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COMPUTER CONFERENCES ON PRODUCTIVITY

A Final Report for
The White House Conference
on Productivity



INTRODUCTION

These pages contain the “final reports” of seven national computer conferences on productivity.

They represent the thinking of 175 senior-level leaders from business, labor, academia, and government brought together “electronically” by the American Productivity Center from April to August, 1983. These leaders met “on-line” for this four month period, using computer terminals, telephone-satellite communication links, and a computer conferencing system called the Electronic Information Exchange System (EIES).

They exchanged information and ideas, discussed, debated, and finally hammered out their recommendations in seven areas involving productivity, quality, and quality of work life:

1. Cooperation in the Workplace
2. Health Care
3. Information Workers/Measurement
4. Quality
5. Reward Systems
6. Technology
7. Training

What you will read in the following pages are summaries of the conference reports and recommendations. Several of the seven conferences advocated a National Medal for Productivity Achievement and a recommendation for this award is also included. You will find the names of the participants involved in these discussions, and the “Sponsors” who helped with equipment and financial resources to make these conferences possible.

The title says it is their “final report.”

It is, in one sense.

These participants distilled their 177,335 lines of communication into these reports so that they could be forwarded as recommendations to the White House Conference on Productivity, September 22-23, 1983.

It is definitely not final in another sense.

It is merely one stage in a process that began four months ago and will have no ending until some of these recommendations are improved, implemented, or abandoned.

As one participant said at the end:

“I am damn well not going to have spent all this time just spitting into the wind. I intend, for one at least, to DO something.... Anybody else game?”

It would be repetitious to repeat, preview or extensively summarize the recommendations of all seven conferences. These are best read and understood in the context of each report.

However, there are threads, commonalities, strong themes that do stand out, and what follows is my electronic-eye’s version of these supra-threads.

There are ten.

Application

Over and over again, the conferences stressed the importance of applying what we already know. Yes, they agreed, we always need to increase knowledge and technology—to do research, invent, and discover. But where we have fallen down in recent years has been in the implementation of research, theories, and technology that we have created and espoused, but not applied.

Participative management, quality, robotics, and transistor technology are but a few of the concepts and techniques which Americans created. But others, particularly the Japanese, took these and put them into practice and, in many instances, improved them in the process. Conclusion: If Americans fail to implement, then we will continue to fall short, no matter how many funds we invest in research, education, employee programs, quality, etc.

“What we lack,” said one participant in a high technology firm “is not basic knowledge, but the determination, persistence and ingenuity to use productively what we already know.”

Human Factors

“Our greatest resource is our people. Treat them with respect, challenge their intelligence, appeal to their innate sense of quality—in short, encourage their full participation—and productivity and quality will result. I’m not spouting Behavioral Science 101 either; I call it just plain old common sense and good business sense.”

So commented one participant. But every single conference, without exception, stressed the same need for attention to the people side of productivity, quality, and quality of work life.

Not everyone agreed on which human factors were most important or how such increased emphasis ought to be manifested. But it was the single largest body of comments, occupying as much as 25-30 percent of the total volume of remarks. There was the usual amount of blame-throwing, admissions of mistakes and neglect, and many suggestions for others to change. But there was



also a great amount of sincerity about the need to change and the willingness to change.

At the same time, there was also fear and caution about the rash of new empty "people programs" strong on rhetoric ("People are our strongest asset"), but often empty on commitment, real involvement, and willingness to change traditional attitudes toward hierarchy, decision making, and sharing of information and rewards.

"Now, it's time to mobilize the treasure of human resources for the challenge of productivity." This was a manufacturing executive speaking, not the Director of Human Resources.

Education and Training

Readers might expect that the discussion about education and training would occur mostly in the "Training" conference. Such discussions did take place there.

But the necessity for increased and improved education and training in secondary schools, universities, firms, and the military occurred consistently across all conferences. It wasn't only "more" education that participants recommended. (Although they did say that.) They stressed that changes are needed in content, method and point of delivery, and teaching methodology. This, they added, must be coupled with the need to "unlearn," to adapt to a different world with different skills and attitudes.

Such discussions often took place in the context of a need for more attention to information worker productivity—their training, involvement, and greater investments in information technology. Others cautioned that while a shift toward an information society was occurring, it need not mean the end of so-called "smokestack America," "...but the end of poor management, low quality, poor training, and non-involved employees."

Management

Just as economists are now discovering that the economy does not respond in traditional ways to many fiscal-monetary policies of the past, managers in many American firms are also discovering that many of the management systems, methods, and techniques of the '50s and '60s no longer work as well.

Many of the participants, managers themselves, made these points in self-indicting comments, "We have met the enemy and it is us." They pointed out that what they were talking about was not tinkering or fire-fighting ("circling the wagons and stomping on ants") or a return to business as usual when the recession was over. Rather it was a major change, and that very little real progress

could be made toward solving our productivity or quality ills until managers were willing to make a change in the methods, systems, attitudes, functions, and style of present managerial behavior.

A fundamental shift.

They also cautioned against quick-fix programs often poorly conceived, started for the wrong reasons, focused on single dimensions, and with little real commitment or intent to change. "Vigor is often faked in our company. But it always shows." But there were encouraging reports of successful programs where real changes were occurring and results were improving both the bottom line and quality of work life.

Integration

Each report contains a variety of recommendations for individual actions. But few participants felt that any one particular action was the "answer."

There must be a variety of actions and such actions must be integrated, they stressed repeatedly. No single variable or echo, but a network of interactions are needed to integrate "functional interfaces" where specialization and differentiation have blocked productivity and quality improvements.

Such coherence and integration do not come easily, nor all at once, they cautioned. It threatens the specialists' turf, challenges the way people have done things for years and fights institutional traditions, whether in firms, unions, government, or health care agencies. "But if we don't solve this one," said one manager, "all the effort will amount to nothing but a lot of sound and fury. We've split the business in parts for years, and now we have to put it back together again."

Employment Security

One of the most interesting, and often heated, discussions came around the subject of employment security. Though unions have long been advocates of greater employment security, rarely have American managers been even willing to discuss the subject and certainly not eager to initiate discussion of greater security "for fear that the genie of lifetime employment would be let out of the bottle."

But such discussions did take place in the conferences. And it was a subject that appeared in most of the conferences, and often evoked the traditional fears of higher fixed costs, reduced flexibility, freezing of inefficient workers, an erosion of management prerogatives and an invitation to employee complacency. In other words,



as one said, "We will have greater security and lower productivity."

On the other side (and these were often managers) proponents of greater employment security pointed out the advantages of lessened resistance to technological change, greater flexibility of assignments, and lower costs due to improved productivity and quality. They also pointed out that some American firms have high employment security (Delta Air Lines and IBM) and high productivity, and that many large U.S. firms have high de facto employment security, but are not getting the benefits because of their lack of explicit support of it.

No consensus was reached. However, clearly this issue of employment security is on the minds of the majority of the participants as an issue that must be addressed and some solutions found.

National Focus

"The consequences of declining competitiveness to our national life style, welfare, and security have not been articulated as a national problem with national visibility," said one participant, "and what is missing is a sense of national commitment to regain our stature as a high productivity nation in an international marketplace."

This participant is not known as an "alarmist," and was joined by many other participants with similar statements. Their theme was that while the nation had become more "aware" of the problems, (1) they were still not sufficiently aware, and (2) we needed to have a stronger statement of the problem and call to action by leaders from business, labor and government.

"I see no evidence yet that this nation is willing to make the raising of productivity and quality national goals. If we don't make people understand that their personal well being is directly related, we may just not get the job done at all. We need a national focus—a crusade for productivity."

Private Sector

At the same time that a "national focus" was being urged by some, almost everyone felt that the battle for revival of American productivity would not be won through government action: "The success or failure of this nation will be determined in the executive suites, factory floors, and union offices, by managers and workers in the private sector. Or...it won't be determined at all."

Another: "Once given a goal which quite clearly involves both the national interest and the survival of industry or enterprise, there is probably no more powerful engine for

change and accomplishment than the private sector of the U.S. economy."

These sentiments support the overall mission of the seven computer conferences. The reports were primarily written for delivery to the White House Preparatory Conference on "Private Sector Initiatives" held in Pittsburgh on August 2-4, 1983. Therefore, the audience of these reports is primarily business executives, union leaders, employees and academics.

But there are recommendations to government (including recommendations that government improve its own productivity!). Some warned against government action, feeling that government's role should be confined to that of an information provider, catalyst, and facilitator. Others argued that government was already involved—heavily—and that its actions were uncoordinated (often contradictory), and that we needed a more coherent approach. The arguments did not go very deep into the "industrial policy" debate, but stuck mostly to what the private sector could and should do.

Labor-Management-Government

Regardless of attitudes toward what government, business, or labor should do individually, a common theme was that the adversarial actions among the groups now dominated the relationship and were unproductive. "This nation is shooting itself in the foot," said one.

One of the participants pointed out that President Reagan himself said in a January 9, 1981 Wall Street Journal editorial that, "Today the United States stands virtually alone among the industrialized nations in the adversary nature of the relationship between its government and the business-industrial sector."

While many agreed that we need to work together in a more cooperative and consensual way, the question that stumped most was "How?" Repeatedly, people said we "had to" find some national networks to facilitate cooperation and build consensus. The private sector was urged to search for some "platform" or some "institutional mechanism" to involve all parties.

Several solutions were proposed, but none gathered sufficient support to make substantive recommendations. "But what is critical" pointed out one person, "is not the form, but that somehow we get needless controversy behind us as quickly as possible and proceed toward cooperativeness that a changing world and economy make absolutely imperative."



Action

"I don't know if Kondratieff, Jay Forrester, Herman Kahn or Dr. Pangloss are right. But I do know that **SOME-THING** has to change. We've got to **DO** something, or we're all dead!"

Fear was expressed in most of the conferences that "the results of this conference will end up in the dusty archives of the government and will have little influence on either public policy or private sector action."

One even suggested (seriously) that what we may need to do is to contrive a crisis to galvanize action, "if we can think of a scenario that might be creditable!" There was, indeed, a common feeling that what this nation faces is surely a crisis "that will not go away no matter how much we try to ignore it or dismiss it as some temporary hiccup."

Repeatedly, there was a call for action, for rhetoric, and a fear that no matter how well it was written or delivered that it would amount to shouting "fire" in an empty theater.

But even the strongest skeptic of whether this nation has the will to "get it together" felt that one of the greatest values of the conference might not be in the Report itself, but in the "process" generated by the conferencing among the 175 leaders who could do something—who could act. "I think we should consider each other to be the primary audience for the substance of our discussions, and the White House Conference then serves mainly as the recipient of our published report. The action happens out here."

Another responded, "I'm not worried that our recommendations will work. They will. But I am worried about whether we have the will to make them work."

I agree.

Real, long-lasting progress will come, if it comes, from the daily attempt to do things differently and better in the private sector. It comes from managers, unions, and employees taking risks, making changes, working together, assuming personal responsibility for their acts, and then doing better tomorrow than yesterday.

None of the causes of the slowdown are so deep or intractable that we cannot overcome them. But all are so deep seated that improvement will come slowly. And only with persistence, attention to detail, and a willingness to change. "If we don't change," said one participant,

"American power will float like a bee and sting like a butterfly."

Summary

I sat at the crossroads of these conferences, and the electronic traffic scrolling by my screen was an incredible window on the American state of thinking about productivity, quality, and quality of work life.

Never has there been such an extended dialogue in such a frank and open manner by practical leaders on these subjects. It was a unique and historic conference. These were no isolated academics engaged in theoretical debates, no public officials posed for political posturing, no special interests pleading their causes. They were a sincere, open cross-section of American leaders, speaking their minds (often from their own homes late at night and on the weekends) from a variety of perspectives and talking freely about their views, fears, and hopes.

There was deep concern.

A participant, not known to be given to purple prose, expressed his concern one Sunday evening:

"There is some feeling that this problem we face is temporary. That it will go away with the recovery, or that we merely have to find the right combination of magic incantations or techniques.

"I am convinced it is far more serious. It will be of much longer duration than we presently think, and the American public will have to give up its dreams of the automatic promised land forever.

"There is no question in my mind that the forces loose in the world today will inexorably force us to face the problem of producing competitively or sinking from the scene as did Greece and Rome."

There were also hope and encouraging examples of changes underway. Successful programs. Case studies. Anecdotes. Changed attitudes. Excitement again in plants and offices that were dying.

I, too, am encouraged. I do see progress. I believe what we are doing is necessary, but not yet sufficient. We need to do more—and better. As Will Rogers said, "Even if you are on the right track, you'll get run over if you just sit there."



We need the determination of a Rocky, the winning dedication of a Vince Lombardi, the conviction of a Winston Churchill. We need the optimism of Herman Kahn, the humanity of a Ghandi. We need to be lean, hungry, quick, dedicated to "excellence," oriented toward inventive action—not meaner than a junk yard dog, but smarter than a barnyard cat.

"Nothing great in this world," said Hegel, "is accomplished without passion."

We are in an economic race for our lives.

This Report says that we have a good chance to stay No. 1. But...policies do not change reality. Response does.

Decisions do not change reality. Execution does.

Read the reports.

And act.



C. Jackson Grayson, Jr.
Chairman
American Productivity Center
September 1, 1983



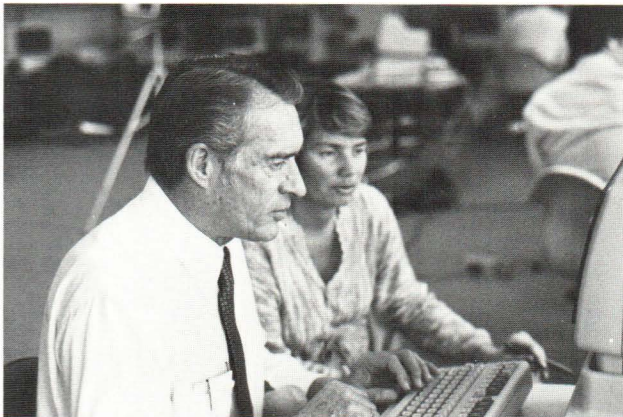
GATHERING THE BEST

The initial impetus for these reports was the announcement late in 1982 that a preparatory conference on "Private Sector Initiatives" would be held in advance of the White House Conference on Productivity.

It fell to the American Productivity Center's chairman and president Jack Grayson to chair that pre-conference and to help gather the best thinking of leaders from business, labor, and academia about what the private sector was doing and could recommend to improve the nation's productivity.

The best people were busy people, with limited time to do anything much less to read, write, and exchange thoughts.

Typically, such groups try to work together by face-to-face meetings, mail, and telephone calls. These communication processes, while effective for certain purposes, labor under the constraints and frustrations of participants' crowded calendars and travel schedules. Real interaction is hurried and limited.



Computer Conferencing

Computer conferencing, while not the complete answer to overcoming these constraints, seemed to be a solution that could actually add some features to the group processes that other media lack. (A relatively new approach, computer conferencing is not to be confused with video or audio conferencing.)

The computer conferencing network put together by the Center to gather comment for the Preparatory Conference used computer terminals, a communication system, and a conferencing system called Electronic Information

Exchange System (EIES). Every participant had a computer terminal—in his or her home or office—connected by phone lines and satellite links to a central computer that organized and stored all of the communications.



The Process

Participants read communications on a video screen and/or received them in hard copy on a printer. Conferencing progressed asynchronously—that is, participants did not have to be on-line at the same time in order to communicate. The complete records of all communications remained constantly available in the central computer housed at the New Jersey Institute of Technology. The conferencing system software facilitated a full range of processes—discussion, searching, storing, editing, referencing, document writing, and surveying.

Initial meetings were held at the Center in April for participants to plan agendas and become familiar with the computers and conferencing system. About 175 participants, divided among seven networks, set about the task of developing recommendations for the White House Preparatory Conference on Private Sector Initiatives.

Participants in each network exchanged views and experience-based advice on one of the following productivity topics:

- Cooperation in the Workplace
- Health Care
- Information Workers/Measurement
- Quality
- Reward Systems
- Technology
- Training

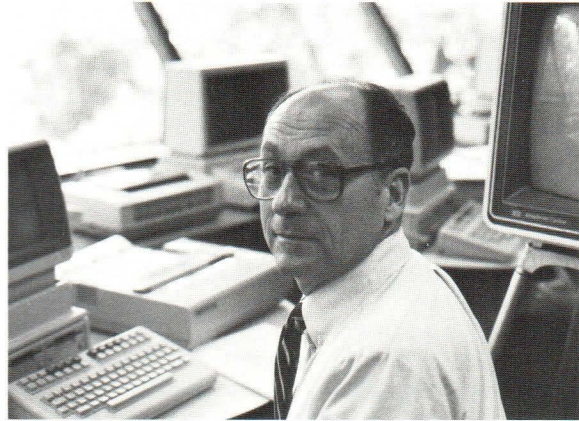
Each conference had a "moderator" whose role it was to guide the discussions through the agenda, stimulate com-



ments, summarize discussions and eventually compile the recommendations and report for the White House Preparatory Conference.

What follows is a summary of the reports presented during the Private Sector Initiatives Conference held August 2-4, 1983, and now prepared in final form for the White House Conference on Productivity, September 23-24.

Full copies of the report are available upon request by contacting the Computer Networks Department at the Center.



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 Apple Computer, Inc.
- Hewlett-Packard 120 Hewlett-Packard Company
- Hayes Smartmodem Hayes Microcomputer Products, Inc.
- Silent 700 Texas Instruments, Inc.
- Telecomputing system iXO Corporation

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

The conferences used the computer conferencing system called EIES, a part of the Center for Information Age

Technology, 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.

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

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, as well as Dan Carter, Elaine Kerr, and Guru Sangat Khalsa.

Conference Summary

COOPERATION IN THE WORKPLACE



Beginning in late April 1983, and brought to a halt four months later by publishing deadlines, 32 people from a wide variety of occupations and backgrounds have spawned via the computer this report on Cooperation in the Workplace.

We were 13 people from the business community, three from organized labor, two government officials, four from academia, seven foundation officials or private consultants, one congressman, and two former secretaries of labor.

It was a group that without the computer would never have been brought together over such a period, to engage in such an in-depth dialogue.

The conclusions reached represent, at best, a consensus with many footnotes. Time prevented the reaching of other conclusions which might have shed light on additional worthwhile approaches to increasing our nation's productivity.

There was unanimous agreement, however, that achieving competitiveness in domestic and world markets was of utmost importance to the welfare of every American and that increasing our productivity represented an important ingredient necessary to reaching this goal. We also agreed that the most important source of untapped productivity gain lay in the more effective utilization of our human resources. "Cooperation in the Workplace" was the term we used to describe the change in corporate governance and union and government leadership we believe is required to regain America's once pre-eminent economic position.

The Computer Conference on Cooperation in the Workplace has resulted in four recommendations—two to the private sector, and two to the federal government. These recommendations have been constructed to serve as a set of guiding principles as workers, their unions, managements, and the various departments of government strive to understand better their roles in restoring America's pre-eminence in advances in productivity and the resultant international competitiveness in world markets. Central throughout the discussions was the appreciation of the correlation between worker involvement, labor/management cooperation, and organizational effectiveness in achieving productivity advances.

Recommendations:

1. Management should move toward a less authoritarian and more interactive style of corporate governance at all levels of their organizations.

It is difficult to envision meaningful cooperation in the workplace with its concomitant productivity gains without a shift from the traditional style of managing organizations to a style giving greater emphasis to employee involvement and participation. Employee involvement enables employees at all levels of an organization to use their knowledge, skills, and abilities more effectively in their work. The extension of authority and responsibility to lower organizational levels in the judgment of this conference is a more appropriate style of corporate governance for both the nature of the work to be done and the nature of the American work force in the decades ahead. An interactive management style creates an atmosphere in which employee commitment can be enhanced, meaningful contributions toward resolving productivity problems can be made, and the satisfaction of legitimate needs of both employer and employee can become common objectives.

Opinion was divided as to whether extension of authority and responsibility would change the "power relationship" within an organization. While some argued that the "power relationship" would indeed be altered, those taking this position maintained that such redistribution of authority would work toward increasing organizational effectiveness. The predominant view, however, was that the greater involvement of employees throughout an organization in decisions affecting the cost and quality of their work product would not only increase organizational effectiveness, but would enhance the status of the managers choosing this method of governance.

2. Leaders of America's organized workers should accept a greater responsibility for the competitiveness of the organizations in which their members work, thus enhancing their members' long-term interests, including job security and share of national wealth.

The conference was in agreement that it is in the interest both of industry and of organized labor in a highly competitive world trading system that unions accept an important role in increasing the competitiveness of the enterprises with which their members are associated. While "dividing the pie" is still a major responsibility of organized labor, increasing its size must rank as an equal objective. Through constructive bargaining and leadership in the workplace, union representatives can significantly and positively impact cooperative efforts directed toward reducing costs and improving quality. This may require some short-term sacrifices in exchange for longer-term benefits.

Many participants expressed the conviction that a union could only cooperate with management in increasing competitiveness if management in turn recognized the union's



right to exist as an institution in a free society and to bargain responsibly with them to achieve the legitimate needs of both institutions.

3. The federal government in a free society cannot compel cooperation between the worker and management, but should play a role in the creation of a climate in which this cooperation may flourish.

There is a legitimate public interest in reducing labor strife and encouraging productivity improvement. Therefore, government should offer such technical assistance and information as would promote cooperative endeavors and encourage the optimum use of human resources. Appropriate governmental activities would include creation of a clearinghouse for information, conducting and supporting research, sponsoring regional and industrial conferences, and preparing educational and training materials on cooperative efforts.

4. Although the means of achieving long-term worker security rests primarily with workers, their representatives and management, government has a clear responsibility to moderate the human impact of the competitive process.

In order to proceed vigorously to achieve the productivity required by competitive forces, we must be cognizant of the threat of job loss associated with new technologies and/or organizational change. A comprehensive program will be needed to assure employment security. This does not mean protecting the job a worker currently holds, but it does mean providing a worker reasonable opportunities to qualify for and obtain other employment.

Management should consider employment security an important corporate goal. A management commitment to employment security would include utilization of redundant personnel in other areas of the company where possible, adequate advance notice to workers of impending product and technological changes adversely affecting employment, and providing retraining and job search assistance for permanently separate individuals.

The government must accept a responsibility for providing assistance to the displaced worker. Initiatives suggested by the Conference ranged from the examination of new legislation providing broader services to the displaced worker to the adoption of new policies to encourage investment in human assets.

"A new understanding must be developed in which the employee is entitled to expect challenges from the job, information and support from the employer, and the employer could expect initiative and commitment from the employees."



COOPERATION IN THE
WORKPLACE CONFERENCE

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PARTICIPANTS:

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Productivity has become a major issue in the American economy. A part of this broad concern has been the performance of the nation's health care system, a vast and growing enterprise that now consumes more than 10 percent of the Gross National Product (GNP). Reflecting this broad concern, the American Productivity Center (APC) convened a computer conference in April 1983 to identify areas of potential productivity improvements in the health care industry. Significantly, of the computer conferences convened by the APC, the health sphere was the only economic sector singled out for exclusive examination. Such treatment reflects the soaring growth of health care, as well as the difficult productivity issues it faces now and in the future.

The health care industry is coming under closer public and private scrutiny for one overriding reason: it increasingly consumes a larger share of the GNP. During the recent recession, while most other sectors were declining, the health care industry demonstrated its capacity to grow in tough times, at a rate that matched its prosperity in earlier periods. For example, while the prices for all goods and services grew at four percent during 1982, medical care prices increased at 12 percent. During this same period, there were no generally discernible improvements in the health system's productivity.

Generally speaking, productivity is defined as creating a higher quantity or quality of results (outputs) with proportionately fewer resources (inputs). Defining productivity in health care, though, becomes difficult because the ultimate product, good health, is so elusive. The computer conference wrestled early and often with a definition of productivity in health care before most participants agreed to accept the generally accepted definition.

The health care computer conference convened with a recognition among participants that, because of the way medical care is paid for in the United States, little attention has been given to worrying about the system's productivity. Added to this fact, and complicating the search for ways to fashion a more productive system, must be a recognition that medical services are highly prized in American society and the average consumer gives up only with hesitation the traditional ways that care is delivered in the United States.

Payment for care today is largely shaped by a third-party reimbursement system. Third-party payors insure about 90 percent of the care delivered in American hospitals; thus patients and providers of care have not been unduly concerned about the size of the bill. Physicians as well have been largely oblivious to productivity concerns because hospitals have generally been able to supply any technology or support service they have requested. Sel-

dom are physicians informed through information feedback mechanisms of the resources required to implement new technologies or support services, or what alternatives may be available.

It seems that economic spheres, be their products medical care, automobile or electric kitchen ranges, are probably no more productive than they have to be to live within the market constraints they face. For organizations, prosperous times (that is when revenues exceed expenses by a significant amount) tend to breed productivity losses; hard times (when revenues come close to matching expenses) tend to force economizing behavior, which ultimately results in productivity gains. As long as we have a health care system that does not face serious constraints, budgetary in particular, society should not expect high levels of productivity. Health care is certainly not unique in this regard. Any economic sphere that operates without significant restraints tends to be less, rather than more, productive. Another way to think about medical care is to recognize that the patient's fee is the provider's income. So to the extent that productivity gains threaten these revenues, they will be unwelcome among health care providers.

The APC's computer conference on health care and productivity concluded that economic incentives, structured in a fashion so as to make providers of care largely insensitive to its cost, are the root of the health system's productivity problems. Flowing from that overriding conclusion were a number of recommendations on changes the private and public sectors could make that would address the issue of productivity in the health sphere. Conferees recognized that change is never very easy, particularly when it involves the livelihood of well-trained and well-respected professionals, the future of hospitals, and the configuration of a massive enterprise—the health delivery system.

Recommendations:

1. Retrospective, cost-based reimbursement for hospitals should be phased out and replaced with prospective payment schemes that place institutions at some financial risk and would also reward these same institutions for cost-reducing behavior. The need for this basic change in the way hospitals are paid applies equally to private insurers and the government. A variety of approaches should be experimented with, including prospective budgets, prospective rates, capitation arrangements, and voluntary caps. Ongoing evaluation should track the performance of the various approaches.



2. Physician payment methods should be examined with a view toward designing payment approaches that place physicians at economic risk for their medical decision-making. Gains in productivity and efficiency that accrue as a result should be rewarded in the process.
3. Consumers should be sensitized to the high cost of medical care, particularly hospitalization, through cost-sharing arrangements that require patients to pay a percentage of the cost of care. Consumers also should be encouraged, through private and public plans, to join alternative delivery systems that have demonstrated productivity gains through provider payment arrangements that encourage cost-consciousness on the part of physicians, such as health maintenance organizations and preferred provider organizations.
4. The private sector and government should thoroughly examine the need for creating an organization that would be charged with assessing the safety and efficacy of medical technologies, with an eye toward promoting those technologies that demonstrate cost-efficiency and productivity improvements.
5. Medical technology manufacturers should place a greater emphasis on documenting productivity gains that result through the use of new and existing products. Private insurers should encourage this process by requiring that technology producers document the value of their products and hospitals confirm this productivity before insurers pay for care rendered with the assistance of these products.
6. The development of publicly accessible data bases which will make the population-based analysis of the rates of consumption of medical care by geographic areas possible should be encouraged. More extensive study of why these rates of consumption vary so greatly also should be undertaken by private purchasers of care and the government. Such information will make productivity improvements in health care possible by providing third-party payors a new and potentially powerful tool to better manage the provision of services to their beneficiaries.
7. Hospitals and physicians, with the active participation of private employers and federal and state governments, should develop better measures to insure that delivered medical care is appropriate. Through such measurements, an important contribution to improved productivity could be made by reducing unnecessary hospitalization and ancillary procedures and shifting the site of care to less expensive modalities, where appropriate.
8. Congress should enact legislation that places limits on the tax-free nature of employer contributions to health insurance. Such limits would make employers and employees more sensitive to the cost of medical care and thus would improve the system's overall productivity.
9. The private sector, working with government, should develop specific programs for health care professionals which emphasize concerns about the cost and productivity of medical care. Medical and other health professional schools should certainly be involved in this exercise.
10. Serious study should be given to creating a private sector organization that could serve as a clearinghouse for information on health care and productivity.

"The root problem facing the health care industry is a relative absence of economic incentives that encourage health decision-makers to be more cost-conscious. There are steps that could be taken by the private sector and government to refashion these incentives in ways that would enhance productivity, encourage innovation, reward leadership, and maintain a high standard of medical care."



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This report summarizes work done in the conference on "Information Worker Productivity and Productivity Measurement," in preparation for the White House Conference on Productivity to be held in Washington, D.C. on September 22-23, 1983. The computer conference was comprised of 34 specialists drawn from business, government, and academic organizations. The conference was initiated with a meeting in Houston in April, 1983. This summary is based on the views of conference participants as presented during a computer conference which included an exchange of 300 conference comments and an innumerable amount of private messages among conference participants. This summary also reflects presentations at a recent meeting in Pittsburgh and takes into account discussions between speakers and audience members.

Even though "productivity" is increasingly identified as the key missing ingredient in speeches, newspaper articles, books, and discussions about the future of our economy, it remains a highly elusive concept at the level of an individual firm. Business enterprises do not report what their actual productivity results for the entire organization have been. If "productivity" of a business is reported at all, it is always defined in partial terms. It was impossible to find a single textbook on business economics or on financial reporting that would instruct how to implement productivity measurements or productivity budgeting so as to make "productivity" one of the key performance indicators for a business. Yet, productivity of the entire economy is really the result of productivity achievements by individual firms.

This conference has therefore concentrated its attention on the subject of productivity measurement, at the business level, as the key requirement for making further progress in bringing about a "productivity" orientation in everyday management concerns by the private sector.

The second concern of this Conference dealt with the increasingly dominant effects of "information workers" on the economic performance of businesses. "Information workers" are almost totally concentrated in the "overhead" accounts of businesses and are thus removed many layers from clearly identifiable measures of output. They may also account for as much as 70 percent of all salaries and wages paid in the U.S. economy. The information worker's contribution to the productivity of enterprises becomes the key determinant of economic performance and of competitive viability in an age when management know-how and technological capability are the basis of excellence in obtaining results from any operation. Lurking in the background is also the prospect that projected massive investments in information technology to support information worker productivity may indeed be

misused in the absence of a good understanding of how to evaluate information worker productivity results.

Thus, the purpose of the conference was to develop a set of recommendations for private sector action guidelines as well as for government action which would further one or both of the following goals:

- Improve awareness and understanding of factors affecting the productivity of information workers in the United States economy.
- Develop useful methods of measuring the productivity of information workers.

The recommendations are listed below. Following a period of review and amendment by the recipients of this document, these recommendations will form the basis of the presentations to be made to the White House Conference on Productivity in September.

Recommendations:

1. Business and government should consistently use reported productivity results, at the business enterprise level, as a means for: guiding further productivity improvement efforts; justifying wage and salary increases; granting tax incentives and receiving government support; awarding bonuses and incentive payments. Reporting of actual productivity results should be included in regularly published financial and operational reports and should be an integral part of the goal setting and budgeting process for any business.
2. The ratio of "labor value added" divided by labor costs should be used as a measure of labor productivity, at the business unit level.
3. The adjusted ratio of "labor value added" (after subtracting operations labor costs) divided by information worker costs should be used as the measure of information worker productivity, at the business level of analysis.
4. Below the business unit level, diagnostic productivity measurements should be developed which are specific to the individual operational situations, but which sum up the productivity results computed for the entire business unit.
5. Organizations should install standard productivity reporting methods integrated with generally accepted financial reporting practices.



6. Services provided by information workers should be subject to external market pricing and to competitive options for determining the amounts of resources used.
7. In the absence of market-driven options, information workers should be subject to an internal marketplace for simulating a competitive environment. The flexible allocation of resources should be regulated by means of competitively priced payments for services and by means of competitive benchmarking of the quality of the service.
8. Productivity measures based on financial information should be supplemented by a systematic collection of subjective ratings from the recipients of the information worker's services.
9. Establish "information workers" as an occupational category designated by the classifications of the Bureau of Labor Statistics. Set up a GNP reporting scheme in which information products and information services are separately classified for the purpose of input/output analysis.
10. Identify the characteristics which can be found in highly productive information worker organizations and reach consensus as to the applicability of these characteristics in delivering improved productivity results.
11. Reduce the emphasis on case by case justification of isolated information technology purchases. Instead, examine the overall effects of investments on business unit productivity and on the quality of services.
12. Establish a federally-funded agency for promoting the goals of productivity-oriented performance and for developing practices that would yield improved productivity indicators, including methods for measuring the productivity of information workers.

"This Conference grappled with the fundamental issues of how to identify the contributions of 'information workers' to the delivery of productivity accomplishments within a specific business organization."



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The standard of living in the United States is determined by the productivity of its economic system. Organizations in both the private and public sectors consume resources to produce and distribute products and services in response to market mechanisms and social pressures.

Too often when productivity is discussed, attention is focused on the quantity of the products and services produced and consumed with little attention paid to the quality of the outputs. But any discussion of productivity cannot ignore the importance of output quality. Essentially, quantity without quality is meaningless.

The purpose of this computer conference is to focus on the quality aspect of productivity. Particular attention has been placed on private sector initiatives because, ultimately, it is the private sector organizations that must accept responsibility and provide leadership for improving the quality of products and services produced in the United States. That action is needed now.

Members of the Quality Computer Conference, representing manufacturing and service firms, consulting, government, and academia, are acutely aware of a national problem: a decline in the demand for American-made products and services in domestic and international markets partly, if not primarily, because of the relative level of quality. If we are to maintain and improve our standard of living, we must improve productivity, and a critical dimension of productivity is quality. We must establish a national objective with the highest priority to improve the quality of America's products and services to a level that is second to none and that meets the needs and expectations of customers both domestic and foreign.

The Quality-Productivity Connection

Resources of labor, capital, materials, and energy are combined with technical knowledge and managerial know-how to produce products and services for domestic consumption and foreign export. It is simple economic truth that if we can produce more with the resources we use, we will increase the standard of living, reduce inflation, and create the economic strength necessary to insure sustained high levels of employment. Many of the economic problems we face today can be traced to a slow or declining rate of productivity growth. The consensus of the members of this conference is that improvements in the quality of products and services produced can substantially improve productivity and help to reverse the trends that have led to the weakened economy today.

If a process produces substandard quality products and services, several outcomes are inevitable:

- Failure to meet customer expectations leads to

declining sales, market share, profits, and economies of scale.

- Defective products must be recalled, returned, replaced, reworked, and/or scrapped, all of which consumes more resources to meet a customer need that should have been met with the original resources used.
- Poor quality in services leads to many of the same results: loss of sales and market share as well as the need to find and correct errors, compensate for the inadequate service, and perhaps perform the service again in the proper way. Again the result is the unnecessary consumption of additional resources.
- If substandard becomes the norm, the reputation of American-made products and services is eroded in the minds of the consumer. Whether the poor reputation is justified or not, it is a difficult task to change it. Far more resources are consumed to reverse a downward trend than to sustain an upward trend.

Each of the results listed has a detrimental effect on productivity by causing resources to be diverted to the detection and correction of poor quality rather than the production of additional output that would add to national wealth. It is a simple axiom, but "do it right the first time" is a cornerstone to improving productivity.

Members of the Quality Computer Conference agree that insufficient attention has been devoted to the productivity-quality connection. If all members of society—consumers, workers, managers, union leaders, educators, government officials, and lawmakers—understood and appreciated the interrelationships of quality, productivity, profitability, and long-term economic stability and progress, it would be a monumental step toward solving the problems we now face in the U.S. economy.

Cooperation from Government, Education, Organized Labor, and the Worker

In an effort to do our part in the quest for improved quality, members of the conference have formulated specific recommendations for private sector initiatives. Although these recommendations are directed primarily to the CEOs of private industry, we must stress that the problem cannot be solved by management alone.

In some of the recommendations, support and action from federal or other levels of government is explicitly or implicitly requested. The federal government is in the position to enhance or to thwart many of the actions taken in the private sector to improve product and service quality. We sincerely hope that a continuing dialogue can be maintained to learn, perhaps from the Japanese model,



where private industry and government can work cooperatively to a common purpose and national goal, while preserving the tenets of the free enterprise system.

Education feeds private industry with the most important, most critical of the resources: people. It is in the education system that much of the knowledge, skills, and attitudes are formed which workers bring to the workplace. It is time for private industry to accept more responsibility and play a more active role in assisting educational systems to develop the human resources in its formative stage to provide the foundations and prerequisites for a richer, more meaningful, and more productive work life.

Management, union leaders, and workers are all in the same boat. If the boat leaks, all get wet. Although each plays a necessary role in the functioning of our economic system, the relationship among the roles can be examined for ways to improve the functioning of the American economy while preserving the integrity of each consultant group.

The recommendations that follow, therefore, require action by the chief executive officers of private sector organizations and the cooperation and support of leaders of government, labor, and education. Members of the conference believe that commitment by private sector CEOs is necessary to make quality improvement a reality. The CEO is in the best position to act and thereby provide the leadership within and outside the organization to establish quality as a top priority in the production of American products and services.

Although discussion of issues is a necessary requisite, the true output of this conference is a series of specific recommendations for private sector initiatives.

Recommendations:

1. Implement a quality awareness campaign at the national and private sector levels which will clearly demonstrate that rapid improvement in quality and productivity is essential to U.S. economic survival.
2. Private sector organizations should develop a strategic action plan to guide and direct goals, policies, and procedures for quality and productivity improvement.
3. Private sector organizations should work actively with education systems at all levels to help integrate into the education of all citizens concepts of quality and the crucial role that quality plays in the U.S. economy.
4. Awards, recognition, and incentives for quality should be implemented at all levels—from a national award for quality to recognition of individuals, groups, and organizations for contributions to improved quality.

Each recommendation is supported and justified in the body of this report. A plan for implementation is provided in as much detail as possible.

Members of this computer conference share the conviction that quality is both a critical problem and a vast opportunity for the private sector of the economy. Recommendations in this report are submitted in an effort to sustain improved quality in American products and services and to redirect our resources to more productive ends.

"There is lack of awareness of the seriousness of U.S. quality problems and corporate leadership often subjugates long-term quality improvements to the short-term pressures of meeting schedules and reducing costs. Workers read the signals from management and operate accordingly. Significant changes must take place within the corporation and throughout society to restore quality to the priority it deserves."



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Reward systems are traditionally thought of as fair compensation, adequate benefits, safe and comfortable working conditions, and personal recognition for a job well done. These are, of course, important. But in the changing, competitive world in which we now live, they will not be enough.

Productivity stagnation, fierce competition, and new work values mean we will have to define reward systems far more broadly than we have in the past. Employees are asking for more information about their jobs and business, the opportunity to solve problems and participate in decisions, and some assurance that contributing to productivity will not lead to unemployment. Firms are seeking greater flexibility in work rules and assignments. They want to tie pay more closely to performance. To reconcile all of these needs, minor changes in organizations will not be enough. What is required is a fundamental change in the way we design and manage organizations and the way we reward people.

This report addresses what we see as the major reward system issues of the next few years: a) sharing business information with employees, b) participative work practices, c) employment security, d) pay-for-performance — tailored reward systems and gainsharing, and e) measures of performance. These issues cannot successfully be addressed in isolation from each other. Together they form a powerful set of rewards and facilitating conditions for productivity improvement.

The purpose of this report, and our recommendations, is to identify these major issues and relationships between them, provide recommendations for change, and list options, examples, and successful alternatives.

Recommendations:

Sharing Business Information with Employees

In order to be productive, committed members of an organization, employees need more and better information about their jobs, business conditions, customers, and competitors. Unfortunately, managers are often reluctant to “open the books” to employees. But without this information, employees are unable to make the best decisions in their jobs or see the relationship between their performance, the performance of their firms, and the rewards they receive. Therefore, we recommend:

1. Private industry, particularly large and medium-sized firms, should be encouraged and guided toward sharing business information with employees at all levels throughout the firm.

2. Business leaders should initiate a coalition effort among public, semi-public, and private sector organizations such as unions, industry associations, business associations, and the business-technical advisory sections of the departments of Labor, Commerce, the Interior, and Defense.

Informed employees are better able to contribute productivity-improving ideas. Information sharing provides a foundation for our next set of recommendations.

Participative Work Practices

Greater employee involvement in decisions will be one of the major sources of productivity improvement in the years ahead. Without it, we dampen the effects of improved technology, create resistance to change, and lose a key component of rewarding work. We recommend that:

3. Private sector and public sector employers in both union and non-union work settings move toward the establishment of participative work practices.
4. The process of designing participative work practices should itself be a model of participation. The employees, managers, and union leaders who will be affected by the changes should be involved in designing them.
5. Along with information sharing, we see the following as critical components of effective participative work practices: commitment from the top, middle management involvement, union involvement, a long-term perspective, training, and employment security. If not addressed, this last component, employment security, may be one of the major stumbling blocks to improved productivity.

Employment Security

Our recent economic problems have raised employment security to a major national issue. If employees and unions are going to work with management to improve productivity, they need some assurance that unemployment will not be the direct result. Many managers view layoffs as one of their primary tactics for cost reduction. We think that the “costs” of relying on this approach are far too high and that there are viable alternatives available in many situations.

We are not advocating “lifetime employment” or “job security.” Employees may have to change jobs, locations, and learn new skills in order to maintain employment. Pay



systems may have to change. While the unique circumstances of each firm will dictate how they approach the employment security issue, the issue is of such critical national importance that we recommend the following:

6. Labor, management, and government leaders should, perhaps under the sponsorship of the President, establish a collaborative process for developing new human resource strategies which will create a climate of employment security in the American workforce.

In order for employment security to be a viable option for firms, compensation systems will need to be modified to allow greater flexibility in pay.

Pay for Performance: Tailored Reward Systems and Gainsharing

Many of the current compensation systems in use do not focus on performance improvement, nor vary with performance, nor reflect the special circumstances of different groups within an organization. Many compensation systems should be redesigned to correct these inadequacies. A number of examples exist of "tailored" reward systems that contribute to performance more directly than many of the plans currently in use.

We think pay-for-performance is going to be a critical component of new reward systems. Gainsharing plans (such as profit sharing, Scanlon, Rucker, and Improshare) and other innovative pay systems can reinforce a sense of shared purpose among all employees. They also give the firm greater flexibility to respond to different economic circumstances, and serve as a complement to employment security. We recommend that:

7. Management and labor work together to modify many of their current reward systems to increase their positive impact on performance and productivity. In some cases, this may mean dismantling some organization-wide systems that are no longer meeting the goals of the company or employees.
8. Private and public sector organizations should seriously evaluate the potential application of gain-sharing approaches to compensation.

Measurement

Good reward systems require good measurement systems. Unfortunately, the best measures are not necessarily the easiest to collect or the most often used. Too often we focus on short-term over long-term, financial performance over productivity, the costs of human resources and not the ROI.

9. Reward systems should be based on measures of productivity, quality, and other measures of organizational health in addition to the traditional reliance on financial measures of performance.
10. Measures should reflect both the short- and the long-term effectiveness of the organization.
11. Firms should develop measurement systems that reflect the value of productivity improvement as well as its cost.
12. The Financial Accounting Standards Board (FASB) should develop accounting standards for productivity as well as the current financial accounting systems.

Reward Systems Information Exchange

It is easy to make recommendations about what firms should be doing in the areas of information sharing, participative work practices, employment security, tailored reward systems/gainsharing, and measures. It is far more difficult for firms to gather good information about what is being done in these areas. We have attempted to document some examples in our report, but far more is needed.

Too many firms are having to "reinvent the wheel" when designing new reward systems. There is a great need for more, and better, information in this area.

13. Government should, in appropriate agencies such as the Department of Labor, continue its current work in information collection and dissemination and should establish reward systems as a major category. Annual budget and staff should be given priority in the agencies. Collection should not duplicate the work of private sector groups.
14. Business should advise industry associations and non-profit groups that, as a condition for continued support, they should develop an information resource on reward systems.
15. Non-profit and industry groups should initiate discussions on reward systems so that standards of uniformity and reliability are maintained.

"Our recent economic trauma has opened a 'window of opportunity' for management and labor to explore new structures and new rewards far broader than we have in the past."



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The genius of American industry has long been to create industrial growth and economic strength by putting technology to work—that is, by managing technology in productivity-enhancing ways. Whether that special advantage will endure is now in question. While we have not lost our worldwide scientific leadership or, equally important, our capacity to generate new technology, there are ample grounds for concern about the strength of our national commitment to use the technology we create to improve the productivity of industry and, by extension, its level of performance in international competition. Renewal of that commitment deserves the highest priority among national goals, as the long-term security and well-being of the nation rests every bit as much on industry's competitiveness as on military strength.

For the private sector, at least, the immediate challenge is clear; it must learn to accelerate the application of new technology in fields such as information processing, telecommunications, robotics and automation, materials, and biotechnology, and to do so in ways that give leverage on productivity improvement. This is an urgent challenge on a national scale. While the main work must be done within the private sector, success will require the active support of leaders in every sector, including the President of the United States.

To remain on the frontiers of progress demands a higher level of effectiveness in the use of knowledge. While there is room for improvement in our use of labor and capital, the real hope for progress lies with the ever more efficient and effective translation into practice of the new knowledge-based technologies. The research and advanced development work carried out in university, government, and industrial laboratories continues to unlock a rich store of technical knowledge, but the development efforts needed to demonstrate the commercial applications of that growing technical base have proven wanting.

In our judgment, then, the heart of the problem—the challenge and the opportunity—is to put burgeoning research results to work in the economy. To do so, we must mobilize the hands and minds of entrepreneurs, managers, and rank-and-file workers across America. We must direct our very best national energies to the work of managing technology for productivity and competitiveness.

No one key will open the door to a renaissance of American industry, just as no one course of action brought it to its present state. This report sketches the outlines of a multi-faceted, as well as a multi-sectoral, approach to invigorating the nation's command of the uses of technology. It calls for intensified efforts to enhance private

sector effectiveness in the crucial "middle zone" of managerial effort that lies between the creation and the commercialization of technology.

Recommendations:

Needed: A National Commitment to Change

Across the industrial spectrum, the evidence is overwhelming: the potential for technology-based productivity enhancement is immense. On top management falls, of course, the primary responsibility for realizing that long-term potential. The single greatest opportunity for boosting our national performance in this middle zone lies in changing management attitudes and strengthening management skills.

1. Top management in industry and commerce has the primary responsibility for ensuring that technological opportunities are fully exploited. Top managers throughout the private sector should act to increase their organizations' awareness of the opportunities for and necessities of the introduction of new technologies.
2. Companies should strengthen programs of education and training to enhance management skills in the development and utilization of new technology.

The requirements of some opportunities for change may demand skills that a company cannot develop on its own, or may entail a level of financial drain or future risk too great for a company to bear alone. Cooperative research and development efforts—among firms and between firms and government or university laboratories—can open new arenas of opportunity for entire industries and for the nation in circumstances where those limits would apply.

3. Private sector institutions should expand current efforts and should continue to explore new patterns of collaboration in research and advanced development of technology.

The development of basic technologies and their transfer to diverse users is a lengthy and costly process in which no single organization may perceive an appropriate balance of costs and benefits. Universities, dedicated to the canons of pure research and cautious about the taint of commercialism, have largely chosen not to address issues of technology development. Further, the constraints of cash flow and expensive capital prevent all but the largest companies from risking years of effort to prove that a given technological concept can successfully be brought to bear on the primary business of enterprise.



We firmly believe that there is no more effective way to spread technology than to demonstrate it to prospective users in an environment to which they can relate and which makes the day-to-day application of the technology believable.

4. Both public and private organizations should expand collaborative programs for the development and demonstration of advanced technologies with broad potential applications in commerce and industry.
5. Government agencies at every level and private enterprises should change procurement practices to include provisions for sharing increases in risk and reductions in cost due to the implementation of new technology.

Needed: Better Education, Tuned to the Needs of the Computer Era

Changes in the attitude or institutional focus of the private sector cannot by themselves create a vastly more productive economy. We must have, in addition, a workforce that is well-educated and competent in the many productivity-enhancing applications of technology.

6. The recommendations of the National Commission on Excellence in Education should be implemented.
7. Special attention should be given to steps that would increase the computer literacy of all students.

Government's Role: Some Help Needed, No Hindrance Wanted

Many senior executives now acknowledge that the biggest problems in stimulating a greater application of technology are not government regulations and tax laws but management attitudes. Experience in the last two decades has taught us that government policies alone cannot directly cause a significant improvement in the appli-

cation of technology. Yet they can do much to create and sustain the environment within which industry leaders are willing to take more risks with technological innovation. Government cannot make the application of technology occur, but it can provide the incentives that make such applications more likely.

8. The federal government should reassess the adequacy of existing institutional arrangements and incentives for the development and demonstration of technology and its transfer to users.

Needed: An Enlightened Public

Productivity is generally accepted as a "bag of tools" which can be used to increase productivity. Yet major segments of society do not understand these subjects, their relationship to one another, or their significance to our future.

9. A nationwide productivity and technology service should be established within the private sector to promote the enhancement of general understanding of productivity issues.

The Human Consequences

It is all too easy, when recommending accelerated application of technology for the purposes of improving productivity, to gloss over the very real human costs that rapid technological change implies for many people. For reasons that are both humanitarian and pragmatic, we must not only acknowledge the costs that our recommendations entail, but also suggest ways to alleviate them.

10. A national commitment to accelerated technological change will require a comparable commitment to alleviate the human consequences of change. The responsibility for cushioning the effects of innovation should be borne by private organizations as well as the public sector.

"American industry has long excelled at the task of putting new technology to work productively. Now facing the challenge of vigorous international competition, America also confronts new opportunities posed by burgeoning science and technology."



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In order to establish a context for its deliberations conferees discussed the extent of economic change underway in the American economy. Conferees agreed that the rate and depth of economic change are accelerating and profound. They agreed that the transformation of the economic structure would require an equivalent transformation of the nation's human resources.

The nation's schools do have the primary pre-employment responsibility for education and training. The fundamental transformation of human resource development suggests that employers and public authorities look beyond traditional K-12 schooling and higher education to recognize other aspects of the "system of human learning." Employers, churches, media, the community, and the family are all learning centers for lifelong education. Conferees urge that employers and public authorities insure a comprehensive utilization of these learning resources in adapting to the human resource dictates of rapid and profound economic change.

Recommendations:

The Transition from School to Work

1. Employers should be more involved in the preparation of young adults for the transition from formal schooling to work. Primary responsibility for preparing young adults for the transition from school to work should remain with the elementary, secondary, and higher education system. These institutions should provide basic skills in the following areas:

- Reading competencies
- Writing competencies
- Speaking and listening competencies
- Mathematical competencies
- Scientific competencies
- Reasoning competencies
- Basic employment and job search skills
- Economic competencies
- Computer literacy competencies

In addition, the vocational and higher education systems should continue to provide basic competencies in the various occupational categories. In order to encourage basic skill and occupational competencies that keep pace with changing employer requirements, greater employer involvement in the content and delivery of basic and occupational education should be encouraged. Some examples: a) Employers could be encouraged to "adopt a school" to provide guidance and a closer connection between schools and the business community; b) employers

could share or donate equipment, facilities, or personnel for use in educational institutions.

2. In order to improve efficiency and flexibility and encourage fairness in the transition from school to work, additional information and services need to be developed to help youths identify appropriate education, training, and work opportunities that will encourage a successful transition from schooling to long-term employment.
3. Cultural values and a sense of civic responsibility are critical to the development of attitudes and habits that are basic to productivity. In addition, available infrastructure for the provision of services and information in the school-to-work transition are inadequate especially for minorities and females. Many conferees concluded that a national youth service corps could provide experience that would facilitate normative development of individual youths, encourage a sense of civic responsibility, and provide an effective institutional setting for the delivery of transition counseling and services to youth. While overall size, scope, and funding were not agreed to, it was generally agreed that a national youth service corps should be jointly funded and administered by employers and public authorities.
4. Some of the conferees suggested establishing school/industry councils. In each school district, establish school industry councils composed of HRD personnel and others from industry, small business association representatives, school superintendents, teachers, and school personnel responsible for industry liaison. The councils will have three responsibilities. First, they will develop methodologies for acquainting school teachers with the needs of industry and the nature of the world of work. Second, they will develop programs through which industry can provide support to the schools (e.g., lecture series, adopt a school, technology demonstrations, equipment and facilities donations.

Thirdly, the council will serve as the mechanism through which industry can assist with the development of school curriculum and products, and evaluate or "grade" the results. The grading should be formal, occur yearly and be nationally coordinated so there is a yearly "industry looks at the schools." There should be a common grading scheme so that summary statements and comparisons can be made. Industry participation on the council would be voluntary but the school district would have responsibility for initiating the establishment of the council. Some



portion of district funds would be contingent on establishing or having taken reasonable steps to establish the council. If industry fails to participate then the annual reports for that district would simply be "industry is not interested."

5. There should be voluntary out-of-school learning programs. The current economic restructuring requires that the attitude about learning be changed from "it is what we did in school" to "it is what we do everyday to make for a better job and better life." There are existing business related programs which industry should take a more active role in supporting, e.g., the 4-H Club, science fairs, computer fairs, and Junior Achievement. Sponsorship, employee release time for participation, and facilities and equipment contributions would all offer the means of industry involvement. Industry already has community involvement programs. The encouragement needs to be toward learning events. Sponsorship of such events could be promoted by the Chamber of Commerce, the Ad Council or professional and trade associations.

Transitions in the Workplace

6. The pace of economic change, the current investment incentive structure, the structure of American industry, demographic changes, and repeated recessions suggest that the United States is currently underinvesting in job-related training. Additional incentives are required to encourage a greater commitment to job-related training among employees and employers. Alternatives recommended by conferees included the following:
 - a. Adjusting the federal tax code in order to put training investments on an equal footing with capital.
 - b. Encourage senior management to increase the visibility and status in both the firm's planning and line operations.
7. New incentive structures are required in the workplace to reward individual effort and quality among employees. Employers should carefully target recognition and bonuses toward employees who demonstrate work effort and quality.
8. Incentives for cooperation between labor and management need to be devised. Employees should be encouraged to identify goals held in common with employers through a greater sense of ownership in enterprises' productivity performance. Such a sense of ownership can be encouraged through a variety of gainsharing plans that tie employee wages, salaries,

and benefits to the overall productivity performance of the enterprise.

9. Voluntary labor/management councils should be established. The councils could define training objectives and standards and have authority to collect training levies and even manage training programs.
10. Competency standards for private HRD professionals could be developed and a certification program initiated.

Dislocation and Reentry

Conferees discussed program formats for dislocated workers that included the following:

12. Programs should encourage early recognition by the dislocated worker of saleable skills and job prospects to encourage realistic assessments of the worker's saleable skills and possibilities.
13. Job search assistance should be given early in the transition.
14. Participation of employers and unions should be encouraged where appropriate, if possible prior to actual job loss.
15. Retraining should occur only after job search assistance has not resulted in reemployment.
16. Retraining should be tied as much as possible to prospective employers and available jobs.

Conferees discussed the view that retraining for the unemployed could not in itself provide jobs. There are only enough jobs for roughly one in every ten unemployed people. Conferees did suggest, however, that the unemployed should be made ready for jobs and employer-based training in anticipation of economic recovery.

Crosscutting Issues

17. Conferees recommended that public and private support should be provided for the development of a human capital institute. The institute would pursue issues critical to enhancing the economic productivity of adults.
18. Programs for the developmentally disabled, handicapped, and those requiring vocational rehabilitation should be integrated with an employer council with statutory authority to develop curricula and utilize available funds for relevant job training.

"Human resources are the primary factor of economic production. Machinery and financial capital are little more than artifacts of the human imagination. Human resource development is the primary lever for improving the nation's overall economic performance and productivity."



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NATIONAL MEDAL FOR PRODUCTIVITY ACHIEVEMENT



A national medal for productivity achievement was advocated by several of the computer conferences. Therefore, a special panel of conference participants came together to design this award and made the following recommendation:

“Productivity” is on the top of many governmental and private business agendas as the single most critical issue that needs attention if the economic performance of the United States is to improve. However, many members of society are unaware of the important role productivity plays in their economic well-being and the economic well-being of the United States. A preliminary step to improving productivity demands greater awareness of this issue among all sectors of the nation.

At present, there is no national recognition for outstanding contributions made by organizations that increase the wealth generated by the United States’ economy. A formal recognition process for extraordinary achievement is believed to have highly effective consequences and can create a stimulus for excellence. One way to stimulate this awareness would be through a national medal for productivity achievement awarded annually by the President of the United States.

The medal qualification process and award method should be designed to lend prestige and distinction to the receiving organization. The medal would be used to promote the awareness of the importance of quality and productiv-

ity in the economic well-being of the entire nation. The objective of the medal would be to acknowledge delivery of high levels of verifiable productivity accomplishments by organizations rather than individuals.

The actual selection of candidates for receipt of the award should be governed entirely by a national commission for the medal for productivity achievement. The Commission would be appointed by the President upon the recommendation of the Secretary of Commerce.

Awards will have to be based on fair, simple, and repeatable evaluation methods. It is recognized that is very difficult to perform productivity assessments across dissimilar business categories. Acceptable quantitative and consistent definitions for productivity and quality measures will have to be used to establish the medal as a credible award. The measures should be objectively verifiable and set forth unambiguously by the commission. The criteria for awarding the medal should favor simplicity.

The medal should be awarded annually to those organizations meeting the criteria established by the commission. The awards should be presented by the President. The scope, method, and consequences of the awardees’ productivity improvement efforts should be publicized in connection with the award to stimulate awareness of successful productivity approaches that might be adapted to fit other organizations.

“Fundamental to any improvement in our nation’s productivity is greater awareness of the role productivity plays in our economic system. Through increased awareness by workers and managers, private and public sector organizations can expect greater receptivity to productivity improvement plans.”



NATIONAL MEDAL FOR
PRODUCTIVITY ACHIEVEMENT

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AND NOW TO ACT....

Two options exist for these recommendations. They can:

1. gather dust, or
2. gather momentum.

The American Productivity Center is prepared to provide leadership along that second course. Work to implement many of the changes advocated in the recommendations is already underway.

The computer networks created to develop these recommendations can play an important role in this effort. Among those who are already linked by the teleconferencing networks, there is strong consensus about its effectiveness and appropriateness as a vehicle for moving forward on the recommendations already developed. As one participant said quite simply, "Clearly, this is a more productive way to work."

Networks to Expand

Therefore, the Center is going to continue and expand some of the existing computer networks. And it plans to create new networks that will move beyond making recommendations to government and the private sector. Participants will have the opportunity to learn from others' productivity successes, design plans for change, and act in the new ways required to have an impact upon the productivity and quality of work life of the nation.

These computer networks will, as one participant has noted, provide participants "a way of getting long-term interaction on an issue rather than the brief interaction of face-to-face meetings."

Specifically, the Center's method of linking people together through computer networks offers several advantages because of both the hardware and the 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 literal 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 and institutions
- Tailoring of the communications process to meet a group's particular characteristics, project goals, and types of participants.

Members of the initial seven networks, who developed these reports and recommendations, participated by special invitation. Now, the task of moving beyond the recommendation phase, broadens the opportunities for participation in the Center's computer networks.

Though current participants will be given first priority for continuing, membership will be opened to obtain even greater diversity of thoughts, skills, and expertise. The Center's computer networks can become a powerful vehicle for improving productivity within a wide range of organizations—industry associations, private companies, professional societies, governmental groups, labor unions, and education and training resources.

Content

Initial interest in the Center's expansion of computer networking suggests that networks will form to explore productivity and quality of work life in these subject areas:

- defense industry
- health care
- human resources
- information workers
- management
- measurement
- quality
- technology

Participants' needs and expertise will determine network subject areas and charters. Some will focus on practical, how-to approaches. Others will decide to be more research- and findings-oriented. The Center's role is that of the catalyst, linking participants with similar interests through its networking system.

Format

Each network will design a 12-month agenda during its initial kickoff session. Additional face-to-face meetings can be scheduled throughout the year as the participants deem appropriate.

A lead content person will be appointed for each network to serve as chairman, guiding discussions according to the agenda, summarizing, sparking comment, and so on.



Center's Role

As a focal point of productivity and quality of work life research and expertise since 1977, the Center, and its staff are available as content specialists participating in the networks when needed.

Having designed and managed computer conferences leading to the White House Conference on Productivity, the Center has developed a broad base of technical resources. Network participants can look to the Center to facilitate their needs for:

- hardware
- software
- conferencing technology
- system training and troubleshooting

Participants

Although the initial computer conferences cut across the lines of industries, labor, academia, and government, the mix of participants is open. The options might include participants from:

- diverse industries—discussing a common interest such as quality or human resources
- specific industries—developing interfirm comparisons and solutions; possibly working through their trade and professional associations
- individual corporations—managers at distant locations exploring common strategies and operational issues
- labor unions—exploring collective bargaining and training issues

Benefits

As noted above, the technology of computer conferencing offers a range of advantages over face-to-face, video, and audio meetings.

But the benefits of the Center's networking extend well beyond the technology and include:

- association with leading people of similar interests
- Center productivity/quality of work life expertise
- annual conferences to share results
- periodic reports on the findings of the networks
- creation of case studies, bibliographies, and articles
- follow-through on the recommendations made at the White House Conference
- involvement in improving productivity, quality, and quality of work life in the nation

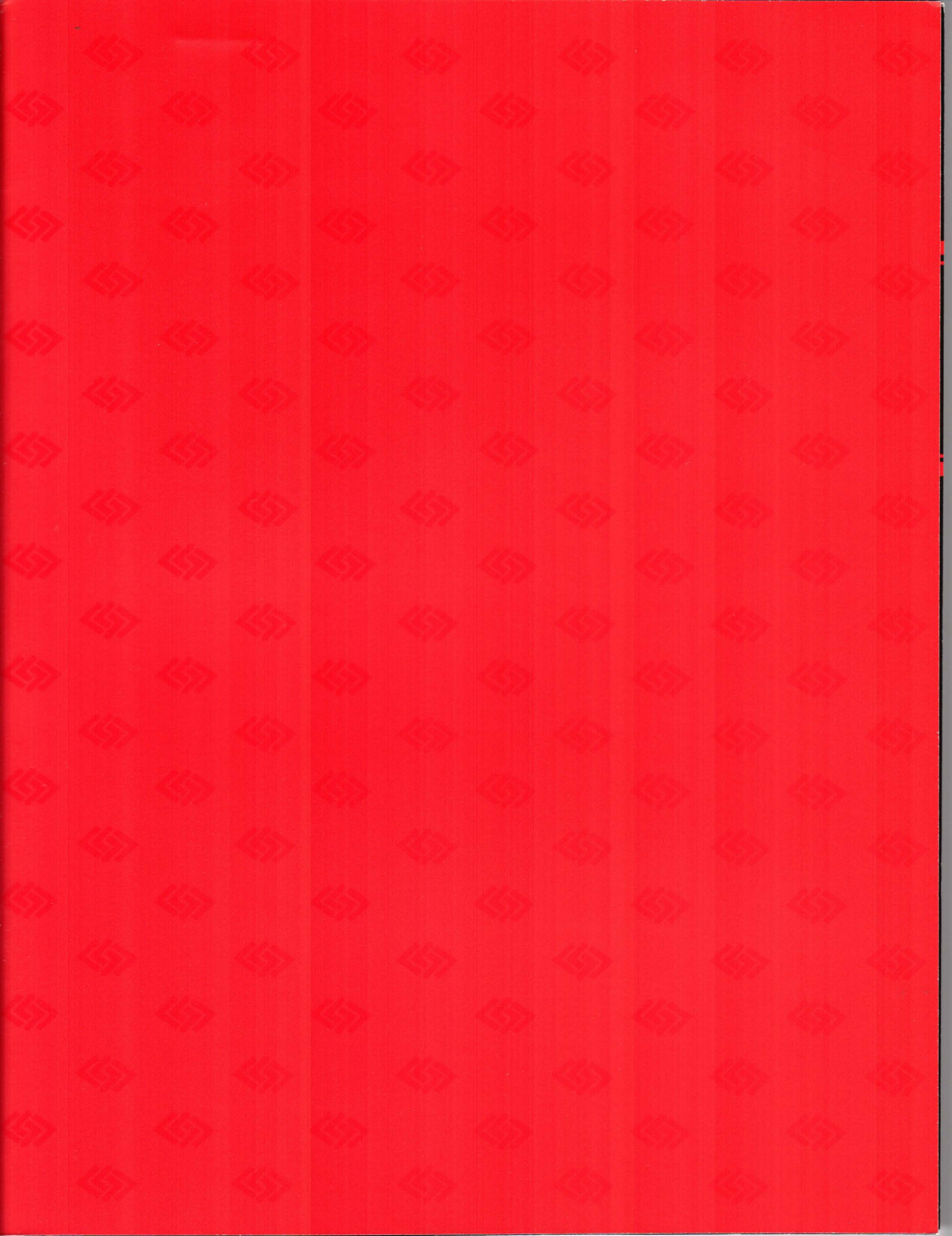
A single linkage between two people in the initial networks has already made a difference in the lives of 1,600 of the nation's workers. One of the members explains:

"The experience was by far one of the best things that has occurred in my professional career...As a result of the teleconference, another participant and I got together and actually designed a program to retrain 1,600 laid-off workers and their managers for a new plant. It probably would not have happened without APC. Thank you for an astonishing experience."

The opportunities for networking and action are boundless. The possibility for making a difference exists.

For further information about the Center's expanding computer networks, contact:

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