed the development of the ATLAS Missile Guidance Computer, a basic component of the country's space effort. Before founding AUERBACH corporations in 1957, Mr. Auerbach, as a Division Manager with Burroughs, organized and directed that company's entire Defense and Space Research and Development effort.

Mr. Auerbach was the founding president of the International Federation for Information Processing from 1960 to 1965, served as trustee from 1965 to 1969, and in 1969 was elected Honorary Life Member of the IFIP General Assembly. This organization is a federation of national societies representing the information sciences' professional interests in 29 countries. He served as scientific advisor to UNESCO on information processing and automation and was the prime organizer of the UNESCO-sponsored First International Conference on Information Processing held in Paris in 1959, and in recognition of this contribution he received the Grand Medal of the City of Paris.

Mr. Auerbach is a Fellow in the Institute of Electrical and Electronics Engineers, the American Association for the Advancement of Science, and the British Computer Society, is a member of Eta Kappa Nu and Sigma Xi honorary fraternities, and received the first IEEE Philadelphia Section Achievement Award for his contributions and leadership in the electronic computer field.

He is a graduate of Drexel University and has received the Drexel Alumni Citation for his outstanding achievements. He also holds a Master's Degree in Applied Physics from Harvard University. He served as a radar and communications officer, Lt. (j.g.), in the U. S. Navy from 1943 to 1946.

He is active in professional, community, philanthropic and fraternal organizations. These activities include membership on the National Council of the National Planning Association; Board of Advisors, Center for Strategic and International Studies, Washington, D.C.; Young Presidents' Organization, B'nai B'rith, Board of the Jewish Publication Society; Board of the Federation of Jewish Agencies, Philadelphia; American Technion Society; Economics and Taxation Council Board of Governors of the Philadelphia Chamber of Commerce; and Drexel University and Harvard University Alumni Clubs.

Mr. Auerbach is married, with three children, and resides at 480 N. Latches Lane, Merion, Pennsylvania.

BENJAMIN KESSEL
ARCADIA ROAD
NATICK, MASSACHUSETTS 01760

BIOGRAPHICAL DATA
BENJAMIN KESSEL

Born in New York City, 1925

Public Schools - Roswell, New Mexico. Graduated 1941.

Texas Technological College 1941 - 1944 and 1946
B.S. in E.E. 1946 (August)

M.I.T. 1946 - 1948. S.M. in E.E. 1948 (September)

U.S. Navy 1944 - 1946

Teaching Assistant at M.I.T. 1946 - 1948

Engineer in Microwave Communication Systems, Raytheon 1948 - 1950

Engineer in Computer Activities, Raytheon 1950 - 1954

Engineer, Computer Control Co., Inc. 1954 - 1957

Vice President, Computer Control Co., Inc. 1957 - 1959

President " " " " 1959 - 1966

Vice President and General Manager, Computer Control Division
of Honeywell, Inc. 1966 - 1968

Vice President, Product Planning, Computer & Communications
Group of Honeywell, Inc. 1968

Vice President, Product Planning & Development,
International Computer and Communications
Division of Honeywell, Inc. 1969

Private Consultant, 1970

COMPUTER SCIENCES CORPORATION

STAFF RESUME

STEWART E. FLIEGE

Vice President, International Operations

EDUCATION

BA in Psychology, UCLA. MA and PhD in Psychology, University of Michigan. **Received** appointment as University of Michigan Teaching Fellow, Department of Psychology, **during** completion of graduate studies. Member of Phi Beta Kappa and Sigma Xi.

PROFESSIONAL EXPERIENCE

Eight and one-half years, RAND Corporation and System Development Corporation, **Manager** of Operations Development Department.

Joined CSC in June 1964.

SUMMARY

Dr. Fliege is a leading professional in the field of command and control and in the **development** of software management concepts. At SDC he was responsible for all design, development, and engineering support for the Defense Systems Division. Earlier he developed the SAGE computer programming system test concepts and procedures, and was responsible for SDC test operations in Santa Monica, Kansas City, and the Experimental SAGE Sector (ESS) at Lincoln Laboratories. Additional responsibilities included BUIC program management, system training program development, and the incorporation of space defense capabilities in the NORAD COC. Dr. Fliege has also served as a consultant to the **Air Force** and NASA on the extension of configuration management techniques to computer program development. As Eastern Region Vice President he had management responsibility **for** 600 professional and support personnel working on many commercial and government **contracts** at centers located in New York, St. Louis, and Washington, D.C. As vice president of **International** Operations, Dr. Fliego has responsibility for all CSC activities outside the **United** States, including affiliated companies in Canada and Europe. Member of the American **Psychological** Association, the ACM, and the Psychometric Society, and is a Licensed Professional Psychologist in the State of California.

BIOGRAPHY

RICHARD I. TANAKA

Richard I. Tanaka received the Bachelor of Science degree with Highest Honors (1950), and the Master of Science degree (1951), both in Electrical Engineering, from the University of California, Berkeley, California and the Doctor of Philosophy degree in Electrical Engineering and Physics (1958) from the California Institute of Technology, Pasadena, California.

Since 1966, Dr. Tanaka has been with California Computer Products, Inc., Anaheim, California, where, as Vice President for Program Development, he has cognizance of software development, the computing center, product development, part of the corporation's international activities, and various corporate responsibilities.

From 1957 to 1965, he was with the Research Laboratory of the Lockheed Missiles and Space Company, Palo Alto, California, where, as the Senior Member for Computer Research in the Electronic Sciences Laboratory, he directed research and development programs in computer logic and system design techniques. Prior to the formation of the Laboratory, he was Manager of the Computer Logic Design Department, directing systems analysis and computer design projects in basic areas and in support of company requirements.

During 1956 and 1957, while attending the California Institute of Technology, Dr. Tanaka was a Member of the Technical Staff of the Hughes Aircraft Company, Culver City, California, where he was involved in systems analysis studies of small missiles, and in the design of digital industrial control systems. He was responsible for computer logic design at North American Aviation, Inc., Downey, California, from 1951 to 1955, and participated in a pioneering project to design and build computers for aircraft and missile guidance and control.

Dr. Tanaka has published papers, articles, and reports in the computer field, and is the author, with N. S. Szabo, of the book, "Residue Arithmetic and Its Applications to Computer Technology", published in 1967 by the McGraw-Hill Book Company.

He has lectured at the University of Michigan Summer Courses on Computer Technology, and was a visiting member of the University of California (Berkeley) Electrical Engineering faculty during 1962 and 1963.

Dr. Tanaka is currently the President of the American Federation of Information Processing Societies (AFIPS). He was elected to the AFIPS Board of Governors in 1965, and has been on the AFIPS Executive Committee since 1966. During 1967-1968, he was Vice President of AFIPS.

He is also the U. S. Delegate to the International Federation for Information Processing.

He was the General Chairman of the 1964 Fall Joint Computer Conference, sponsored by AFIPS, and the Program Chairman for the 1962 Spring Joint Computer Conference.

He was the Chairman of the Computer Group of the Institute of Electrical and Electronics Engineers (IEEE) during 1965 and 1966, and was a member of that Group's Administrative Committee from 1962 through 1967.

Dr. Tanaka is a member of the IEEE, ACM, Phi Beta Kappa, Sigma Xi, Tau Beta Pi, and Eta Kappa Nu.

21 July 1970

Biography

for

Wade B. Holland

Personal

Born: March 30, 1936
Place: Los Angeles, California
Married: Yes
Dependents: one

Education

Bachelor of Arts (Political Science)
Whittier College--1957

Military

U.S. Army Security Agency, 1958-1961, 1961-1962
Highest Rank: Staff Sergeant
Honorable Discharge. Army Commendation Medal

Employment

The RAND Corporation
Santa Monica, California

1961 to present. Computer Sciences Department

Hired at RAND as Computer Sciences Department Editor. Organized editorial function in the Department and established editorial staff. Left editor's position in 1964 to assume charge of the data input section of the Department's Cybernetics Data Research Project. Designed input techniques for the Relational Data File, organized a library of source documents, and supervised input operation. Subject of experimental file was Soviet research in cybernetics and computer technology. Formulated methods for converting information contained in Russian-language documents for storage in machine-readable formats. As a by-product of this work, assumed operational management of

Rand's research in Soviet cybernetics. In 1967, established the monthly publication, *Soviet Cybernetics Review*. Currently serving as Project Leader for the Soviet cybernetics work and for publication of *SCR*. Author of the *Russian-English Dictionary of Cybernetics and Computer Technology*.

Designed the QUESTER bibliographic indexing and retrieval system, a computer-based capability permitting researchers to index personal and research project literature files.

Engaged from January 1969 to June 1970 on a survey of the state-of-the-art of computer-assisted instruction in higher education. This survey forms a portion of Rand's study of the implications of computer-assisted instruction for higher educational institutions, undertaken for the Carnegie Commission on the Future of Higher Education.

Languages

Russian (U.S. Army Language School, Monterey, California, 1958-1959)

Publications

Soviet Cybernetics Technology: I. Soviet Cybernetics, 1959-1962, Editor, with W. H. Ware, Rand, RM-3675-PR, June 1963.

Soviet Cybernetics Technology: II. General Characteristics of Several Soviet Computers, Editor, with W. H. Ware, Rand, RM-3797-PR, August 1963

Soviet Cybernetics Technology: III. Programming Elements of the BESM, Strela, Ural, M-3, and Kiev Computers, Editor, with W. H. Ware, Rand, RM-3804-PR, September 1963.

Soviet Cybernetics Technology: IV. Descriptions of the MN-11, MN-M and MN-7 Analog Computers and of Three Miscellaneous Electronic Devices, Editor and Translator, Rand, RM-4461-PR, February 1965.

Soviet Cybernetics Technology: V. Soviet Process Control Computers, Editor, with W. H. Ware, Rand, RM-4810-PR, November 1965.

"008 Russian Control Computers," with W. H. Ware, *Control Engineering*, Vol. 13, No. 5, May 1966, pp. 119-125.

Soviet Cybernetics Technology: VI. (U), with W. H. Ware and J. S. Smith, Rand, RM-4948-PR, March 1966, CONFIDENTIAL.

Soviet Cybernetics Technology: VII. ALGEC--Report on an Algorithmic Language for Economics Calculations (Preliminary Version), Trans., with J. B. Gazley, Rand, RM-5135-PR, September 1966.

Soviet Cybernetics Technology: VIII. Report on the Algorithmic Language ALGEC (Final Version), Trans., Rand, RM-5136-PR, December 1966; reprinted in *Cybernetics*, Vol. 2, No. 2, March-April 1966.

Russian-English Dictionary of Cybernetics and Computer Technology, 2nd Edition, Rand, RM-5108-PR, February 1969.

Soviet Cybernetics Technology: X. Bibliography of Literature Cited in 1964 Issues of the Journal of Abstracts--Cybernetics, Editor, Rand, RM-5587-PR, February 1968.

"The BESM-6 Computer," *Datamation*, Vol. 13, No. 8, August 1967, pp. 26-28.

Soviet Cybernetics: Recent News Items, Editor, monthly publication since February 1967, Rand, P-3600/1-25, RM-6000/1-3.

Relational Data File: Input Techniques, Rand, RM-5621-PR, February 1969.

Relational Data File: Input to an Experimental File on Soviet Cybernetics, Rand, RM-5622-PR, February 1969, FOUO.

"Soviet Computing, 1969: A Leap into the Third Generation?" *Datamation*, Vol. 15, No. 9, September 1969, pp. 55-60.

NATIONAL ACADEMY OF SCIENCES
2101 CONSTITUTION AVENUE
WASHINGTON, D. C. 20418

COMPUTER SCIENCE AND ENGINEERING BOARD
PROJECT ON COMPUTER DATA BANKS
ALAN F. WESTIN, DIRECTOR

PROJECT HEADQUARTERS:
JOSEPH HENRY BUILDING, ROOM 536
2100 PENNSYLVANIA AVENUE, N.W.
PHONE (202) 961-1335

OUTLINE OF ORAL REPORT TO THE COMPUTER SCIENCE AND ENGINEERING BOARD ON THE COMPUTER DATABANK PROJECT (Privacy and Due Process Issues)

Alan F. Westin
Evening meeting, September 16, 1970

I. Review of data collection activities to date.

A. Private briefings on file systems in organizations, with various computer manufacturers and software firms.

B. Organizational Site Visits.

1. Thirty eight completed to date; list of organizations visited described.

2. Systems scheduled for visits during the balance of September and in October; reactions to coverage of site visits solicited.

3. Development and testing of site visit interview protocol; basic format attached for discussion.

C. Contacts with civil liberties groups, legislative committees, and other "impact" oriented bodies.

D. Current status of national survey instruments, and report on supplementary grant negotiations with Russell Sage Foundation.

II. Description of Some Tentative Findings of the Site Visits Thus Far, and Their Implications for the Final Report.

III. Current composition of project staff.

IV. Deadlines for meetings with Advisory Gruop, with CS&E Board, and for completion of final report (March, 1971).

SITE VISIT FORMAT

1.0 Arrangements and Procedures for the Site Visit Described

2.0 The Organization Visited: History, Functions, Style, Environment

3.0 Data Now Held About Individuals and Groups, in Manual and Automated Forms

- 3.1 Data About Its Own Employees or Executives
- 3.2 Data About Clients, Customers, and Subjects
- 3.3 Data About Other, "Third" Persons Outside the Organization

4.0 The Computer System Described

5.0 Comparison of Its Operation with the Prior Manual Systems

6.0 The Decision to Computerize: Why and How Made, By Whom

7.0 Transitions from Initial Computerization to the Present

8.0 Management Perceptions of Information Needs and Data Usage

9.0 Data Confidentiality and Data Access: Rules, Practices, Cases, Issues

10.0 Management Attitudes Toward the Information-Collection-and-Civil-Liberties Tension

11.0 Future Plans for Data Systems and Management Expectations for Such Systems

12.0 Impact on the Subjects of Data Collection

13.0 Reflections on this Organization, the Site Visits, and Implications for Project Hypotheses or Findings

CATV-New York

Wally —
WAITING FOR
Response Plan
JVL —

Martin

The City of New York

OFFICE OF THE MAYOR
Bureau of the Budget
MUNICIPAL BUILDING, NEW YORK, N.Y. 10007
Telephone: 566-2661

FREDERICK O'R. HAYES
Director of the Budget

DAVID A. GROSSMAN
Deputy Director of the Budget

Xerox to WH JG
File: Sept 8 folder

9:00 AM
AUG 24 REC'D

July 31, 1970

M E M O R A N D U M

TO: MAYOR JOHN V. LINDSAY

FROM: FREDERICK O'R. HAYES JH

SUBJECT: CABLE T.V.

I initiated last winter an examination of the feasibility of various public uses of cable t.v., first through Bob Bruce, now Director of Communications Planning for the Public Broadcasting Service, and currently with Jim Masters of the Budget Bureau staff.

The cable is often described as the major information transmission belt of the future. Many extended service possibilities have been described, but little analysis exists comparing impacts, costs, and benefits that will occur when these services are made operational. Compared to the possible social impact, the revenue the City will realize from the franchises is a relatively minor item.

Bob Bruce has continued to work with us on the problem. We have, in addition, enlisted the help of the outstanding RAND group under Lee Johnson and Nat Feldman, and the Computer Science and Engineering Panel of the National Academy of Sciences.

We believe, with the approval of the Manhattan franchises, that we should begin to tackle some of the tougher and more complex issues of public service and need. I propose the following steps:

1. Create a working group. Major issues should have, when time is available, a major investment in staff time devoted to the analysis of the full-range of options open to the City, and the public and private costs and benefits of each. I suggest the group consist of the:

   a. Deputy Mayor
   b. Deputy Mayor--City Administrator
   c. Director of Franchises
   d. Municipal Services Administrator
   e. Director of the Budget
   f. Corporation Counsel
   g. Director of the City Planning Commission
   h. Other appropriate agencies and Mayoral Assistants you designate.

2. The working group should coordinate a staff effort designed to:

   a. develop some sense of what extended services will produce for the City in terms of impacts, benefits, and costs.

   b. develop a set of standards for use in evaluating cable franchises in the future, that will withstand the scrutiny of the scientific community, and will address some of the regulatory issues on which the City as yet has no firm position.

   c. develop a set of procedures for reviewing cable franchise applications that will provide maximum protection of the public interest, hence reduce the political furor about the City position on cable t.v.

3. RAND has considerable staff expertise on cable t.v. Their services should be utilized. A preliminary meeting with RAND indicated that RAND could marshall staff resources on short notice to support a City effort with no conflict with work they might do for the Sloan Commission cable study.

4. Similarly, the National Academy of Sciences, which does work on a non-profit basis, has a critical and analytic capability in the areas of cable that would provide a valuable review of staff work. The NAS can provide back-up assistance. The NAS technical panels are noted for producing what one of their Chairmen calls "unassailable results."

I recommend that you convene a meeting of the coordinating or working group during the week of August 3rd, so they can give some shape to a local, RAND, and NAS, staff effort.

I suggest that RAND prepare a presentation, for you and others you invite, describing a preliminary work plan. This presentation could be ready by August 24th.

/bes

F.C.C. BACKS TV ON SELLING TIME

Continued From Page 1, Col. 4

stating the commission's 20-year-old Fairness Doctrine, "rather than any right on the part of the Government, any broadcast licensee or any individual member of the public to broadcast his own particular views on any matter, which is the foundation stone of the American system of broadcasting."

Nicholas Johnson, the one dissenter against the six-man commission majorities on both decisions today, said that the Constitution's guarantee of free speech supported a broad claim of access to television, which he said is now the principal medium of political communication.

He forecast a court test of the issue that would vindicate his position.

Judicial precedent, though not specifically addressed to broadcasting issues, "guarantees to individuals a right of access to forums generally open to the public for expression of views," he wrote in his dissent to the ruling on anti-war spot ads.

The commission and the courts," he said, "must begin to draw guidelines for access to the broadcast frequencies, seeking to insure that the electronic media of 20th century communication are as open to the public as the soap boxes, public parks and town hall meetings of the last century."

Concessions Approved

The commission's decision on the Democratic National Committee's complaint expressed official approval of concessions that the commercial networks had alreadygranted in he last three weeks.

The Democrats filed their complaints last May after the Columbia Broadcasting System had refused to sell them time for the solicitation of contributions and the discussion of public issues. The complaint sought a general ruling that broadcasters could not refuse paid time to "responsible entitites, like the Democratic National Committee."

While the complaint was pending, C.B.S. announced a new series of free "loyal opposition" programs in which the Democratic party could respond to President Nixon, and it also announced it would sell one-minute spots for fund-raising.

At the same time, the American Broadcasting Company, which had formerly refused ads taxing one side of a public issue, modified its policy but only for the Journal of Nations

F.C.C. to Decide City's CATV Future

By JACK GOULD

The question of control over cable television in New York City is heading for a showdown decision by the Federal Communications Commission.

Yesterday, the city, the Teleprompter Corporation and Manhattan Cable Television disclosed that they would formally appeal the finding of an F.C.C. examiner, announced July 27, that a municipal franchise is not necessary for the relay of TV programs by wire.

On July 28, the city awarded 20-year franchises to Teleprompter and Manhattan Cable to operate community antenna television systems in Manhattan. The two companies have been operating in Manhattan for five years and say they serve a total of 40,000 subscribers. Their investment in equipment is estimated at $30-million.

The Corporation Counsel's office and attorneys for the franchise holders will submit their protest on Aug. 26. A panel of senior F.C.C. examiners will review the controversy. Their conclusion can be ratified by the commissioners or the commissioners could take the matter direcly into their own hands.

Operation Called Legal

The case arises from the success of Comtel, Inc., of which Martin Sugar is president, in leasing cable facilities directly from the New York Telephone Company for television transmission. Comtel reaches 14,000 hotel room and 3,000 private residents.

After months of hearings, David I. Krausharr, the F.C.C. examiner, upheld Comtel's right to buy the facilities of the telephone utility and bypass City Hall. The telephone company maintained it also had a right as a common carrier to accommodate a new customer.

Mr. Krauscharr found Comtel's operation legal and authorized issuance of a certificate of necessity to the New York Telephone Company to provide Comtel with scattered cable TV facilities in the midtown area of Manhattan. Some areas would be competitive with Manhattan cable which as a franchised operator must pay the city 5 per cent of its gross receipts from television service and 10 per cent from other possible cable services.

The New York Times

Morris Tarshis, head of the Bureau of Franchises, said city would appeal finding.

The examiner's report becomes a visible order, however, if it is not appealed. Comtel yesterday announced plans for major expansion, including construction of a studio to originate programs. The announcement led to the disclosure that the appeals would be forthcoming.

Morris Tarshis, director of the Bureau of Franchises, when asked if the city would appeal, replied: "Absolutely." He said that Corporation Counsel J. Lee Rankin was preparing the legal documents.

Irving Kahn, president of Teleprompter, said he was joining in the appeal and that, if Comtel moved before Aug. 26, he might ask the F.C.C. for a stay order against the Company. Charles F. Dolan, president of Manhattan Cable, confirmed that his concern would be an equal party to the protest.

Smaller cable TV systems in less populated areas also may join in the proceedings because of their concern in gaining access to telephone poles for stringing their cable systems over substantial distances and determining what would be the proper fee for use of each pole.

Consensus of Lawyers

Among many Washington communications lawyers there was a substantial consensus that the F.C.C. would assert its right to establish broad national policies for cable TV while allowing municipalities to handle local administrative matters.

They noted that Mr. Krauscharr was ruling on the specific facts in a given case. The effect of the appeal by the city and the franchised operators they said, will be to lift the controversy into the arena of fundamental F.C.C. policy on the future of cable TV.

Were cable TV to be classified as a form of "common carrier," the owner of the technical facilities presumably would have no more voice over the content of the system than the telephone company has over the content of telephone calls. This would constitute a major departure from traditional F.C.C. concern that an individual or a company with the most money might practically pre-empt one type of television.

On the other hand, the F.C.C. might be faced with the prospect of municipalities deciding in its franchising what should or should not be carried in the way of programs, inviting different standards in different communities. For that reason alone, the commission is not expected to abandon a decisive voice in cable TV's future.

said that the commission should require broadcasters to accept all paid ads, commercial or politic[illegible] a two-year trial basis.

"If ghetto residents of our major cities wish to purchase [illegible] rat-infested, disease-ridden slums in which they are forced to live, they must be given their say," he said. "If the Daughters of the American Revolution wish to announce [illegible]

commission's full text was released tomorrow.

Meanwhile, before the Senate Communications Subsommittee, the Westinghouse Broadcasting Company, the National Association of Broadcasters [illegible] was both unnecessary and improper to give Congress a statutory authority to pre-empt TV time for the expression of its views.

Senator J. W. Fulbright,

47,879 Toyota Vehicles Recalled for Brake Flaw

TORRANCE, Calif., Aug. 6 (UPI)—Toyota Motor Sales U.S.A., Inc, said today that it was recalling 47,879 Toyota [illegible] possible brake deficiency.

Toyota said that the deficiency might allow air into the brake master cylinder system. In extremely cold weather, the flow of brake fluid [illegible]

Morni

7:00
(2) News: Joseph
(4) Today: Debate and midi skirt
(7) Eyewitness N

7:15
(11) News: Paul E

7:30
(7) A.M. New Y Robert Hall York City Po a book on s
(11) Words. With Julian

8:00
(2) Captain Kang
(5) Cisco Kid (R)
(9, 11) Cartoons

8:30
(5) My Little Ma
(7) Girl Talk: Dee
(9) Fireside Thea

9:00
(2) Leave It to B
(4) For Women Aline Saarine is the topic
(5) Marine Boys
(7) ⊙ MOVIE: "C Play" (1962), Mat Zetter fully wry, comedy abo librarian
(9) Movie: "The (1959), Ava thony Fran Gardner's beautiful, o
(11) ⊙ SESAME cation pro school child

9:30
(2) Donna Reed
(4) Kup's Show lin, Charline
(5) Cartoons
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10:00
(2) The Lucy S
(4) Dinah Shore columnist
(5) Route 66 (R
(11) Fashions in
(31) Sesame Stre

10:10
(11) Jack La Lan

10:30
(2) Beverly Hi
(4) Concentrati
(11) Tell Me Da

11:00
(2) Andy Griffi
(4) Sale of the
(5) Truth or Co
(7) Bewitched
(9) V.I.P. Trav
(11) Gourmet

11:30
(2) Lo
(4) Hollywood
(5) Queen
(7) That Gir
(9) Bozo's
(11) Gumby's

APPROVED RESOLUTION NO.

BOARD OF ESTIMATE
CITY OF NEW YORK

Application of

RESOLVED,

That the Director of Franchises, after consulting with the Corporation Counsel, the Director of Communications Service and such other City officials as he deems appropriate, be and he hereby is directed to develop a plan for the establishment of an Office of Telecommunications for the regulation and supervision of telecommunications in the entire City of New York, such office to be responsible to the Board of Estimate, and to report thereon to the Board not later than September 30, 1970; and, be it further

RESOLVED,

That the plan for the establishment of the Office of Telecommunications shall also set forth the responsibility of that office for seeking means of enlarging employment opportunities for minority groups in telecommunications which shall include but shall not be limited to developing training programs; and, be it further

RESOLVED,

That the Director of Franchises, after consulting with the newly established Office of Telecommunications be, and he hereby is directed to develop a plan or plans for conducting competitive bidding for CATV franchises in some or all areas of The City other than Manhattan, and to report thereon to the Board of Estimate not later than December 31, 1970; and, be it further

RESOLVED,

That the City officials be and are hereby requested to fully cooperate with the Director of Franchises to develop said plans.

(This was introduced in different form as calender # 106 on the July 23, 1970 calender.
This is as it was finally passed as item # 3 on the special meeting on July 28, 1970.)

The City of New York

OFFICE OF THE MAYOR
Bureau of the Budget
MUNICIPAL BUILDING, NEW YORK, N. Y. 10007
Telephone: 566-2661

FREDERICK O'R. HAYES
Director of the Budget

DAVID A. GROSSMAN
Deputy Director of the Budget

July 24, 1970

M E M O R A N D U M

TO: Hon. Richard Aurelio
Hon. Norman Redlich
Hon. Morris Tarshis

FROM: Frederick O'R. Hayes JH

RE: CABLE T.V.

One of the more interesting properties of the cable that carries t.v. signals, is that it has an estimated 987 times the information carrying capacity of the telephone wire. One member of the FCC says it is like comparing Niagra Falls with a garden hose.

The technology for using this capacity has mushroomed in the past few years. Services described in the recent past as being decades away are now technologically possible. The annual CATV convention in Chicago in June of this year had demonstrations of services such as meter reading, fire and burglar alarms, and polling devices, to name few of the extended services that were previously called "blue sky" ideas.

On July 1, 1970, the Federal Communications Commission issued several Notices of Proposed Rule Making that, if adopted, will have major impact on the CATV industry and the City of New York. Some of the FCC proposals will be summarized later in this memo. Several important local regulatory issues, such as duct space problems in Brooklyn, Queens, and Staten Island, and the problem of access to buildings, were raised in the 1968 Mayor's Advisory Task Force on CATV and Telecommunications. The resolutions proposing Franchises to Teleprompter and Sterling incorporate some of the positive recommendations of that Task Force.

In response to an FCC inquiry on CATV, docket 18397, the Electronic Industries Association and the Information Industry Association described an impressive array of services using the broadband cable that they project will be in existence in the later 1970's and 1980's. They present some interesting conclusions, but include little of the analysis they performed to arrive at their conclusions.

The May 18, 1970 issue of The Nation describes a "Wired City" concept wherein cable would alter life styles in major metropolitan areas. The June 20, 1970 issue of The Nation carries an article highly critical of the City's proposal to award 20-year franchises at a time when many experts are calling for 2 and 5 year franchises because of projected growth of cable technology in the next few years.

In 1968, the Ford Foundation provided a grant to the Rand Corporation to study selected aspects of CATV. Two volumes of their report are now in print. Ford now has an internal group evaluating the possibility of financing experimental systems that include various extended services.

The Stanford Research Institute is conducting a multi-client sponsored study that will produce a three volume report dealing with economic and regulatory, technical, and future uses. Unfortunately, SRI plans to retain their proprietary interest in the final product; there is little chance of our seeing it.

The Control Data Corporation is going to test a system in a community of about 25,000 people featuring two-way terminals installed free in every home.

Arthur D. Little is conducting a multi-client sponsored study reportedly funded at about $500,000 by the Electronic Industries Association, IBM, and several other major corporations. They plan to develop a test system with an initial capitalization of about 15 million to test the feasibility of using the cable as a computer-assisted instruction tool, to provide hard-copy facsimile printing in the home, and to demonstrate two-way shopping procedures. They have been negotiating with Sears, the New York Times, and several brokerage and banking houses.

The Sloan Foundation's much heralded $500,000 study of CATV is experiencing some difficulty in reaching agreement about the scope and depth of their study; they will have no product for at least 12 months under the best of circumstances.

Mr. Robert Bruce, recently appointed Director of Communication Planning for The Public Broadcasting Service has expressed interest in both cable T.V. and broadband communications in New York City.

The National Academy of Sciences' Computer Science and Engineering Panel recently completed a technical analysis of Common Carrier/User Interconnections, a vital issue in the development of metropolitan, regional, or national CATV systems.

There is visible interest among several civic groups, such as the City Club, New York Civil Liberties Union, and Citizens' Union.

In short, there is a lot happening. Much of it, however, deals with the future of the industry in general and is not designed to offer operational guides for any one City.

We have little hard data on the projected dollar and social costs of implementing different extended services in New York City.

There is almost no analysis comparing the social desirability of a service with estimates of what it would cost the City to provide that service.

There is no comparitive data on what it would cost the City to use the cable to perform some function now being performed in some other manner.

The FCC is proposing that minimum technical standards be imposed requiring that all CATV systems provide a minimum of 40 or 80 channels. They may or may not "grandfather" existing systems and allow them to continue with some smaller number.

The FCC is proposing that all CATV systems have two-way amplifiers on the cable to provide the return signal necessary to the delivery of most extended services. They may or may not "grandfather" systems in the ground at the time of their ruling, which unofficial reports indicate may not come for a year. We don't know how difficult it is to retro-fit existing systems with two-way amplifiers.

The FCC is proposing that municipalities be limited to 2% of the franchises gross receipts on basic service as opposed to the 5% proposed in the Teleprompter and Sterling resolutions. We have no projections on what trade-offs municipalities might ask for; and the Sixth Circuit Court finding that a 3% franchise fee constituted an unconstitutional interference with interstate commerce constrains the municipalities from seeking any sizeable trade-off on this issue, but it should be pursued.

The FCC is proposing that a channel be made available to each identifiable community in the metropolitan area. This might mean 62 channels in New York City. We have little information about the ability of the existing franchises to provide this, nor do we have projections on demand for use of such channels over the next few years.

Assemblyman Kelly introduced a bill, April 13, 1970, (6700-A) that would create a State Commission on Cable Television. This Commission would have certain regulatory functions over CATV. We do not have a City position on the desirability of any single provision of this bill.

The FCC's Common Carrier Bureau, in a Reply Brief dated June 19, 1970, dealing with several New York City CATV issues, contends that:

> New York City has not, and cannot under present law, effectively regulate CATV in Manhattan. It may even be argued that to encourage the consumer and the public to rely on the effectiveness of the "regulatory program" of the Bureau of Franchises would be a disservice and contrary to the public interest.

The absence of a unified position backed by solid research on the points of contention contributes to the possibility that the FCC will give grant to the states, or itself pre-empt, municipalities in several major regulatory areas.

There are gaps in our knowledge about how CATV and the cable will affect the City of New York over the near and long term. We lack information and analysis projecting local trends in areas such as: channel capacity that is possible or desirable; interconnection between CATV systems; switching necessary for point to point communication over the cable; extended services and their absolute and relative dollar cost and social desirability; and the problems involved in retro-fitting CATV systems.

The City is being challenged by both the State and the FCC on several regulatory issues. We have countered neither with argument nor suggestion about how we might increase our capability. This appears to be a situation where several city agencies jockeying to prevent one from gaining a relative advantage over the other may create a net loss for everyone. The FCC and the State are moving faster than we are. We should have a position on each of the regulatory issues.

The Rand Corporation has good cable T.V. experience and capability. It can provide considerable analytic assistance on technical possibilities, costs and regulatory issues. The National Academy of Science could establish a broadly based technical panel to consider these issues on an expenses-only basis; it can serve as a valuable critical back-up.

Rand's contracts for FY 71 are being discussed now. Similarly, National Academy of Science involvement should be arranged for soon. The Bureau of Franchises and the Corporation Counsel's Office should definitely be involved in shaping the efforts of RAND and NAS in this area.

If the cable becomes, as many predict, the major transmission belt into and out of both home and business, then our effort may have a major impact on the future. We don't get many opportunities to shape the future; we should grasp the few we get.

/bes

cc: Hon. John V. Lindsay
Hon. Jay Kriegel
Hon. Manny Carballo
Hon. Dave Garth
Hon. Edward Hamilton
Hon. David Grossman

COMPUTER SCIENCE AND ENGINEERING BOARD MEETING

15 - 16 December 1970

ATTENDANCE

BOARD MEMBERS	ATTENDING
Dr. Walter S. Baer	15-16 December
Prof. Wesley A. Clark	15-16 December
Dr. Joel Cohen	15-16 December
Dr. Sidney Fernbach	15-16 December
Dr. Martin Greenberger	15-16 December
Mr. John Griffith	15-16 December
Mr. Jerrier A. Haddad	15-16 December
Mr. William Knox	15-16 December
Dr. J. C. R. Licklider	15-16 December
Prof. William Miller	15-16 December
Mr. Roy Nutt	15-16 December
Mr. Kenneth Olsen	16 December
Dr. Alan J. Perlis	16 December
Dr. Bernhard Romberg	15-16 December
Prof. J. Barkely Rosser	15-16 December
Dr. Alan F. Westin	15-16 December
Dr. Ronald Wigington	15 December
Dr. A. G. Oettinger, Chairman	15-16 December

OBSERVERS	ATTENDING
Dr. Bruce Gilchrist, Exec. Director American Federation of Information Processing Societies	16 December
Dr. Newman A. Hall, Exec. Director Commission on Engineering Education National Academy of Sciences	16 December
Mr. Ken Hunter U.S. General Accounting Office	16 December
Miss Ann Marie Lamb Management Analyst, ADP Management Staff Bureau of the Budget	16 December

ATTENDANCE (cont.)

OBSERVERS (cont.)	ATTENDING
Mr. J. D. Madden Vice President Compata, Inc.	16 December
Dr. John Pasta Head, Office of Computing Activities National Science Foundation	16 December
Dr. Lawrence Roberts Advanced Research Projects Agency	16 December - afternoon
Mr. Bernard Urban Director, Urban Clearing House Service Department of Housing and Urban Development	16 December

Executive Session

NATIONAL ACADEMY OF SCIENCES

COMPUTER SCIENCE & ENGINEERING BOARD
2101 CONSTITUTION AVENUE
WASHINGTON, D. C. 20418

COMPUTER SCIENCE AND ENGINEERING BOARD

AGENDA

Evening Session 15 December 1970

EXECUTIVE SESSION

The evening session of the Computer Science and Engineering Board Meeting will be held in Room 500A of the Joseph Henry Building and begins at 7:00 p.m.

Chairman's Review of Developments during Stand-down.

ARPA extension and negotiations.

Contacts Commerce, FCC, and other prospective support agencies.

Board Reorganization, Policies and Meeting Schedule.

Status of the Oates Panel Report

Day Session

NATIONAL ACADEMY OF SCIENCES

COMPUTER SCIENCE & ENGINEERING BOARD
2101 CONSTITUTION AVENUE
WASHINGTON, D. C. 20418

COMPUTER SCIENCE AND ENGINEERING BOARD

AGENDA

Day Session 16 December 1970

Joseph Henry Building
Room 500A

0900 - 0945	Introduction -- Chairman
0945	Information Systems Panel Update -- R. Wigington
1000	Westin Privacy Update -- A. Westin
1045	Data Base Panel Update -- S. Fernbach
1115	Ling Update Technology/Resources Panel -- D. Ling, The Chairman
1200 - 1230	Lunch
1230	Professional Societies - Carlson ACM Letter -- The Chairman
1300	CAM/CAD -- The Chairman
1400	Security -- J. Haddad and Dr. M. Feder
1445-1530	Digital Communications System -- W. Baer

Board Policy Paper

of responsibility.

The Board area of interest and responsibility will be divided into the three following major areas: (1) computer science; (2) computer equipments, technologies and associated technologies; and (3) computer applications and associated technologies. A member of the Board will be appointed to have general responsibility for keeping the Board appraised of significant developments and activities in his field. These responsibilities will include monitoring the developments in the area, developing a research program for the area, designating priorities for Board initiatives, guiding, evaluating and adapting these initiatives, providing leadership and guidance to the task-oriented "ad hoc" or "standing" Panels concerned with the area, recommending to the Board the establishment of task or problem oriented Panels, making preliminary evaluations of various Board outputs, and acting as the Board's general agent for the area.

All of the above committees may meet separately from the Board meetings, or in conjunction with the Board. All may draw upon Board members, government observers, or experts from the private sector for assistance and guidance in performing their work for the Board. Actions or decisions taken by the Executive Committee for the Board shall be considered to represent the Board, unless the Committee explicitly indicates that the action taken should have subsequent Board review and approval.

Board Meetings -- The Board shall meet once each month or once every two months, depending upon the varying workload. Meetings may be held at various locations to roughly balance the travel burden for the members coming from various parts of the country. Normally, the Board will meet for one full business day, with the option of holding executive sessions on the evening prior to the full day meeting or at such other times as the Board may desire. As indicated under "Access to Board Meetings" below, the Board shall schedule its regular meetings six months in advance, with notices of individual meetings and agendas bein prepared and circulated in advance to interested people within and outside the government. Items may be placed on the agenda by any Board member, either in reflection of his own interests or the interests of one or more of the "constituent groups" concerned with Board activities. Board members may circulate materials to the Board in support of submitted items, as appropriate.

Initiating Board Activities -- Board actions relating to the field fall into two broad categories, i.e., those taken in response to requests and those initiated by the Board. In either case, the Board will discuss the matter under the general guidance of the member-sponsor. Where the issue appears to warrant further and more formal inquiry, the Chairman will appoint an Interim Planning Group with responsibility for further investigation and for recommending actions to the Board. Upon determination

COPY NR. 5 OF 6 COPIES

FOR CS&E BD-STAFF ONLY

DRAFT

12 November 1970

POLICY PAPER FOR THE COMPUTER SCIENCE & ENGINEERING BOARD

Introduction -- The activities of the Board are expected to increase substantially during calendar 1971. More requests for support and guidance will probably be made of the Board by government departments and staffs. The Board may also decide to take certain initiatives in areas of concern that are not adequately covered by requests for assistance. The expected increase in Board activities will probably arise, in part, because of past successes by the Board and because of rising interest in making use of computers as a tool for improving on traditional approaches and methods in both the government and the private sectors. The following general policy guides are designed to raise the readiness level of the Board to provide leadership and support at the national level for activities in both the government and the private sectors.

General Policy -- In order to provide the leadership needed in the computer science and engineering field, the Board will keep in close touch with developments in the field and with those organizations and individuals involved in these developments. The purpose will be to continuously review and evaluate those issues/problems/activities in which the Board can play an appropriate and effective leadership role of value to both the government and the private sector.

General Operating Policy -- The operating policy interests of the Board may be divided into two broad groups or activity areas, i.e., those concerned with the substantive content of the computer science and engineering field and those concerned with activities, problems or issues of the field. There is, of course, a large number of people and organizations in both the government and the private sectors which have a continuing interest in both areas. The Board has fairly bread options which it can exercise in its "initiative" inquiries or activities and rather specific obligations to provide support to various government elements when requested.

In exercising initiative, the Board shall address those activities, problems or issues of concern to the largest number of people and organizations in both the government and the private sector. In such initiatives, the Board will first make maximum efforts to utilize the people/organizations/activities already concerned with the problem, issue, or inquiry. The Board will undertake operational responsibility only when existing resources have been made full use of or where such resources do not exist in significant measure. In these latter cases, the prime aim of the Board will be to develop the needed resources and capabilities so as to pass to them as soon as possible the maximum share of the working and leadership role, thus freeing the limited Board resources for other needed initiatives.

DRAFT

FOR CS&E BD-STAFF ONLY

FOR CS&E BD-STAFF ONLY

In the Board's response to requests for assistance and support from the government, the policy will be to make every possible effort to select those projects/areas which have high value to the substantive concerns of the computer science and engineering field and to those people and organizations both within and outside the government having related interests.

In the Board's response to requests for assistance from the private sector, the policy will be to select wherever possible those activities/issues/problems which are of broad importance to the nation and which should be or are of current concern to the U.S. government.

The Multi-Layered Problem -- The "problem" which the Board addresses is a bit complex and inclined to shift both its surface characteristics and its center of gravity. The Board's role as an effective instrument to provide national level leadership in the computer science and engineering field requires it to take cognizance of and selected actions in a wide range of activities. Leadership at this level includes: (1) fostering the most beneficial development and application of computer science and engineering in our society; (2) providing guidance and support to national policy level people in the federal government; (3) doing technical, though policy-oriented, studies for operating departments and staffs of the federal government; (4) assisting in the appropriate development of professional societies in the field; (5) supporting Congress in relation to legislation and to operating computer support systems as appropriate; (6) undertaking studies of computer-related issues of broad social or national significance, such as Privacy and National Data Banks, etc. With such rich diversity, the concept of constituencies is helpful. Attached is an excerpt from a paper prepared in April, 1970, for the Special Export/Technology Panel which deals with constituencies and lists some significant ones.

The following Operating Policies will apply to individual aspects of the Board and its activities.

Board Membership -- Members of the Board shall be selected to assure maximum expertise and competence in computer science, computer technology and computer applications, with due consideration for the National Academy of Sciences policy favoring geographic distribution where this can be done without significant sacrifice of competence. In general, appointment to the Board shall be for a three-year term as indicated by the general NAS policy for Boards, Committees, and the like. Membership of the Board may be expanded or altered at any time in order to provide the competence needed to provide expert support in new areas of the field. In general, the Board

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membership will be rotated on a schedule assuring that at any given point in time the majority of the members shall have no less than two years experience.

Exceptions -- Exceptions to the above to meet special circumstances may be made at any time by the Chairman, with the concurrence of the President of the National Academy of Sciences.

Board Organization and Responsibilities -- The Board shall have a Chairman, Vice-Chairman and Executive Secretary to perform the customary leadership and support duties. The Board will have an Executive Committee comprised of the Chairman, Vice-Chairman, the heads of the three major Board areas, and the Executive Secretary. The committee will be supplemented as appropriate by Board members with expertise related to a given issue.

The Board will have a Planning and Programs Committee comprised of the Chairman, Vice-Chairman, the heads of the three basic areas, the Executive Secretary and such other members as the Chairman may select. The Committee will be responsible for developing, continuously reviewing and evaluating the research program and other related activities of the Board, for reporting quarterly and annually on the status of the program, and for recommending appropriate actions to the Board, particularly in regard to changing priorities in the field and to mid- and longer-term prospects of importance to the Board. The Plans & Programming committee may draw upon the expertise of government observers and experts from the private sector. For longer-term or complex problems cutting across the three basic areas and for which there exists a broadly based constituency, such as the on-going interpact between computers and communications, the Chairman may appoint Program Directors.

The Board will have a Product Review and Evaluation committee which will be responsible for pre-Board review and evaluation of papers, reports, etc., being produced for either contract sponsors or initiative distribution to broader constituency areas. "Ad Hoc" panels established by Board initiative or in response to requests for Board action will be headed by a Chairman to be appointed by the Board Chairman. In Board initiative matters, the Panel Chairman will be appointed by the Chairman, with the concurrence of the Board. In the case of panels set up in response to requests for support or assistance, the Panel Chairman, with the concurrence of the Board and the President of the Academy. The appropriate Board area group(s) will have general cognizance of the "ad hoc" panel activities related to its area

will be appointed by the Chairman

of responsibility.

The Board will be divided into three comparable groups which will have continuing responsibility for the following three areas: (1) computer science; (2) computer equipments, technologies and associated technologies; and (3) computer applications and associated technologies. These responsibilities will include monitoring the developments in the area, developing a research program for the area, designating priorities for Board initiatives, guiding, evaluating and adapting these initiatives, providing leadership and guidance to the task-oriented "ad hoc" or "standing" Panels concerned with the area, recommending to the Board the establishment of task or problem oriented Panels, making preliminary evaluations of various Board outputs, and acting as the Board's general agent for the area.

All of the above committees may meet separately from the Board meetings, or in conjunction with the Board. All may draw upon Board members, government observers, or experts from the private sector for assistance and guidance in performing their work for the Board. Actions or decisions taken by the Executive Committee for the Board shall be considered to represent the Board, unless the Committee explicitly indicates that the action taken should have subsequent Board review and approval.

Board Meetings -- The Board shall meet once each month or once every two months, depending upon the varying workload. Meetings may be held at various locations to roughly balance the travel burden for the members coming from various parts of the country. Normally, the Board will meet for one full business day, with the option of holding executive sessions on the evening prior to the full-day meeting or at such other times as the Board may desire. As indicated under "Access to Board Meetings" below, the Board shall schedule its regular meetings six months in advance, with notices of individual meetings and agendas being prepared and circulated in advance to interested people within and outside the government. Items may be placed on the agenda by any Board member, either in reflection of his own interests or the interests of one or more of the "constituent groups" concerned with Board activities. Board members may circulate materials to the Board in support of submitted items, as appropriate.

Initiating Board Activities -- Board actions relating to the field fall into two broad categories, i.e., those taken in response to requests and those initiated by the Board. In either case, the Board will discuss the matter under the general guidance of the member-sponsor. Where the issue appears to warrant further and more formal inquiry, the Chairman will appoint an Interim Planning Group with responsibility for further investigation and for recommending actions to the Board. Upon determination

by the Board that more formal action should be initiated, the Chairman will appoint an Informal Board Planning Group with responsibility for making a more definitive evaluation of the issue or problem, for identifying the options open to the Board in considering the action to be taken, for indicating the prospective benefits for the parties-at-interest and the computer science and engineering field, for exploring possible sources of the necessary expertise and funds, for recommending the appropriate action.

Upon the Board's decision to take action, the Chairman will appoint a formal Board Planning Group made up of members who are expected to stay with the Board effort to completion, either as active participants or as monitors for the Board. This group will be responsible for delineating the problem in actionable terms, for roughing out a written proposal, for seeking out the parties-at-interest to determine their degree of interest, their funding capabilities and their view of what the Board product should be, for working out an estimated budget, for locating and identifying the needed expertise and competences, and for reporting their findings to the Board in written form. The Chairman will appoint no less than one Board member to give interim guidance to the Panel and to keep the Board informed on Panel progress. The Executive Support staff will provide appropriate assistance and guidance throughout the above and liaison and negotiations assistance through the completion of the formal contract with the sponsoring organization(s).

Access to Board Meeting -- As a general policy, as much as possible of the Board's business shall be conducted in open forum. This is based largely upon the nature of the computer science and engineering field, the intense and widespread interest both within and outside the government in the Board's activities, and on the need for the widest possible understanding and support for the Board's activities in order to provide broad leadership at the national level both within and outside the government. In light of the foregoing, and as indicated under "Board Meetings," above, the Board policy shall be to schedule its meeting no less than six months in advance, and to complete and distribute agendas for each meeting no less than two weeks in advance. Copies of the six-month Board meeting schedule and the agendas for each meeting will be provided to the interested parties within and outside the government. A notice of individual meetings will be sent to interested parties about 30 days in advance. Agenda items will be grouped wherever possible to facilitate selective attendance.

Constraints upon the "openness" of Board meetings originate from several basic sources, i.e., government classification requirements, access restrictions placed upon sensitive "proprietary" materials or information by Board sources,

the NAS "Academy Privilege" system which is designed to provide general protection for a variety of reasons, the sensitivities deriving from the government policy user's concerns for complete confidentiality regarding his activities, and the specifications in many contracts requiring no divulgence beyond the working NAS consultants of the materials being reported to them. All of the applicable restrictions on access will be detailed for the Board on a case-by-case basis and must, of course, be scrupulously respected by both Board members and the NAS "consultants" working on Board assignments. However, in many cases the conventional techniques of progress status, summarization, non-content description, and non-attribution permit a general discussion of some part of the project that is restricted for any reason. Moreover, a large proportion of the Board's work will probably continue to occur in the general public or "open" area and the general policy of the Academy is to keep the public informed to the maximum extent possible regarding its many and varied activities which are of public interest.

A special case exists for maximum access to Board activities and products by government sponsors who have a common interest in much of the Board's work, who possess considerable competence in the computer science and engineering field, who have a current, sometimes unique, understanding of government support needs, and who, in some cases, share the funding of substantial portions of the Board's activities. Part of the rationale for closer liaison with such sponsors is the fact that interim spin-offs during the course of the Board's work on a longer-term problem can be of great value to the government agencies confronted with interim decisions. Such interim assistance can be provided through close liaison with the concerned government agencies, including the Chairman, the Panel head and the Executive Secretary, through informal "notes" addressing a particular point of concern, and through informal briefings by a small, selected group of the Panel membership, as appropriate. The policy of the Board shall be to assure maximum access by government sponsors to the general work of the Board through attendance of Board meetings, through the means listed above, and by whatever other means are appropriate to the moment.

Exceptions -- Exceptions would be based upon the absence of a "need to know" for classified materials; extra-ordinary "sensitivity" of a proprietary or strongly implied policy use nature; and, in the case of "NAS Privileged" materials, upon the decision of the President of the Academy.

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Access to Board Reports -- The general policy of the Board shall be to give maximum distribution to all Board reports for much the same reasons relating to the Board's national level leadership responsibilities that are outlined in the preceding paragraphs on access to Board meetings. The same constraints applying to meeting access also apply to report distribution, with more formality and precision in some cases. For example, in the case of contracted work, NAS policy is that, while in progress, the report and related materials fall within the Academy Privilege system during preparation, and that when delivered to the sponsor the report becomes the property of the sponsor, unless the sponsor in the contract provides for other disposition or distribution of the report in the contract. Once the sponsor has received the report, he may request the Academy to assist in its dissemination. In the case of government classification, controls are more formal and explicit. However, many government sponsors may possess the necessary basic clearances and the "need-to-know" principle does permit certain discretionary control and access by the originating organization within the basic classification level. In the case of unclassified activities, the resulting reports will be given the widest possible distribution consistent with the other constraint considerations that may apply in a given case.

Exceptions -- Exceptions would roughly parallel those indicated for the above section on "Access to Board Meetings."

Multi-Level Publications -- The policy of the Board will be to package the output of the Board's work in the form and content which is most appropriate to the product, the nature of its intended use, the timeliness requirements of the user, the duration of the anticipated use, the level of the requester/recipient and other users, the level of knowledge in a given subject/problem area, etc. To perform effectively in meeting such a blend of user requirements and applications, the Board must establish a range of publications, with individually oriented criteria sets, which permit the most timely and useful

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packaging of the Board's work to meet each set of customer requirements from one situation to another. For example, the mix of customer-oriented products could range from a one-page summary of the interim results of six months analysis of the rates and directions of computer technologies and associated technologies to the other extreme of a formal NAS publication of the considered results of a 12-month assessment of the factors and forces affecting the movement of computer technologies and related technologies among the high technology nations of the world, and the implications of these results for government policies and programs under way and in contemplation. Form, structure, content coverage, quality and consistency must all be considered to be variables in the Board effort to provide the most timely and effective support to the government. For example, a four-part summary of a Summer Conference on Computers and Associated Technologies which makes a preliminary and highly tentative assessment of these various technologies in relation to government export control problems could be of great value throughout the affected areas of of government even though the content could not even meet the formal requirement for consistency among the four different parts. Such flexibility in all aspects of publications form, content coverage, quality and consistency calls, of course, for equal flexibility and control in the dissemination of a given product, and in the timely updating of such products.

Exceptions -- Not applicable.

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Board Research Policy -- The general policy of the Board shall be to seek out the finest expertise and the most relevant information wherever they may be that are necessary to provide the highest quality support to the U.S. government. In the search for new and directly relevant technological and background information, the sensitivities encountered, and there is little choice but to accept them, appear to be roughly in proportion to the importance and usefulness of the information and access acquired. In an institution dedicated to the free exchange of scientific and technical knowledge, a special burden is placed on an operating component to make every effort to assure the broadest possible use of new and valuable information, insights, concepts, etc. The policy of the Board, in light of the foregoing, shall be to ascertain insofar as is possible the general nature of the restrictions likely to be encountered on a given project and to make advance provisions for assuring maximum dissemination of the results of the Board's work. Where feasible, such provisions should be made during contract discussions with the sponsoring organization(s). In illustration, consideration should be given to producing a de-sensitized version of the report where the general interest and utility warrants.

Board Responsibility Regarding Report Content & Integrity -- The policy of the Board shall be to closely monitor the activities of every "ad hoc" panel working on problems for which contractual committments exist, to carefully review the content and case of each report as to technical accuracy, competence, pertinence and judgments expressed, and to convey frankly and clearly to the contractor in a memo transmitted through the Academy either a full endorsement of the report or specific areas, points or judgments with which the Board is in disagreement, accompanied by gists of the arguments and evidence supporting the Board's views. In the case of interim briefings, notes, etc., as mentioned above in the paragraph on "Access to Board Activities," the Board will defer to the judgment of the Chairman and the Executive Committee pending the opportunity to review such issuances at the next scheduled meeting of the Board.

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Meeting Schedule

Meeting Dates, scheduled and proposed

Scheduled:

~~20-21 January 1971~~	(Wed-Thurs)
24-25 February 1971	(Wed-Thurs)

Proposed:

~~23-24 March 1971~~	(Tues-Wed)
21-22 April 1971	(Wed-Thurs)
~~18-19 May 1971~~	(Tues-Wed)
23-24 June 1971	(Wed-Thurs)

Discussion: The above dates, frequency of meeting by panel, Executive Committee or other Board entity.

Oates' Panel Report

H. Brooks
J. Griffith
W. C. House
J. R. Pierce

r OF SCIENCES
2101 CONSTITUTION AVENUE
WASHINGTON, D.C., 20418

11 December 1970

ANTHONY G. OETTINGER, CHAIRMAN
COMPUTER SCIENCE & ENGINEERING BOARD
AIKEN COMPUTATION LABORATORY
HARVARD UNIVERSITY
CAMBRIDGE, MASSACHUSETTS 02138

Dr. Philip Handler, President
National Academy of Sciences
2101 Constitution Avenue
Washington, D. C. 20418

Dear Phil,

Many thanks for yours of December 8 clearing up the puzzles I put to you in mine of December 1! I feel much better!

As for what there is to review, Harvey Brooks thought about it as you do, but I do think it gives David what DuBridge asked you for when he wrote you on July 17, 1970. As written by a group of generalists assisted by expert witnesses (including Computer Science and Engineering Board members), the report is responsive to DuBridge's understanding, following all our preliminary talks, "that the objective of the Woods Hole meeting is the preparation of the Oates Panel's study plan." The Appendix, for example, lists nine specific "illustrations of the urgent tasks that the Commission might sponsor." The Panel singled out as first and last two particularly critical tasks it thinks need top level action by people reflecting all the many views, needs and competencies affecting and affected by computers and all their trimmings.

I'm sorry I can't tell you what the Board thinks of the substance of the report because it doesn't. I have kept them fully informed about the spirit of the enterprise and the qualms I told you about in my December 1 opus. The report is that of the Oates Panel, so I'm with you in thinking that does it.

Sincerely yours,

Anthony G. Oettinger

AGO:chm

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DEC 9 REC'D

NATIONAL ACADEMY OF SCIENCES

OFFICE OF THE PRESIDENT
2101 CONSTITUTION AVENUE
WASHINGTON, D. C. 20418

NAS PRIVILEGED

December 8, 1970

Dr. Anthony G. Oettinger
Aiken Computation Laboratory
Harvard University
Cambridge, Massachusetts 02138

Dear Tony:

This replies to your letter of 1 December.

1) There is no local "jurisdictional dispute." I care not whether the Oates report is reviewed by RRC or COSPUP. Without referring to earlier arrangements I simply sought to assure that the report is reviewed.

2) Review by the Computer Science and Engineering Board does not do as you suggest. If the report is publicized as that of Mr. Oates' panel -- that does it. For internal use, I wish to know what CSEB thinks of it. I cannot guess what COSPUP will say, but you must recognize that there is really no report to review. All it says is that computers are here to stay, that school children should be introduced to the computer early in life, that this will be expensive and that Mr. Nixon should appoint a commission. And that sentence is an even shorter report!

Sincerely yours,

Philip Handler
President

bcc: Mr. Warren House

NAS PRIVILEGED

NAS PRIVILEGED

W.H

NATIONAL ACADEMY OF SCIENCES
2101 CONSTITUTION AVENUE
WASHINGTON, D.C., 20418

1 December 1970

ANTHONY G. OETTINGER, CHAIRMAN
COMPUTER SCIENCE & ENGINEERING BOARD
AIKEN COMPUTATION LABORATORY
HARVARD UNIVERSITY
CAMBRIDGE, MASSACHUSETTS 02138

Dr. Philip Handler, President
National Academy of Sciences
2101 Constitution Avenue
Washington, D. C. 20418

Dear Phil,

In checking on the status of the Oates Report, I learned of your letter on its way to me. To save time, I had it dictated to me by phone. I am puzzled by your reference to a review of the Oates Panel Report by a panel of the Report Review Committee. The Report Review Form signed by Bob Green on July 15, 1970 states that "The Committee on Science and Public Policy will review this report. However, an additional review by the Report Review Committee is unnecessary". As I mentioned in my letter to you on November 24, I had therefore made a copy of the report available to Harvey Brooks, the Chairman of COSPUP. Since George Kistiakowsky, the Chairman of the Report Review Committee, also happens to be a neighbor, I have had another copy hand carried over to his office.

I am concerned about any jurisdictional confusion that might retard transmittal of the report. As you know from Lee DuBridge's letter to you of July 17, 1970, OST is very much interested in this report. When I accompanied Jim Oates on a visit with Ed David on November 13 (also the day of the ARPA contract extension flap), Ed expressed a sense of urgency about getting the report, and I hope we can be responsive.

I think it would be presumptuous for the Computer Science and Engineering Board to pass on the report either to endorse it or even to recommend it for transmittal. Although the Board played midwife in the birth of the Oates Panel, it is my understanding that the Panel does not report to it but rather directly to you. Jim Oates' letter of invitation to the Panel members, which you examined in May, explicitly stated that "we shall be assisted in our task by the members and the staff of the Computer Science and Engineering Board of the NAS".

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Several Board members were among the expert witnesses who expressed their views as interested parties before people expressly selected, as the letter of invitation put it, as "our group of generalists". I therefore think that Board endorsement or recommendation for transmittal would be improper. Such action might, I think, lead to the report appearing as the voice of the Board rather than that of an independent group which has no axe to grind insofar as computers and allied technologies are concerned.

I am confident of the Board's integrity, but I also think that its giving voice -- in its own field -- to recommendations of a broad policy nature and critical to the future of the whole nation would be regarded by many as self-serving.

Sincerely yours,

Anthony G. Oettinger

AGO:chm

cc: H. Brooks
R. Green
~~W. House~~
G. Kistiakowsky
J. Oates

NAS PRIVILEGED

NATIONAL ACADEMY OF SCIENCES

OFFICE OF THE PRESIDENT
2101 CONSTITUTION AVENUE
WASHINGTON, D. C. 20418

November 30, 1970

Professor Anthony G. Oettinger
The Aiken Computation Laboratory
Harvard University
Cambridge, Massachusetts 02138

Dear Tony:

I have your note of 24 November and Mr. Oates' letter of 23 November, plus his committee report. Before the latter is to go to Dr. David as requested, it must:

(a) be endorsed -- or recommended for transmittal -- by the Computer Science and Engineering Board, and

(b) be acceptable to a panel of our Report Review Committee.

If the CSEB has reviewed the report and acted upon it, may I have a letter to that effect. Meanwhile, the review called for in (b) will be initiated.

Sincerely yours,

Philip Handler
President

cc: Mr. Green
Mr. House

October 26, 1970

Mr. C. G. Westbury
Midtown Associates
New York, New York

Dear Mr. Westbury,

Your letter of October 5 raises a question that I have heard with increasing frequency over the past 10 years. The most recent opportunity I have had to explain my own views was in a recent interview with one of the trade magazines.

The questioner asked what I thought the odds are for a merger of ACM and DPMA. My answer was that I consider them zero for the 1970-1975 time frame and 100 percent by 1980. The reason is that DPMA and ACM have negligible common meeting ground at present; DPMA does not belong to AFIPS and has not taken an interest in the National Computer Year project started by Bob Bemer, for example. On the other hand, there is probably an increasing roster of individuals who belong to both, and there are relatively frequent joint meetings of chapters in some locations.

A positive sign of seeking more common grounds is the joint work of DPMA and ACM committees on curricula and accreditation for EDP trade schools. I confidently expect this type of interaction to grow during the next five years, and it is this anticipated trend that forms one basis of my prediction for the ultimate merger.

Another basis lies in forces external both to DPMA and ACM. Various public and private agencies have begun to raise questions about the need for insuring the competence of computer professionals whose activities directly affect private individuals or impact the public interest in some more general way. My personal prediction is that the necessary controls will be established and maintained

by legislation at the state level; there is a long history reaching back into Anglo-Saxon common law that provides the most efficient mechanisms for such controls within the structures of our states' statutes.

None of the major computer technical and professional societies, who must be involved with such actions at the state level, are organized on a state-by-state basis. The IEEE people who design and build the machines; the ACM people who program them and organize the data for them; the DPMA people who operate and manage the installations - all are organized by national or by local chapter boundaries. Within 5 or 10 years, there will be enough activity in state legislatures to create enormous confusion among these three organizations (plus others) as the search starts for state-wide bodies of computer professionals to administer the control system being created by the legislatures. This kind of pressure will force a formal coalition - perhaps merger? - of the major professional organizations to remain responsive to their public charters.

I would be foolish to indicate that these are anything more than personal predictions based upon the facts available now. I am personally determined, however, to insure that the ACM leadership remains particularly sensitive to the question you have rasied and the trends that are working both toward and away from your desired goal of a merger between DPMA and ACM.

Thank you for your interest.

Sincerely,

Wm Carlson

W. M. Carlson

WMC:lb

cc: Mr. R. W. Bemer
Mr. E. Calvin Elliott
Mr. W. L. Konigsford
Mr. G. Smith

bcc: ACM Council
Mr. B. Gilchrist
Prof. E. J. McCluskey
Prof. A. G. Oettinger

Security--J. Haddad

IBM International Business Machines Corporation

Poughkeepsie, New York 12602

Office of Vice President

October 22, 1970

Memorandum to: COSEB

Subject: Security Panel

At our last meeting in September, I outlined the general concepts in mind, highlighted a draft of the panel charter distributed to those assisting me, and reviewed their comments concerning the draft.

Attached is the latest version of the panel charter for your review and comment. I hope to present this to the assembled board at our December meeting and request your response, aye or nay, as quickly as possible.

Sincerely,

Jerrier A. Haddad

JAH/k

Attachment

DATA SECURITY

A computer system can be defined as a collection of people, devices, processes, and procedures assembled to process information. The security of this information is then a function of the measures taken by each member of the system.

We should think of data security as: the availability of hooks and features of hardware and software which allow users to do system engineering and obtain configurations, procedures, and operations which allow the desired profile of security considering the environment, application, and set of threats extant now and in the future.

Data security must not be confused with data privacy. It is important to understand that privacy and security are not synonyms nor is one a part of the other. Privacy is the claim of individuals, groups, or institutions to determine when, how, and to what extent information about them is communicated to others.[1] Security is protecting the integrity of the data by such means as physical protection (i.e. locked rooms), environmental protection (i.e. electromagnetic shielding), encrypting data, operating system procedures, etc. Portions of this protection must be provided by both the computer industry and the users of the systems.

1. Westin, A.E., "Privacy & Freedom", Atheneum, New York 1967

Concern for the security of data, that is, its safety from unauthorized disclosure (whether accidental or intentional), from modification, and from destruction, has been limited until quite recently to a few professionals involved in the application of computers to specific objectives. There is also an awareness by the management of major enterprises of their dependence on the integrity and continued availability of data in their systems. The growth of these concerns suggests the need for an objective evaluation of the ability of the users of computer systems to determine and to achieve an adequate level of data security now or in the reasonably near future.

The efficiency and effectiveness of many federal, state, and local government functions will depend on the timely availability of information. Legislation or other controls extended in an emotional response to the privacy and/or security issue, may so limit the use of electronic data processing as to preclude its use in many of these important applications. Similarly, overly restrictive controls can adversely and seriously impact the operation of essential commercial enterprises, such as retail credit. Conversely, unless necessary legal constraints are provided, taking into account the limitations of today's and tomorrow's technologies in providing data security, it may be impossible to establish important new computer applications such as regional, state, or national banks of medical records.

The growing importance of data security in both the public and private sectors, the dangers inherent in both overly restrictive and, conversely, inadequate legislative controls all suggest the necessity of a thorough study of the following items:

1. Identification of the possible types of data security violations.
2. Assessment of the availability and adequacy of security measures in computer hardware and supporting programs.
3. Identification of those security measures best, or of necessity, provided through physical security or operational procedures.

In view of the rapidly growing importance of data security as a technological problem with far reaching social, financial, and legal implications, it is appropriate that there be established a committee of the Computer Science and Engineering Board to conduct the recommended study and to prepare recommendations for further action by that Board.

DCS--W. Baer

GILBERT BOND

25% COTTON

blcc: W. House
J. Griffith

NATIONAL ACADEMY OF SCIENCES
2101 CONSTITUTION AVENUE
WASHINGTON, D.C., 20418

13 October 1970

ANTHONY G. OETTINGER, CHAIRMAN
COMPUTER SCIENCE & ENGINEERING BOARD
AIKEN COMPUTATION LABORATORY
HARVARD UNIVERSITY
CAMBRIDGE, MASSACHUSETTS 02138

Dr. Walter S. Baer
560 Latimer Road
Santa Monica, California 90402

Dear Wally,

I sorry to be so late in replying to your letter of 28 September but the semester just started and I've had my hands full with a new course and I'm just beginning to get back to Academy business. I think we can indeed look forward to further spirited discussions about CATV, at least over lunch or drinks.

I do agree with you that the digital communication system announcement is something worth looking at. I would appreciate your starting a discussion on this point at our next meeting and by copy of this letter I've asked Jack Kettler to put the matter on the agenda. My guess is that we will meet again in December.

Next time I see you I will try to give you my reading of your enclosure (the February 2, 1970 Telecommunications Reports) and show you how I reach diametrically opposite conclusions from precisely the same text. This stuff is as tricky to interpret as the Bible!

Sincerely yours,

Anthony G. Oettinger

AGO:chm

cc: J. F. Kettler

NAS 5/23

WALTER S. BAER
560 LATIMER ROAD
SANTA MONICA, CALIFORNIA 90402

September 28, 1970

Prof. A. G. Oettinger
Aiken Computation Laboratory
Harvard University
Cambridge, Mass.

Dear Tony:

I hope that our spirited discussion about the future of the CATV industry will be only the first of many!

You may be interested in the enclosed summary of the FCC's ruling on Telco ownership of cable systems. While AT&T indeed may get into the CATV business at some time in the future, they clearly are proscribed from owning systems now. And, however the Comtel issue is eventually resolved, I expect there will be a multi-billion dollar investment in CATV systems in the next ten years.

Anyway, I certainly agree that the Board should not take up a CATV study at this time, particularly one as politically convoluted as the New York City situation. Of far more interest to computing, it seems to me, is AT&T's announcement a month ago that it will have a separate, all digital communications system operating among and within 60 cities by 1974. Depending on the specifics of timing, services offered and pricing, this could significantly reduce the cost of data transmission and thus influence planning for large, interconnected data systems later in the decade. The decisions AT&T makes in the next year or two should have a profound effect on the evolution of data networks.

Perhaps we could talk with John Pierce for a few minutes at our next meeting to see whether there are questions here worth bringing to the Board's attention.

Best regards,

Walter S. Baer

FCC OPENS DOOR FOR WIDE-OPEN COMPETITION FOR WIDEBAND COMMUNICATIONS SERVICES OF ALL KINDS, WITH LOCAL SYSTEMS LINKED BY INTERCITY NETS; BARS TELEPHONE COMPANY CATV AFFILIATES FROM COMPANIES' TERRITORIES

Visualizing wide-open competition for broadband "transmission of all kinds," the Federal Communications Commission Friday, Jan. 30, announced an action which it said is intended "to insure against any arbitrary blockage" of the "gateway" to the "yet undeveloped market for wide spectrum services."

The Commission, in essence, barred telephone companies from having community antenna television affiliates in their operating territories under any circumstances. It also directed the companies, including those who do not have CATV affiliates, not to provide CATV channel service unless the CATV customer is given rights to pole attachment or conduit space if it chooses.

Text of the FCC order was not available at the close of last week but the Commission issued a fairly lengthy press release Friday, Jan. 30. The action was taken by Chairman Dean Burch, and Commissioners Robert T. Bartley, Kenneth A. Cox, and H. Rex Lee, with Nicholas Johnson concurring in the result.

At the same time, the Commission wrote to the American Telephone & Telegraph Co., General Telephone & Electronics Corp., United Utilities, Inc., and Continental Telephone Corp., asking them to freeze their charges for pole attachments and conduit space furnished CATVs and "maintain the status quo."

The FCC announcement regarding the final decision concerning telephone company-affiliated CATVs, in an investigation which it started in April, 1969, said that the FCC was prohibiting telephone companies from furnishing CATV distribution service through affiliated CATVs in the operating territories of the telephone companies.

Further, it said, the communications carriers may not enter into pole line or conduit space arrangements with affiliated CATVs. The Commission reported that it would "broadly interpret the concept of affiliations between the telephone company and its proposed CATV customer."

In addition, it reported that "Any further authority to a telephone company under section 214 to provide CATV channel facilities will be conditioned on a showing that the CATV customer had available, at its option, pole attachment rights or conduit space, not only at the time of the grant but also prior to an award of a local franchise, and that the policy was made known to the local franchising authority."

The FCC announcement said that "a telephone company's preemption of CATV service in a community not only tends to exclude others from

entry into that service, but also tends to extend, without need or ju tification, the telephone company's monopoly position to future broad band cable facilities.

"There is a substantial possibility that broadband cables, in ad tion to CATV services, will make economically and technically possibl a wide variety of new and different services involving the distributi of data, information storage and retrieval, and visual, facsimile, an telemetry transmission of all kinds, the Commission said.

"It added that there is also a real potential that such services will be furnished over regional and national networks consisting of l cal broadband cable systems interconnected by intercity microwave, co axial cable, and communications satellite systems.

"Whether these services will evolve in a common carrier mode or some other institutional structure remains for future determination, the Commission said, noting that at present there is ample basis for regarding the provision of CATV service within a community as, at le one important gateway to entering the yet undeveloped market for the other wide spectrum services.

"The Commission stated that 'it is our purpose to insure agains any arbitrary blockage of this gateway.' The Commission said it exp ed to give continued consideration to all new wide spectrum service ferings, and would continue to encourage full and free competition the development of such services under appropriate tariffs by all in terested parties."

The announcement reported that "Pole line attachment or conduit rights must be offered on a non-discriminatory basis where space fo such facilities can be made available without impediment to the tele phone company's obligation to supply non-CATV communications servic to the public, the Commission said.

"Such rights must be offered at reasonable charges and without due restrictions on the uses that may be made of the channel by the tomer. Existence of technical limitations which might prevent the ing of space for additional lines on existing poles, must be 'convi ingly' demonstrated by the telephone company, and the exceptions mu be limited to the duration of the technical problem, under the term the new rules."

It went on, "The Commission said it had concluded that the en of a telephone company, directly or through an affiliate, into the tailing aspects of CATV services in the community where it furnish communications services could lead to undesirable consequences an cordingly, the primary purpose of the new rule is to prevent such sequences. The Commission said that because of its monopoly posit

in the community, the telephone company generally has effective control of the pole lines or conduit space, and, therefore, is in a position to preempt the market for this service."

In its letters to the major telephone organizations asking them to "freeze" their pole attachment and conduit space charges, the FCC said the requests were made "because of information it has received that telephone companies may be proposing substantial increases in charges to CATV operators for pole or conduit rights."

It recalled its letters to AT&T and GT&E regarding the question of whether their liberalized pole attachment policies result in the offering of communications services. It also noted that tariffs for CATV channel service are under consideration in a long-pending FCC docket.

The announcement stated that "Although it has the matter under active consideration, the Commission pointed out that it has not had the opportunity to evaluate the various contentions made in the AT&T and GT&E letters, or to determine what further action, if any, it should take.

"The Commission added that any action by the Bell, General, United, or Continental System companies to increase rates 'at this time would not be in the public interest and would militate against an orderly review and resolution' of questions concerning pole attachment practices of telephone companies."

In still another action in the CATV field announced last week, the Commission specified it will grant requests for waivers of its rules regarding the frequencies on which microwave carriers serving CATVs are to operate in areas in which there is not likely to be 'substantial frequency congestion in the foreseeable future.'"

The FCC, in February, 1968, adopted rules requiring operation of such systems in the 10.7-11.7 gigaHertz band, and directed those now in the 4 and 6 gHz areas to shift by Feb. 1, 1971, when their present license terms expire. It also stated that all facilities within 50 miles of the principal cities in the top 25 market areas would be required to shift to the higher band when renewing their licenses.

In acting on 37 petitions for reconsideration, the FCC concluded, the announcement said, that "some revisions might be warranted because of new factors to be evaluated--the possible development of a microwave network for CATV systems, the development of domestic satellite communications programs sharing the 4 and 6 gHz bands, the possible development of additional nationwide common carrier networks for data and other specialized services, and new facilities for free or reduced rate educational television relay."

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It stated that "all these factors have an important bearing on the subject," and that it expects "enough development in these and other areas within the next year to help it make a more intelligent determination about the use of these bands."

The press release added, "Recognizing that in sparsely populated areas of the country there is not likely to be much frequency congestion in the foreseeable future, the Commission said, 'pending our final determination on the matter, we will grant requests for waiver. . .where the proposed frequency usage is not likely to adversely affect the development of any major interstate communications route or otherwise be contrary to the public interest." -End-

SENATE COMMERCE ASKS $759,000 IN FUNDS FOR SPECIAL INVESTIGATIONS

The Senate Commerce Committee's annual request for additional funds to conduct special investigations in its areas of jurisdiction, including communications, was formally reported last week, and referred to the Rules Committee. The group is asking for funds not to exceed $759,000. When the Rules Committee takes action, a detailed review of the Commerce group's planned program generally is made available. -End-

deBUTTS TO SERVE AS TELECOMMUNICATIONS INDUSTRY SAVINGS BOND CHAIRMAN

John D. deButts, Vice Chairman of the Board of the American Telephone & Telegraph Co., has been named to the U.S. Industrial Payroll Savings Committee of the Treasury Department, Treasury Secretary David M. Kennedy has announced. Mr. deButts will serve as Chairman for the telecommunications industry for the committee's 1970 U.S. savings bond campaign. -End-

BACKLOG OF FARM TELEPHONE LOAN APPLICATIONS AT HIGH MARK, HAMIL NOTES

Present backlogs of Rural Electrification Administration telephone loan applications amount to two and three quarter years of appropriations under the present level, REA Administrator David A. Hamil has pointed out in his annual report to Congress. Mr. Hamil emphasized the need for capital for both rural telephony and electrification, and pointed to the pending legislation to establish a rural telephone bank (TELECOMMUNICATIONS, Jan. 26).

At the end of the fiscal year, there was a new high of 345 telephone loan requests on hand, totaling $345,900,000, it was reported. During the last fiscal year, because of the volume of loan applications and the limited funds available, 60 applications were reduced by $86,300,000 before approval, he said.

The report noted that at the end of calendar 1968, 32.9% of REA-financed telephone service was one-party. -End-