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Mon  
Oct 17 4<sup>30</sup> pm (1)

Linda Brady se.  
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accidentally  
put wrong date  
on letter 7/13/681-4020  
Joyce Edwards  
Asst.

# AMERICAN PRODUCTIVITY CENTER

File

October 7, 1983

Dr. Carlton E. Turner  
Special Assistant to the President  
for Drug Abuse Policy  
Drug Abuse Policy Office  
The White House  
Washington, DC 20500

Dear Dr. Turner:

I'm pleased that we can get together.

This is short notice and I realize that you do not have a background on what I am proposing for discussion at the meeting, nor on the American Productivity Center, itself.

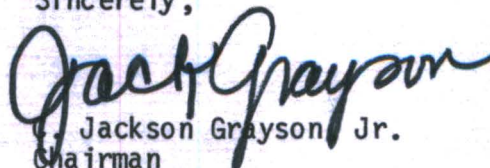
So that you will have a chance to review some materials prior to the meeting, I'm enclosing several things:

1. A "proposal" for a "Computer Network on Productivity Impacts on Alcohol and Drug Abuse"
2. Information on "Networking" and on the "Computer Conferences on Productivity" -- and two publications that tell how computer networks were used for the recent White House Conference on Productivity.
3. Information on APC.
4. My vita so you will know something about me. (Not for ego, but "who is he" purposes.)

You may not have time to read all of this. But it might be helpful to scan, prior to our meeting.

See you ~~Tuesday~~ <sup>Monday</sup> October 17 at 4:30 p.m.

Sincerely,

  
Jackson Grayson Jr.  
Chairman

CJG:jac

Enclosures

cc: Marty Russell  
David Jones

1700E

123 NORTH POST OAK LANE HOUSTON TX 77024 (713) 681 4020



## COMPUTER NETWORK ON PRODUCTIVITY IMPACTS OF ALCOHOL AND DRUG ABUSE

### PROPOSAL

It is proposed that a computer network be created on productivity impacts of alcohol and drug abuse.

### RATIONALE

Alcohol and drug abuse have long been recognized for their debilitating human, medical, and social costs.

But only recently have we begun to recognize the extent of the negative impact of alcoholism and drug abuse on productivity.

And even then, that recognition is not yet widely known.

The Employment and Productivity Subcommittee of the Senate Committee on Labor and Human Resources, chaired by Senator Quayle, held hearings in July 1982 on the "Effect of Alcohol and Drug Abuse on Productivity." The figures presented at the Hearing were astounding.

- o The total national cost paid for health care, days away from work, and lost production from alcohol and drug abuse were estimated at \$70 billion. Half -- \$35 billion -- was related to lost productivity!
- o Between 5% and 10% of the work force suffers from alcoholism.
- o From 3%-7% of the employed population use some form of illicit drug, ranging from marijuana to heroin on a daily basis.
- o Employees with drinking or drug problems are absent 16 times more than the average employee, have an accident rate 4 times greater, use a third more sickness benefits, and have 5 times more compensation claims while on the job.
- o Forty percent of industrial fatalities and 47% of industrial injuries can be traced to alcohol abuse.
- o GAO estimated that among federal workers, alcoholism alone costs taxpayers \$700 million annually.

Though these facts are astounding and known to those working in the field, many employees are unaware of the extent of their own company's problem and do not think of it when they seek ways to improve productivity and quality.



Studies revealed that 50% of the executives from leading insurance, banking, transportation and financial organizations believed that alcohol and drug abuse was "not really a problem" for their organization. Only 1.8% perceived it to be a "very serious problem."

Supervisors are reluctant to make a diagnosis of alcohol or drug abuse, partly from humane reasons and partly to avoid any legal action. And most companies do not want to admit they have people working for them who are alcohol or drug abusers.

Yet the productivity impacts are clearly there:

- o Higher accident rates
- o Decreased product/service quality
- o Increased absenteeism
- o Higher turnover
- o Increased grievances
- o Increased thefts on the job
- o Increased interpersonal and morale problems

A number of companies and unions have established EAP's (Employee Assistance Programs) to work on the problem, companies such as General Motors, DuPont, the New York Times, Adolph Coors, Stroh and Anheuser Busch brewing companies.

There are a number of federal government agencies, public interest groups, medical societies, not-for-profit organizations, and state and local organizations working on the overall problem.

Experience has shown that (1) there are no quick solutions, (2) there is no single way to work on the problem, and (3) no single organization or individual has all the answers.

If we are to make additional progress, we need to find improved ways to link people and institutions together.

### NETWORKING

Almost everyone is familiar with the term "networking", meaning people and institutions linked together some way in order to pool experience, problems and approaches to solutions.

People establish formal and informal networks, for they are powerful and practical tools for spreading ideas and getting implementation:

1. One person has a problem and wants to ask others:
  - o "Have you faced this, and how did you handle it?"
  - o "We tried this and failed. Does anybody else have an idea of how to make it work?"

2. Persons with problems are often unaware of efforts or results achieved by others. Thus, they set up networks to minimize duplication of what others have already done.
3. People seeking information in an area to improve productivity have difficulty in knowing where to go or who to call for information or assistance.

### TRADITIONAL LINKAGES

The traditional approaches by which people communicate and work together in Networks is through telephone, mail, conferences, journals, and face-to-face meetings.

All of these have been, and still will be, used.

But many of these are expensive, time consuming, inefficient, and not very effective.

What is needed is a convenient method that allows continuous linkages with a variety of people in different locations, one that does not require extensive time and travel, and which allows for interchange when and where it is convenient for the participant.

It is suggested in this proposal that a network of people be brought together via the medium of "computer conferencing."

### WHAT IS COMPUTER CONFERENCING?

First, it should be made clear that computer conferencing is NOT "video-conferencing" or "audio-conferencing."

It is conferencing via computers.

It is a system of linking people together using a central computer, computer terminals, and a communication system.

It is not a one-shot meeting. It is an extended process over a period of time.

Every individual in the network has a computer terminal in his or her home or office. These computer terminals are connected by phone lines to a central computer that stores and forwards all of the communications.

These communications originate when one of the members types on a keyboard at his or her terminal. The communication is relayed to a central computer (location unimportant), and is then re-transmitted to terminals of other members of the network.

These incoming communications are read on a video screen as they scroll by, and/or they can be received in hard copy on a printer. The complete record of all communications is constantly available in the central computer, which also houses the conferencing system.



This is not "electronic mail." It is beyond "E-mail." It does have that feature within it, but conferencing also facilitates the group processes of discussion, searching, storing, referencing, document writing, and so on.

The members communicate as often as they wish and when they wish. The system is available about 23 hours a day 7 days a week.

There is a "Moderator". The Moderator helps to set the initial agenda, guides and directs the discussion as it moves along, synthesizes thoughts, and directs on-line projects.

#### ADVANTAGES

The technique just described has several features that make it well suited for this networking function:

1. Computer networking permits individuals to participate who would not otherwise do so because of their extremely crowded office and travel calendars.
2. "Asynchronous" communications allows people to use the system and participate at a time convenient for them.
3. Travel time, costs, and fatigue are reduced.
4. It cuts out "telephone tag" and mail delays.
5. A written record is constantly available of all discussions and readily be accessible by all.
6. The process permits extended and thoughtful dialogue, rather than brief visits or speeches, followed by a few questions, and departure for the next airplane flight.

This technique of computer networking was used by the American Productivity Center (the Center) in preparing recommendations from a diverse, widely separated group of individuals for the recent White House Conference on Productivity.

The Center brought together "electronically 175 senior level leaders from business (yes, real executives do type!), labor, academia, and government who engaged in dialog for a period of four months. The results of this process and technique are described in the enclosed booklets.

The majority of participants agreed that computer conferencing greatly enhanced traditional methods of networking.

People have asked why this technique has not been widely used before if it has these advantages? Several reasons. One, until now computer terminals have not been widely available, and were expensive. This has all changed with the amazingly rapid spread of personal computers at reasonable prices.



The second is the lowered cost and wider access to computer communication links -- coinciding with the increase of "user-friendly" sophisticated conferencing software.

Finally, there is a growing recognition of the need for networking. No one individual or organization has the answers. Integrated, team-oriented work relationships benefit all.

#### AMERICAN PRODUCTIVITY CENTER

The American Productivity Center will organize the network, stage the Kickoff meeting, train the members on the computers and conferencing system, do on-line "hand-holding" to help with technical difficulties, and arrange intermediate face-to-face meetings.

The Center has the expertise and staff to perform these tasks, having just concluded seven computer conferences with 175 senior level people for the White House Conference.

The Center is a non-profit, tax-exempt, 501 (c) (3) corporation, located in Houston.

It has a staff of about 35 people, and a Board of Directors of some of the leaders in the United States from corporation, unions, and government. (See attached information.)

The APC is spreading the use of these computer networks with two main objectives:

1. To increase the productivity of individuals and organizations involved in the networks.
2. To increase the productivity of the nation by linking individuals and organizations who can more efficiently and effectively work together.

#### COSTS AND FEES

The costs associated with a computer network are: (1) computer terminals, (2) conferencing system, (3) communications system, (4) APC costs of organize and conduct the network.

Participants are asked to pay some of the costs directly:

##### I. EQUIPMENT

1. Computer terminal & modem

##### Options:

- a. Use equipment existing in own organization
- b. Purchase: Approximately \$2,000
- c. Lease from APC: Approximately \$50/month

- II. CONFERENCING SYSTEM (\$75/month)
- III. COMMUNICATIONS SYSTEM (approximately \$50/month)
- IV. ANNUAL FEE

Non-contributors to the Center	- \$1,800
Founders/Sponsors/Members	- \$1,500
Read only	- \$ 600

#### SUMMARY

The Center believes that this computer network on productivity impacts of alcohol and drug abuse could help not only individual organizations, but the entire nation.

We hope that interested participants will join.

If further information is wished contact:

Marty Russell, Director  
American Productivity Center  
123 North Post Oak Lane  
Houston, Texas 77024  
713/681-4020

C. Jackson Grayson, Jr.  
Chairman  
American Productivity Center

1698E

## VITA

C. JACKSON GRAYSON, JR.

### Present

Chairman  
American Productivity Center  
123 North Post Oak Lane  
Houston, Texas 77024  
(713) 681-4020

### Personal

Born October 8, 1923, at Fort Necessity, Louisiana  
Military Service: 1943-46, U. S. Navy, South Pacific Area,  
Fire Control Officer, Light Cruiser, Lt. (jg.)  
Children: Christopher Jackson Grayson, born 1959  
Michael Wiley Grayson, born 1968  
Randall Charles Grayson, born 1970  
Daniel Jackson Grayson, born 1980  
Married: Carla O'Dell

### Academic Background

B. B. A. Tulane University, 1944  
M. B. A. University of Pennsylvania, 1947  
D. B. A. Harvard Business School; 1959  
Master's Thesis "The Yardstick Power Program of the  
Tennessee Valley Authority"  
Doctoral Dissertation "Decisions Under Uncertainty --  
Drilling Decisions by Independent Oil and Gas Operators"  
Honorary Scholastic Fraternity: Beta Gamma Sigma

### University Experience

Instructor -- School of Business Administration, Tulane  
University, 1947-49  
Assistant Professor -- School of Business Administration,  
Tulane University, 1953-55  
Assistant Professor -- Graduate School of Business Administration,  
Harvard University 1958-59  
Associate Professor -- School of Business Administration, Tulane  
University, 1959-63  
Associate Dean -- School of Business Administration, Tulane  
University, 1961-63  
Professor -- IMEDE, Management Development Institute,  
(Switzerland), 1963-64  
Visiting Professor -- Graduate School of Business, Stanford  
University, Spring 1967  
Dean and Professor -- School of Business Administration,  
Tulane University, 1963-68



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Dean and Professor -- School of Business Administration,  
Southern Methodist University, 1968-75

Visiting Professor -- INSEAD, Fontainebleau, France, Summers  
1972, 1973, 1975

#### Other Academic Experience

Instructor, Graduate School of Credit and Financial  
Management; Motorola Executive Institute; Sun Oil  
Executive Program; Northwestern Transportation Center

Participant in Seminars on business gaming, quantitative methods,  
information and control systems, computers, financial models

Member: American Accounting Association, American Finance Association,  
Operations Research Society of CPA's of Louisiana, The World  
Future Society

Courses taught: Accounting, Finance, Business Policy, Quantitative Analysis,  
Statistics, Management Information and Control Systems

#### Professional, Administrative, Other Experience

Certified Public Accountant, 1948-present  
Reporter, New Orleans Item, 1949-50  
Special Agent, Federal Bureau of Investigation, Washington  
D.C., 1950-52

Partner, James E. O'Neill & Associates, an export-import  
business, New Orleans, 1952-53

Assistant to Vice President, Tulane University, 1953-55  
Farm Manager, C. J. Grayson Farm, Fort Necessity, Louisiana

Consultant: Comptroller General of the United States

Consulting Editor: Financial Executive's Handbook, 1968

Chairman, Price Commission, Washington, D. C. 1971-73

Counselor to the Chairman, Cost of Living Council,  
Washington, D. C. 1973

Councillor, The Conference Board, 1975-Present

Member: The President's Commission for a National Agenda  
for the Eighties, Washington, D. C., 1980  
The President's National Productivity  
Advisory Committee, 1982

Board of Directors:  
Browning-Ferris Industries  
Harris Corporation  
IC Industries  
Lever Brothers  
Overhead Door Corporation  
Potlatch Corporation  
Sun Company  
Tyler Corporation  
Woodway National Bank

## Publications

### Books:

Decisions Under Uncertainty: Drilling Decisions by Oil and Gas Operators, Division of Research, Harvard Business School, Boston, 1960

"The Use of Statistical Techniques in Capital Budgeting," Chapter 5, Financial Research and Management Decisions, John Wiley & Sons, New York, 1967

Confessions of A Price Controller, Dow Jones-Irwin, Homewood, Illinois, May, 1974

### Articles and Monographs:

"Bayesian Analysis - A New Approach to Statistical Decision-Making," Journal of Petroleum Technology, June, 1962, pp. 603-607

"Introduction of Uncertainty Into Capital Budgeting Decisions," N.A.A. Bulletin, January 1962, Section 1, pp. 79-80.

"Computer Applications in Oil Exploration Decisions," Processings of Symposium on Computers in the Mineral Industries, Stanford University, June 24-28, 1963.

Co-author, "Business Schools and Education for International Business," Report of the Task Force on Business Administration and Public Administration, The Professional School and World Affairs, Education and World Affairs, New York, 1967.

Education and Technology, PP No. 11, The Diebold Research Program, The Diebold Group, Inc., New York, 1967.

"Expectations of Inflation - The Purpose of the Price Commission," Vital Speeches of the Day, March 1, 1972, pp. 306.

"Prices, Productivity and Decontrol," The Conference Board Record, April, 1972, pp. 14-16.

"Who's to Blame for Inflation?" Reader's Digest, October, 1972, pp. 116-120

"Controlling Prices is an Educational Experience," Fortune, October, 1972, pp. 76-79, pp. 180, 182, 184, 186, 188.

"Eight Ways to Raise Productivity -- And Profits," Nation's Business, November, 1972, pp. 30-31, 35-36

"Another Look at Productivity," Vital Speeches of the Day, December 15, 1972, pp. 134-137.



"The Battle for Price Control," The Conference Board Record, January, 1973, pp. 14-16.

"Ten Months of Stabilization - An Insider's Evaluation," Business Economics, January, 1973, pp. 26-32.

"Learning More About Productivity," Financial Executive, February, 1973, pp. 24-27.

"Management Science and Business Practice," Harvard Business Review, July-August, 1973 pp. 41-48.

"On Designing a Workable Phase 4," Wall Street Journal, July 10, 1973, pp. 24.

"How to Make Productivity Grow Faster," Business Week, July 14, 1973, pp. 15-16

"A New Kind of Management Training," Association Management, April, 1973, pp. 42-48.

"Let's Get Back To The Competitive Market System," Harvard Business Review, November-December, 1973, pp. 103-112. (McKinsey Award Winner, 1973).

"Let's Get Out of Controls - Completely," Wall Street Journal, February 6, 1974, pp. 12.

"An Expanded Concept of Productivity and Its Implications for Economic Policy Makers," Sloan Management Review, Spring 1974, pp. 83-88.

"Inflation and Free Enterprise," Inflation in the United States: Causes and Consequences, The Conference Board, May 21, 1974, pp. 52-58.

"America Needs a New Productivity Center," Machine and Tool BLUE BOOK, September, 1974.

"Man With A Mission ... 'We Need An American Productivity Center'," Industry Week, November 1, 1976.

"Saints, Burly Sinners, Castrated Buffalos, and Dead Cats," The Wharton Magazine, 1975.

"Productivity, Inflation, and Education," Lecture at GAO, Evaluating Governmental Performance: Changes and Challenges for GAO, Government Printing Office, July, 1975, pp. 246-260.

"Incomes Policies as a Supplementary Tool," Answers to Inflation and Recession: Economic Policies for a Modern Society, The Conference Board, April, 1975, pp. 91-95.

"To Be or Not to B-School," Today's Manager, October, 1975, pp. 8-12.



"The Political Economy," Proceedings of the Fortieth Executive Conference, The Institute of Paper Chemistry, May 1976, pp. 9-24.

"The Productivity Slide," Dun's Review, September 1976, pp 11.

"The Business of Business Schools, Part I: The Attack," The Wharton Magazine, Spring 1977, pp. 46-51

"Slowdown in Government Controls Urged," Commitment, Summer 1977, pp. 1-2 & 9.

"An Ex-Price Controller's View of Controls," The New York Times, December 7, 1976.

"Will the U.S. Keep Its Productivity Lead?," Assembly Engineering, May, 1977, pp. 18-22.

"Productivity: A Call for Action," National Journal, March 25, 1978, pp. 492.

"Why U.S. Workers are Producing Less," U.S. News & World Report, May 1, 1978, pp. 95-96.

"Pushing Productivity," Dun's Review, July, 1978, pp. 37-39.

Three R's of Productivity," Time, September 25, 1978, pp. 69.

"Productivity: Whipping Inflation Through Increased Output," Association Management, October, 1978, pp. 109-114.

"Making 'Sense and Cents'," Enterprise, November, 1978.

"Productivity - Not Controls," The Conference Board, Information Bulletin, May, 1979.

"The 3Rs of Productivity Improvement: Responsibility, Recognition, Reward," Training, July, 1979.

"Have We Ignored Productivity?" Production Engineering, September, 1979.

Productivity's Impact on Our Economic Future," The Personal Administrator, December, 1979, pp. 21-35.

"Mr. Productivity," New York Times, February 17, 1980.

"The Apostle of Productivity," The Mainliner, May, 1980.

Productivity: The Dismal National Situation is not Inevitable for any Individual Company," Boardroom Reports, September 8, 1980.

"Dr. C. Jackson Grayson On Productivity Improvement," Training and Development Journal, September, 1980.

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"Productivity: An American Dilemma:", The MGIC Newsletter, September/October, 1980.

"Training's Crucial Role in the Coming Battle to Restore Productivity," Training, October, 1980.

"The Need for a "National Productivity Program," Management World, January, 1981.

"The Japanese Productivity Challenge A Modern Rashomon," Productivity Brief 1, April, 1981.

"A 'Hands-on' Approach to Manage Productivity," Chief Executive, Spring, 1981.

"A View From the Outside Of the Inside Of Upside Down," a Chapter in Tax-Based Incomes Policies, The Fraser Institute, Vancouver, 1982.

"Emphasizing Capital Investment Is a Mistake", Wall Street Journal, October 11, 1982, Editorial Page.

0360E

NETWORKING

CENTER  
PRODUCTIVITY  
AMERICAN



On April 4, 1983 twenty people gathered in Houston to launch the first of seven American Productivity Center Computer Conferences.

In the room were leaders from business, labor, academia, government and not-for-profit institutions. Don Ephlin from the UAW. Gene Kofke from AT&T. Ed Lawler from the University of Southern California. Audrey Freedman from The Conference Board.

They spent two days hammering out an agenda for their computer conference "Reward Systems and Productivity" — issues such as gainsharing, collective bargaining, employment security, profit-sharing and executive compensation.

They also (somewhat nervously) sat at computer terminals for instruction on 1) how to use a computer, and 2) how to use the computer conferencing procedure. Despite apprehensions ("I don't know how to type!"), protests, skepticism ("I don't think I will ever master this beast!"), these executives became quick and enthusiastic learners ("Wait'll I get home and show my kids what I can do!")

In the next 122 days, they exchanged over 400 comments and 10,000 lines of dialog. They shared ideas. Debated. Disagreed. Supported one another. They alternated between discouragement at the scope of their task and excitement about progress.

What emerged at the end was a set of recommendations that formed the basis of the "Reward Systems and Productivity" Interim Report to the White House Preparatory Conference on Private Sector Initiatives.

This same process was repeated six more times as the other APC Computer Conferences were launched in April. They were:

- |               |                                       |
|---------------|---------------------------------------|
| • Technology  | • Training                            |
| • Quality     | • Cooperation in the Workplace        |
| • Health Care | • Information Workers/<br>Measurement |

Most of the participants had never before personally used a computer, never sat down and "keyboarded" inputs, manipulated disks, used a computer conferencing system, or operated a printer.

In a 3-month period, the seven conferences generated about:

- 2,170 comments in the conferences
- 12,600 private messages
- 177,335 lines of communication (in total)

What emerged, besides the recommendations forwarded to the White House Conference, was truly a "network" — a linking of people who otherwise would not have found it possible to exchange views in depth, work together interactively, come to know one another, and engage in a common task productively.



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*"The individuals you have assembled for these teleconferences have impressive backgrounds, and I am confident that their participation through computer teleconferencing will contribute to the White House Conference effort."*

*Roger B. Porter  
Deputy Assistant to the  
President for Policy  
Development*

*"Indeed you have an impressive list of participants in your computer teleconferences, and I am sure that you will be successful in developing issues for the White House conference. The teleconferencing sounds like an interesting technology and certainly is consistent with my own use of computer terminals here at Treasury and in the private sector."*

*Donald T. Regan  
Secretary of Treasury*

*"I know that the remarkable group of people you have put together and your leadership will make a considerable impact on the future productivity of our country."*

*Frank Pace, Jr.  
Chairman and Chief Executive  
Officer, National Executive  
Service Corps*

*"It appears that your firm is facilitating an exchange of information between the public and the private sectors which will have far-reaching effects on employee productivity and the quality of working environments in the United States."*

*Strom Thurmond  
United States Senator*

*"I am encouraged that so many capable people have been enlisted in the effort to stimulate productivity growth."*

*Malcolm Baldrige  
Secretary of Commerce*

*"The work that you are doing is exciting and innovative. It appears to be a real pace-setter for the future."*

*Orrin G. Hatch  
United States Senator*



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### WHY?

Why was computer conferencing chosen?

The charge of the Preparatory Conference on Private Sector Initiatives was to gather the best thinking of leaders from business, labor, academia, and government on the subject of productivity improvement. The best people were very busy people, with limited time to do anything, much less to read, write, and exchange thoughts. They were scattered all across the United States, in every time zone. All had extremely crowded personal calendars and travel schedules.

Typically such groups try to work together by face-to-face meetings, mail, and telephone calls. These communication processes, while effective for certain purposes, have severe constraints and frustrations.

Personal schedules conflict for joint meetings. Travel is expensive and time-consuming. Mails are slow. "Telephone ping-pong" wastes days. People arrive at meetings late and often leave early to catch planes. Real interaction is hurried and limited.

Computer conferencing, while not the complete answer to overcoming these constraints, does alleviate many of them, and also actually adds some features to the group processes that other media lack.

Computer conferencing proved to be a very productive answer.

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### WHAT?

What is computer conferencing?

First, it is NOT video or audio conferencing.

It is a system of communication using computers, computer terminals, and a communications system. Every participant has a computer terminal — in his or her home or office. These personal computer terminals are connected by phone lines and satellite links to a central computer that organizes and stores all of the communications. The communications are typed by the participant on a keyboard at his/her terminal, the communication is relayed to the central computer, and re-transmitted to terminals of other participants.

Communications are read on a video screen as they scroll by, and/or they may be received in hard copy on a printer. The complete record of all communications is constantly available in the central computer, which also houses the powerful conferencing software that allows the participants to do more than just send and receive communications.

The conferencing system that was used is called "EIES" (Electronic Information Exchange System), housed in a computer at the New Jersey Institute of Technology. The computer's physical location, however, is unimportant, as it could have been anywhere in the United States (or even abroad) where communication links are available.

Second, computer conferencing is not "electronic mail" although it does have that as a feature. Beyond "E-mail", conferencing facilitates the process of discussion, searching, storing, editing, referencing, document writing, and so on.



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## HOW?

Almost every participant came to the Center in Houston, initially, to set the computer conference discussion agenda and to be trained on the computer and the conferencing system. A computer system was sent to the participant, who then began to use the system — slowly at first because of the unfamiliarity — and then faster as the system became more familiar and easier to use.

The system was available 7 days a week, and about 23 hours a day, with the bulk of the use occurring in the early morning and late evening hours. Some participants used the system (“signed on”) daily — even 3 and 4 times a day. They became almost “addicts.” Some used it every other day. Some several times a week. A few (about 5%) never used the system at all, or — for all practical purposes — effectively dropped out from lack of participation.

The amount of “connect” time was extremely high, given the level of participants, crowded schedules, and other demands on the individuals.

Every conference had a “Moderator.”

The Moderator’s role was to help set the initial agenda for discussion, to guide and direct the discussion as it moved along, to make “weaving” and “summarizing” comments, to synthesize thoughts, to stimulate the group, to remind them of priorities, and — eventually — to act as a ramrod and slave-driver to get the recommendations out and the report written.

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## WHERE?

Where did most of this activity take place?

There were face-to-face meetings in the very beginning to start the process. These were held at the APC in Houston. In addition, a few participants in three of the conferences got together once during the process to discuss issues face-to-face. And there was one meeting in Houston in the middle of the process where Moderators assessed their progress and made suggestions to one another.

But the majority of the activity — 95% of it — took place over the electronic network from computer terminals located mostly in the participants’ homes — in their dens, living rooms, or guest rooms. One had his terminal in his barn and two had them in bedrooms. Several started out with the terminals in their offices, but soon took them home.

A few who travelled a lot borrowed terminals of friends in other cities, or carried portable terminals, and were in daily communication. Some even took terminals overseas with them.

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## WHEN?

The work was divided into two time phases.

Phase I ran from the Kickoff sessions in April to the date of July 8, when an “Interim Report” of each conference was pulled off the system. These seven Interim Reports became the written document distributed at the White House Pre-Conference on Private Sector Initiatives, held in Pittsburgh on August 2-4.

Phase II covered the time from July 8 to August 18 during which

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time participants were to review, edit, alter, refine, enlarge their initial recommendations in Phase I, and incorporate discussions at the Pittsburgh Pre-Conference.

August 18 was the date for the submission of the "Final Report" of the APC Computer Conferences — the Final Report submitted to the main White House Conference on Productivity held September 22-23, 1983.

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## SPONSORS

These conferences would not have been possible without direct and indirect support of many individuals and organizations.

Some of the computer and peripheral equipment used in the conferences was purchased. But the majority was either loaned or donated:

- |                         |                                    |
|-------------------------|------------------------------------|
| • Apple IIe's           | Apple Computer, Inc.               |
| • Hewlett-Packard 120's | Hewlett-Packard Company            |
| • Hayes Smartmodem's    | Hayes Microcomputer Products, Inc. |
| • Silent 700's          | Texas Instruments, Inc.            |
| • Telecomputing System  | iXO Corporation                    |

GTE Telenet, Inc. donated Telenet time toward the communications costs.

The conferences used the computer conferencing system called EIES located at the New Jersey Institute of Technology (NJIT). NJIT donated half its normal fee to the project.

A computer software system for indexing, searching, retrieving, and analyzing information was donated by NDX Corporation, and computer time to run this system was donated by Infonet Group of Computer Sciences Corporation.

In addition, each Conference was individually sponsored by one or more organizations:

- |                                |   |
|--------------------------------|---|
| • Cooperation in the Workplace | U.S. Department of Labor<br>Dresser Industries, Inc.<br>Harris Corporation<br>TRW, Inc. |
| • Health Care                  | Warner Lambert Company  |
| • Information                  | Arthur Young & Company  |
| Workers/Measurement            | Bank of America<br>CIGNA Corporation  |
| • Quality                      | General Dynamics Corporation<br>McDonnell Douglas Corporation<br>Olin Corporation       |
| • Reward Systems               | Maritz, Inc.  |
| • Technology                   | Hewlett-Packard Company   |
| • Training                     | U.S. Department of Education  |

The National Science Foundation (NSF) sponsored a planning grant during the conference process.



---

Those individuals who contributed significantly to the conferences as Moderators include:

Anthony Carnevale  
Paul Delker  
John Iglehart  
Steven Leth

Malcolm Lovell  
Carla O'Dell  
Richard Rosenbloom  
William Ruch  
Paul Strassman

We would also like to give special recognition to William Werther, Professor of Management, Arizona State University, who served as "Moderator of Moderators."

In addition, special thanks go to the staff of the APC and Dan Carter, Elaine Kerr and Guru Sangat Khalsa.

Without the support of all of the individuals and organizations named above, the conferences simply would not have been possible. They have the deepest appreciation of the Center and the participants for making this possible. Thank you.

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## CONTINUATION

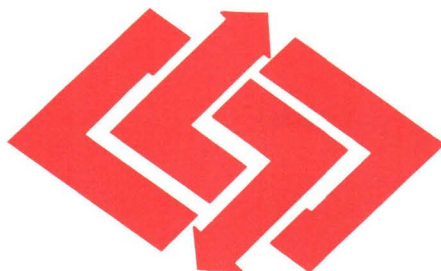
Though computer conferencing focused in this project on obtaining recommendations for the White House Conference on Productivity, its applicability is much broader.

Used properly, computer conferencing offers tremendous productivity-improving potential for the work of:

- Trade associations
- Professional societies
- Government agencies
- Universities
- Non-profit institutions
- Profit-making firms
- Community associations
- Public interest groups
- Task forces/Special committees
- Military

Therefore, the APC is going to 1) continue and expand some of the existing groups, and 2) create new groups following the White House Conference.

How this can be used for a variety of purposes and institutions is discussed in the following section.





The term "computer networks" is used from here on, because the words "computer conferences" imply, to some, that the only purpose of bringing people together via this technique is to conduct a "conference."

Not the case.

This technique of bringing people together electronically, via computers and communication links, is an *integrative* mechanism that fits *many applications*.

Hence, the term "computer networks." It conveys more of the actual potential of this process, for it enables busy people in wide-spread locations (even overseas) to join together in "networks" — to become involved over an extended period of time for a variety of purposes.

- To exchange information.
- To generate and exchange ideas and innovations.
- To work together on a common project.
- To disseminate information rapidly and receive feedback.
- To exchange opinions and interact.
- To unite in seeing a common goal.
- To learn.
- To search for compromise, consensus, and majority positions.
- To obtain commitment.
- To improve decisions.

Such linking is accomplished now through traditional means:

- |                         |                        |
|-------------------------|------------------------|
| • Face-to-face meetings | • Publications (books, |
| • Telephone             | articles, newspaper,   |
| • Mail                  | journals)              |
| • Electronic mail       | • Telegram and telex   |

Computer networking is not a complete replacement for any of these traditional methods. In fact, it can be used more powerfully in conjunction with many of these. But neither is it a mere extension of some of these. It is unique. And it has some distinct advantages as a way of linking people together.

Most people presume that the ultimate and best form of meeting is "face-to-face." And while face-to-face unquestionably has some advantages that can never be duplicated, there are some disadvantages that people often forget:

- Typically a small number of people dominate the discussion.

---

<sup>1</sup>Special recognition should be given to several people who have been leaders in developing the technique/process of computer conferencing, which is also known as "teleconferencing, computer-mediated conferencing, networking" and also other names.

Bob Johansen and Jacques Vallee and others did pioneering work at the Institute of the Future. Murray Turoff built the nucleus of the present day EIES during the period of wage-price controls as part of the emergency preparedness system. Significant research has been done by Starr Roxanne Hiltz and Elaine Kerr on applications and use of computers for these purposes.

There are many good books on the subject, but two for readers to get started with are 1) Starr Roxanne Hiltz and Murray Turoff, *The Network Nation*, Addison-Wesley, New York, 1982 and 2) Elaine Kerr and Starr Roxanne Hiltz, *Computer-Mediated Communication Systems*, Academic Press, New York, 1982.



---

*"I congratulate you on the innovative approach your organization has taken to improve on the stock of knowledge in the productivity area. Your teleconferencing idea will indeed have far-reaching results, and I look forward to being kept informed as the process evolves."*

*John Volpe  
Chamber of Commerce of the  
United States*

*"It looks like you have found an excellent and productive use for modern computer technology. I imagine you would not otherwise be able to bring together such a large, diverse and distinguished group of people from so many areas of the United States."*

*Samuel R. Pierce, Jr.  
Secretary of Housing and Urban  
Development*

*"I and others in the Department, believe there is considerable promise in using computer based teleconferencing as a way for busy people to save time and travel money while still being able to discuss important issues. I am sure your projects will demonstrate this promise."*

*Richard J. Power, Director  
Defense Productivity Program  
Office*

*"You are orchestrating a fascinating experiment in communication. Based on my brief exposure last week, I'm impressed by both the medium and the message."*

*J. David Roessner  
Georgia Institute of Technology*



- Only one person can speak at one time. Others are reduced to passive states, often thinking other things.
- Crowded agendas usually cause some items to be dropped out, especially near the end of the meeting.
- Verbal people tend to dominate the discussion, and persons with senior rank are typically deferred to.
- Travel to the meeting is costly, time-consuming, and tiring. People start departing early to catch planes.

Similar disadvantages can be named by almost everyone for the other traditional forms of communication and linkage: telephone tag, mail delays, and unread stacks of publications. Computer networks are not the "answer" either, but they can overcome or mitigate some of the deficiencies of some of the other methods, and they have some distinct advantages because of both the hardware and software:

- Reduction of travel.
- Reduction of "telephone tag".
- A permanent written record of all discussions and convenient, quick access to prior comments.
- "Asynchronous" communication, meaning that people can use the system at a time convenient for them.
- Increased group resources (more people are available who otherwise could not participate).
- Different communication linkages — cross-groups, and more lateral links within and outside organizations.
- Increased equality of participation.
- Increased ability to collect quick information, data, group opinions, and surveys
- Faster dissemination of news, data, updates, abstracts, etc.
- Increased quality of participation due to time for reflection and some research before response.
- Greater sense of community with people even through geographically widely dispersed, or even in different fields & institutions.
- Tailoring of the communications process to meet a group's particular characteristics, project goals, and types of participants.

Contrary to some common assumptions, the barriers to the use of computer networking are not those most commonly presumed:

- It is not necessary to understand anything about computers to learn and utilize the system.
- A person does not have to be an expert or even a fast typist to use the system.
- The conferencing structure, in its simplest form, can be learned in several hours.

As with any form of communication, there are also shortcomings and disadvantages:

- Computer networking can never entirely replace some face-to-face functions: eye contact, non-verbal communications, instant response to comments, press-the-flesh emotional contacts.
- People can more easily fail to respond to someone's comment or question.
- Dialog among participants can drift more easily.
- Some can just "drop out" of the conference with little effect.



- 
- Electronic communications have a greater chance to be misunderstood than face-to-face dialog.

However, for many group activities, computer networking can be useful and productive in the accomplishment of their task. Usage is already expanding as more people experience the process, and several forces are accelerating this trend:

- Declining cost and widespread use of personal computers.
- Declining cost and increased availability/reliability of communications networks.
- Increased sophistication of computer networking software.
- Growing "user friendliness" of computers and communications.
- Increased time and travel demands on over-worked executives.
- A growing recognition in the notion of the need for integrative, team-oriented work relationships.

Applications are growing. And more are being added. The following are some suggestions as to possible uses of computer networking by various institutions. (This list is suggestive, not exhaustive.)

---

#### *INDUSTRY ASSOCIATIONS*

- More closely connecting key members of their association (Board members, committee members, study groups.)
- Carrying out committee project assignments.
- Conducting surveys for guiding association work, and for giving information to policy makers.
- Collecting quick guidance/data from members on special issues or projects.
- Disseminating selected publications and data to members.
- Collecting financial and productivity information, analyzing, and disseminating to members on an index basis.
- Responding to members with on-line requests for information, data.

#### *FIRMS*

- Linking corporate officers with divisional managers (beyond electronic mail).
- Linking plant managers/foremen across plants to share common problems and disseminate ideas.
- Facilitating the work of a task force or company project.
- Linking technical people together across plants and divisions.
- Providing a network relationship among members who share the same function in different company divisions (e.g., Personnel, Quality, Marketing, etc.).
- Link members of productivity committees, councils, and involvement teams.
- Link corporations to associations, legislative services, data bases in an interactive mode.

---

### *PROFESSIONAL SOCIETIES*

- Planning quarterly and annual meetings.
- Joining professionals together (as ARPANET has done) to have geographically dispersed groups function in a tightly knit professional relationship.
- Holding some "meetings" via computer network, including some participation from international members.
- Manuscript collection, editing, discussion, review and dissemination.
- Special conferences and sub-conferences on knowledge areas, research topics, and public policy issues.
- Membership contacts and services.
- Dissemination of data, professional society news, legislative reports, abstracts, etc.

### *GOVERNMENTAL*

- Elected officials communicating with geographically dispersed constituents on a regular or continuing basis.
- Conferences on special topics for mayors, governors, city managers to share ideas, data, develop recommendations.
- Opinion surveys and referenda on issues.
- Shared productivity-improving information among public officials across the nation in departmental lines (e.g. sanitation, environmental agencies, welfare agencies, police, fire, transportation, etc.).

### *EDUCATION & TRAINING*

- Productivity courses: short intensive courses, semester-long courses, or a year-long series of courses.
- Networks among teachers to exchange ideas, techniques, data.
- Conferences among school administrators: city-wide, state-wide, or national.
- National educational data bases — on line.
- Linking of training directors in firms, together with others — academics, union leaders, government officials.

These are only illustrations. Groups themselves could suggest more applications, and the challenge is to fit the medium to fill the need. It is best done as a participatory design process with communication between the network systems designers and the users.

Two researchers in this field (Peter and Trudy Johnson-Lenz) use the phrase "groupware" to describe this process. It begins with the group making known its purposes, process, outputs and barriers to be overcome. Then the computer network systems designers suggest specific structures and procedures. As Murray Turoff, designer of EIES, has observed:

"We are now beginning to realize that when we design a communication structure to operate within an interactive computer system for a group of humans, what we are really designing is a human system."

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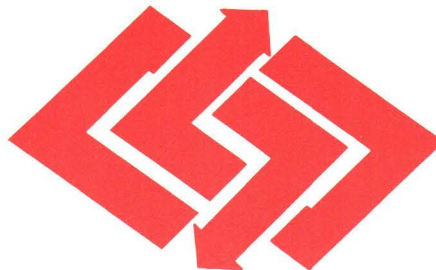
## **American Productivity Center**

The American Productivity Center is creating a series of computer networks with two main objectives:

1. Increase the productivity of the organizations that are involved in the networks.
2. Increase the productivity of the nation, by linking individuals and organizations who can more efficiently and effectively work together (business, labor, academic and government).

Those who are interested in exploring such computer networking applications, or assisting in this effort should contact the APC. Computer networking is a way of working together and getting things done — more productively.

C. Jackson Grayson  
Chairman  
American Productivity Center





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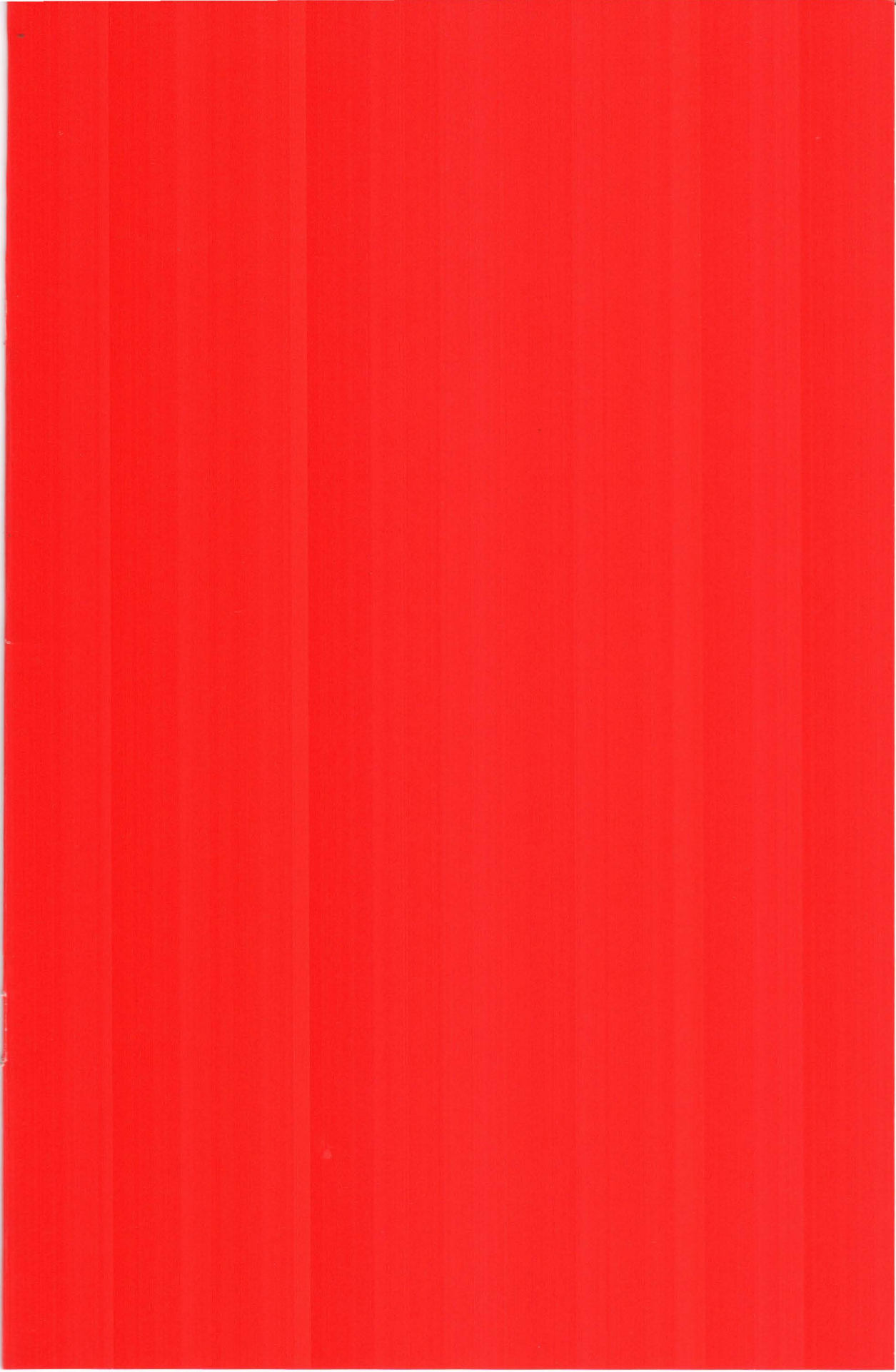
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