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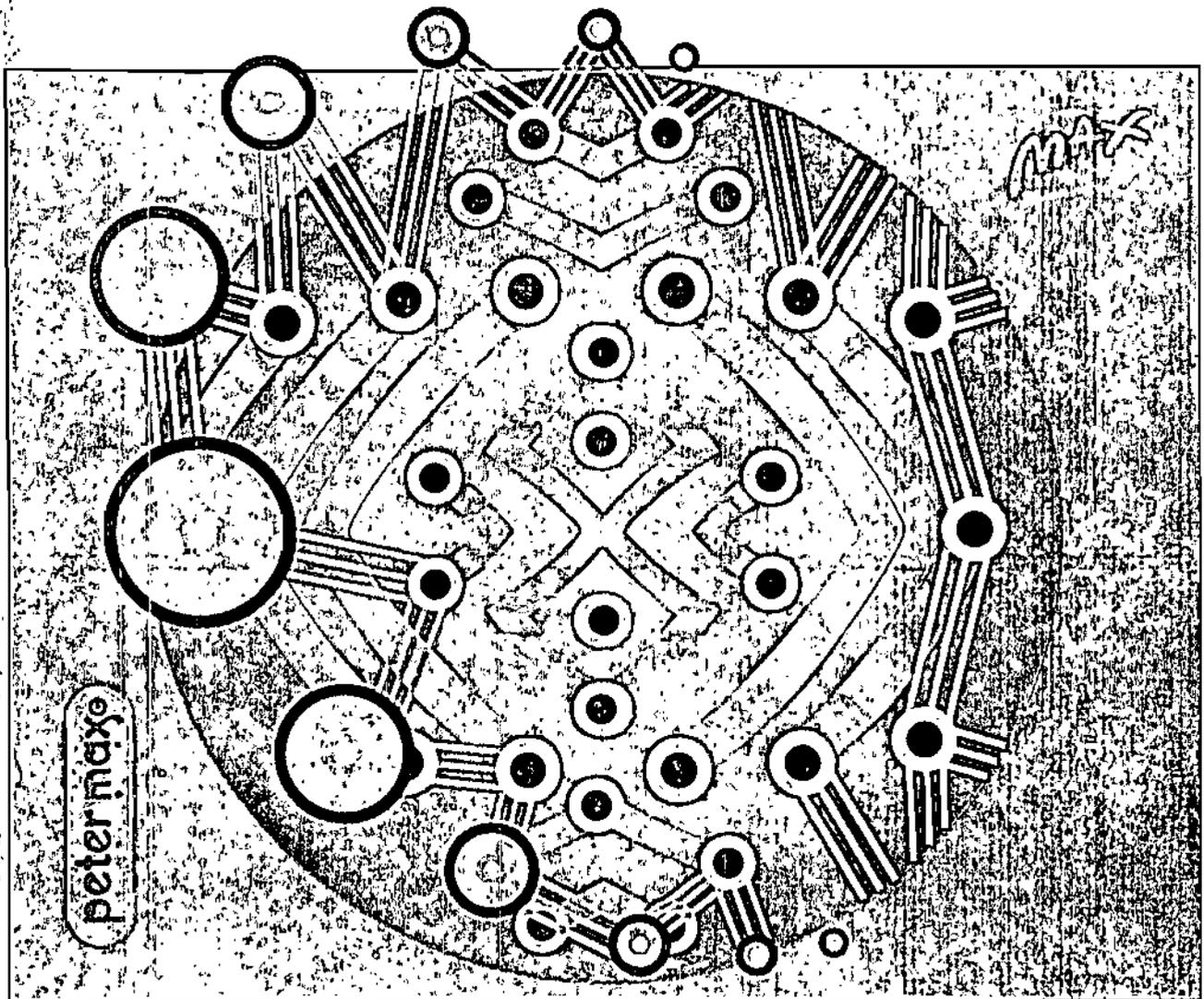
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**GLOBAL INFORMATION INFRASTRUCTURE:  
AGENDA FOR COOPERATION**



**AL GORE, VICE PRESIDENT OF THE UNITED STATES**

**RONALD H. BROWN, SECRETARY OF COMMERCE AND CHAIRMAN  
INFORMATION INFRASTRUCTURE TASK FORCE**

**FEBRUARY 1995**

News release



UNITED STATES DEPARTMENT OF  
**COMMERCE**  
**NEWS**

WASHINGTON, D.C. 20230

OFFICE  
OF THE  
SECRETARY

Contact: Carol Hamilton  
(202) 482-4883

Remarks by  
U.S. Secretary of Commerce  
Ronald H. Brown  
at the  
2nd Annual Manufacturing Technology Conference:  
Toward A Common Agenda  
April 18, 1995  
Gaithersburg, Maryland

[As prepared for delivery].

It's a pleasure to be here with you at NIST today. Our theme, "Toward a Common Agenda" could encompass virtually the entire Clinton Administration economic agenda. From the moment we took office we have worked to find common cause and form constructive partnerships with the private sector. We believe that the competitive demands of today's international economy have forced us beyond the distrust that in the past too often described the public-private relationship. And we believe that leveraged public sector support for private initiatives can speed growth and job creation.

The technology programs we run here at NIST are only part of a comprehensive economic strategy focussing on four themes:

- Encouraging private investment,
- Promoting education and training of the workforce,
- Opening markets, and
- Sparking innovation.

Investment is the first critical component of our strategy. That is why President Clinton working on a number of levels to increase capital availability. We fought hard -- and successfully -- for a deficit reduction package that got government out of businesses' way in our capital markets. We fought for and won Congressional approval for a three-year extension of the R&E tax credit and a targeted capital gains reduction for small business. And we're working with industry and Congress on regulatory reform -- ensuring our people and workers are effectively protected, but freeing capital for use designing new products, not dealing with red tape.

Second, America needs a skilled workforce -- from the laboratory to the assembly line. The same forces that have transformed your businesses -- often at considerable cost and dislocation -- are being felt by American workers and their families. For too long the result has been insecurity and a rejection of the very changes which offer us so much opportunity.

We cannot innovate without a workforce able to think creatively at the highest levels of technical proficiency. And we cannot harness these innovations -- as high quality consumer goods -- without technicians and factory workers able to run state-of-the-art production facilities.

We must educate our children to compete in an information age, and build new institutions that allow our workers to train and retrain themselves throughout their adult lives.

That is why creation of the School-to-Work transition program for young people who choose not to go directly to college, and establishing Goals 2000 elementary education standards will prove significant in the long run. That is why we have improved access to college loans, and why we are fighting so hard to preserve the Americorps program -- our future scientists and engineers must be able to get the education they need. And that is why the President's Middle Class Bill of Rights is defined by its focus on education and training.

Our third priority is open markets -- both foreign and domestic. When fully implemented, GATT alone should add as much as \$100 billion to \$200 billion to the U.S. gross domestic product annually; raise total U.S. employment by hundreds of thousands of jobs; save individual U.S. consumers hundreds of dollars annually; and boost real wages and living standards in the U.S. and around the world.

A sound macroeconomic environment, educated workers and markets in which innovation can produce competitive success are all necessary to our fourth priority, promoting innovation.

Technological innovation is vital in the new knowledge-based global economy. Rapid and continuous improvements in products, and the techniques to manufacture and bring them to market more efficiently, give businesses -- and nations -- a competitive edge today and twenty years from now.

This Administration has made tremendous strides in implementing an effective technology policy -- swelling a tide of technical progress being noted even in Japan. Last year, Japan's Science and Technology Agency termed "remarkable" productivity and efficiency improvements achieved by the U.S. automobile, electronics, and machinery industries. Only four years earlier, Japan's high-tech industries viewed themselves as comfortably ahead of the United States in all areas except chemical processing and pharmaceuticals. Now, they are feeling the heat.

The expansion of NIST's Advanced Technology Program and Manufacturing Extension Partnership -- are important elements of our innovation strategy.

Because of competitive pressure to downsize and streamline, to move "R&D closer to the customer," to reduce costs, and to improve quality, industry now devotes 80 to 90 percent of its R&D resources to short-term projects. At the same time, trends in technology itself are increasing the risks associated with long-term R&D and, as a result, driving away private sector investment.

- First, technology and product life-cycles are getting shorter. The lifetime of a new personal computer model is two years. To be competitive, an electronics manufacturer has to fund and manage three generations of technology simultaneously: one in production, one in pilot production, and one in design and development.

- Second, the cost and complexity of technology development are increasing. From start to finish, development of new drug may cost \$350 million. The cost of a semiconductor manufacturing plant has soared to \$2 to \$3 billion. The complexity and cost of technology development often exceed the capabilities and resources of individual firms.
- Finally, today's enabling technologies often have multiple uses, potentially providing companies -- including competitors -- with benefits and market opportunities that an innovating firm cannot capture.

The ATP's cost-shared support has encouraged industry to look farther out onto the technology horizon -- beyond next quarter's or next year's financials. And the program has spurred joint-ventures, including intra- and inter-sectoral alliances that bring together unique collections of expertise and capabilities.

Through its cost-sharing requirement, the ATP leverages federal dollars allocated to help commercial industry rise to important challenges. The ATP is but a fraction of the modest 4 percent of the federal R&D invested for this purpose. Yet, it has become an important component of an array of U.S. responses to the growing technological prowess and competitive capabilities of foreign industry.

Later this morning, I will be touring Optex, a start-up company located a few miles from here. The recipient of a 1992 ATP award, Optex belies all the false assertions made about the Advanced Technology Program. Optex is a small company not a behemoth, but it has big technology and market ambitions. It has more than matched the \$1.4 million awarded by the ATP. The company has invested an additional \$3 million to develop a novel data-storage device -- an "electron-trapping optical memory."

If the project is successful, the Optex technology will meet a growing need for fast, high-capacity storage for new digital video systems, providing benefits that will flow to many parts of industry and the economy. To help clear early technical hurdles and clear a path to market, Optex also is tapping the specialized expertise and capabilities of the NIST laboratories. This is a wonderful example of partnership and of how to make the most of federal technology dollars.

The U.S. manufacturing sector stands directly in the path of the competitive and technology forces I mentioned a moment ago. Eighteen million workers pay the bills with checks earned at America's 385,000 U.S. factories.

Smaller manufacturers face significant barriers to learning about and adopting modern equipment and techniques that they must have to survive in the international marketplace. Many continue to use decades-old technologies and manufacturing methods, and the productivity of smaller manufacturers has been declining relative to that of large U.S. producers. These firms also lag their Japanese and German counterparts.

Yet, companies that recognize the need to modernize their performance and upgrade their equipment and methods often cannot find the expertise and technical resources they need to help them get on with the job.

The Commerce Department's Manufacturing Extension Partnership -- the MEP -- is helping to fill this critical void. A nationwide system of community- and state-based nonprofit organizations, the MEP provides smaller manufacturers with access to public and private resources, information, and services to meet their unique needs. Services, which are supported with federal dollars matched by states, are provided through locally-run, nonprofit manufacturing extension centers.

From a modest pilot program of seven extension centers in as many states, the MEP has grown to 44 centers operating in 32 states. During 1994, the 28 MEP centers that operated for at least part of the year provided services or made initial visits to more than 30,000 companies. Surveys of client firms also show that MEP services make a big difference. Company estimated benefits greatly exceed -- by 8 to 1 -- the federal investment in the MEP.

The common thread of these programs is partnership and a common agenda, under private sector direction -- a theme that extends into more traditional but still cutting edge NIST initiatives. For more than 90 years, the NIST labs have worked in consultation with industry to develop much of the technical infrastructure that underlies the nation's manufacturing economy and supports the efforts of the entire technical community.

An excellent example of the labs' role is a brand new, one-of-a-kind machine that NIST researchers built with help from partners in industry and government. What these researchers have built--created, actually--is a surveying tool for mapping and developing large tracts of molecular landscape. The project began in the late eighties to meet the U.S. microelectronics industry's most advanced measurement requirements near the turn of the century. By then, the smallest feature on a memory chip will be about one two-hundredth of the width of a human hair. And on that tiny landscape a commercially promising array of "nanotechnologies" -- ultraminiature machines and devices -- is sprouting into existence.

At a time of growing technical complexity, M-cubed -- for Molecular Measuring Machine -- will be an important contribution to the nation's technology infrastructure. Because of its broad value to industry and science, M-cubed typifies the essential enabling role that federal technology investments can and must play.

High-technology sector and firms that adopt advanced technologies are critical to economic prosperity. Average annual compensation in the high technology sector, for example, exceeds by twenty percent the average for all manufacturing. High-technology products also account for a rapidly increasing share of the manufacturing output of industrial countries -- 35 percent in 1992, nearly double the 1980 figure.

The close connection between innovation and economic performance has been confirmed by new research from my own Department. Our report, entitled "Technology, Economic Growth and Employment," found that firms that use advanced technologies are more productive, pay higher wages, offer more secure jobs, and increase employment more rapidly than firms that do not.

Technology is a key to security. To abandon our technology policy now, as some have recklessly suggested, would be tantamount to unilateral disarmament.

The genius and entrepreneurial drive of America's private companies -- your companies -- are the irreplaceable core of our economy. But technical and economic realities demand that the federal government become your agile and effective partner. We already share a common agenda: growth, prosperity and job creation. By forging an common approach, through initiatives like the Advanced Technology Program and the Manufacturing Extension Partnership we can ensure that we reach our goals.

President's remarks at  
Melahn Daldrige National  
Quality Award Ceremonies

THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release

November 14, 1988

REMARKS BY THE PRESIDENT  
AT PRESENTATION OF MALCOLM BALDRIGE  
QUALITY AWARDS

The East Room

11:38 A.M. EST

THE PRESIDENT: (Applause.) Thank you. Well, good morning. In nearly two weeks, America will celebrate Thanksgiving, a time when the nation looks back, takes stock, and gives thanks for the personal and economic freedoms with which Americans are blessed.

As a nation, we have much to be thankful for. We've continued to enjoy the longest peacetime expansion in our nation's history. Real gross national product has risen by 26 percent since the recovery started six years ago. American industry is again the class of world class competition.

Yes, America's future is bright. Today's ceremony reflects both the progress we've made and the promises that we have yet to keep. America's economic strength depends on industry's ability to improve productivity and quality and to remain on the cutting edge of technology.

And that's why the Malcolm Baldrige National Quality Award is so important. The award recognizes the contribution that companies across the country are making to our economic growth -- companies that make the highest quality products.

And today, we salute three corporations that reflect American industry's dedication to quality. Each of them and thousands of others help keep America strong by making American products the best products available.

They and others like them exemplify the belief that quality counts first, foremost, and always. The one trait that characterizes these winners is that they realize that quality improvement is a never-ending process, a company-wide effort in which every worker plays a critical part. They realize that customer satisfaction through better quality is the goal. And they know that America's economic strength and future depend more and more upon the quality of its products.

This award was established and carried out in the spirit of cooperation between government and the private sector. And that's the way it should be. We owe a debt of gratitude to the foundation that helped support this award and the many private sector individuals, especially the examiners, who made the award possible through their own dedication to quality.

And a word of thanks to Bill Verity and the Commerce Department's National Institute of Standards and Technology. They have worked very well with the private sector to ensure that this award truly sets a national standard.

This award has a special meaning for me because it's a fitting way to honor a good friend, Malcolm Baldrige, a dynamic businessman and a great Secretary of Commerce. Today we honor Mac with a lasting tribute to quality.

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And now it's time to recognize the awardees. These awards are won by companies, but they're earned by individuals, working together in the quest for excellence. So now I'll turn the podium over to Secretary Verity, and he will make the announcement. (Applause.)

END

11:45 A.M. EST

THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release

November 2, 1989

REMARKS BY THE PRESIDENT  
AT PRESENTATION OF  
MALCOLM BALDRIGE NATIONAL QUALITY AWARDS

Malcolm Baldrige Hall  
Commerce Department  
Washington, D.C.

10:34 A.M. EST

THE PRESIDENT: Thank you all very much. Thank you, Secretary Mosbacher, for the warm welcome. It's great to be back across the street, almost, at this wonderful Department. I first want to salute the Baldrige family. A special hello to Midge. Of course, I'm delighted to see the Secretary of the Treasury here and Ambassador Hills. Able members of my Cabinet sitting next to them. Dr. Bromley, our Science Advisor who has a keen interest in the success of the work of this Department.

I want to salute Deputy Secretary Murrin and Under Secretary Betti. And I think I spotted Strom -- I know I did -- over here. And it's a little hard to see. But Jesse Helms was to be here, Congressman Sherry Boehlert, Don Ritter. George Brown, I do see. Howard Coble, Doug Walgren, Nancy Johnson. And if I missed a few -- Alec McMillan, I think. And I can't see who else we've got over there. But nevertheless, welcome to the members of Congress whose support is absolutely essential for the workings of the Commerce Department.

In just a few moments, it will be my pleasure to present awards named after a great public servant and a close and dear friend -- Malcolm Baldrige. So let me just say a few words about Mac. He had a zest for life -- Nancy, I didn't see you -- had a zest for life, love of family and a love of country that was uncommon. He was an outstanding Secretary of Commerce for six and a half years. And he was also an outstanding friend. Mac's word of honor -- as those of you who worked with him -- was his bond, as good as a \$20 gold piece.

And he never quite fit any mold. In this town, they always try to make you fit into some mold. Baldrige never quite fit the mold. He was the president of a successful company who spent a lot of his time with volunteer firemen when his wife wasn't doing that kind of work. He was the son of the East who rode horses and loved his place in New Mexico. He felt at home with cowboys because he roped with them all of his life. You'd never have known it from his friendly, easy-going manner, but he was also a bit of a perfectionist, in word and deed.

As a leader in business, Mac strived for quality in products; as Commerce Secretary, for quality in public policies. Even the language some of you may well remember, to your horror, the language of his memos was lean and exact. In fact, he had a special computer software program for Commerce Department documents; one that automatically weeded out jargon like "impacted," "viable," "infrastructure." (Laughter.) Sort of Gramm-Rudman cut of the English language, if you will. (Laughter.)

But like all perfectionists, he knew that perfection is not reaching the attainable. Rather, it's a never-ending quest for the unattainable. His life was such a quest, a life whose legacy

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leaves us with a profound insight -- a truly successful man or woman is someone who has, indeed, served others.

Companies, like people, are successful only to the extent to which they provide service. This is true for all business, from the humblest mom-and-pop operation to the largest corporation.

The improvement of quality in products and the improvement of quality in service -- these are national priorities as never before. In recent years, Americans have felt the sting of fierce competition on a global scale. And we've learned to see foreign competition -- not as an excuse to close doors and raise barriers -- but as an incentive to renew our own commitment to excellence.

American managers have reconsidered every time-honored belief, every traditional practice, every customary procedure. And they've embraced what works and rejected the past. They've studied examples of innovation from home and abroad, and adopted only the best. And we now know the result of this historic reassessment: When it comes to meeting the competition, America is back in business.

We're here today to honor two companies that are leading this resurgence -- they're leading the resurgence in American business leadership. Most companies catch hell from the competition. But these two companies are in the lead because no competitor gave them a tougher time than they gave themselves.

Of course, in business, success is its own reward. And yet all American firms benefit by having a standard of excellence to match and perhaps, one day, to surpass. For 1989 there can be no higher standard of quality management than those provided by the winners of the Malcolm Baldrige National Quality Award -- Milliken & Company and the Xerox Corporation.

Both of these manufacturing firms were well-established leaders in their markets. Yet both were being steadily squeezed out by the intense foreign and domestic competition. In the midst of this crisis, the men and women of these companies found within themselves the will to make a painstaking reassessment and the drive to win back that market share.

Both companies started down this path of reassessment with a simple premise: in business, there is only one definition of quality -- the customer's definition. And then they proceeded from this one premise to restructure their production and marketing plan. Sounds simple. But I know, as a former tiny businessman myself, how difficult it is to restructure a firm from top-to-bottom.

And today's winners know what is possible when a firm restructures itself from the bottom up. They know that a company can no longer afford to regard employees as automatons in a production line. They know that a company must rely on the intelligence, judgment and good character of the people it employs.

And there are as many successful forms of management as there are successful companies. But for these two companies, success came when they developed their human, as well as their technological, potential.

Milliken, for example -- a 125-year-old textile manufacturer in South Carolina. But its management style is sheer 21st century. Milliken scrapped the old management hierarchy in favor of what they call a "flat management structure." Good thing they're not a tire company. (Laughter.) Flat management structure. Milliken even gave a new title to its employees, calling them "associates." And this is no hollow accolade for public relations. Every Milliken employee, I'm told, truly is an associate. In fact, any Milliken worker has the power to halt that production line if he

or she detects a problem in quality or safety.

Our other winner takes a similar approach with its Team Xerox philosophy. Xerox employees are given the authority that they have to have, that they need to make day-to-day decisions. And they are, the company says, expected to take the initiative in finding and fixing problems. And they do. While every manager works, every worker is managing.

One of the best things about this award is that it allows successful companies to share what they have learned to set an example. Perhaps these two companies ought to merge -- and be careful of the antitrust. (Laughter.) Can you imagine it? Your wardrobes wouldn't just be coordinated; it would be collated. (Laughter and applause.)

Many firms will learn a great deal from their example. Others will need to follow their own path. But to those who say that we have lost our edge, that the days are past when "made in America" meant "the best" -- I say, tell that to the people of the Milliken plant in Spartansburg, South Carolina. Tell that to the Xerox teams in upstate, up in Monroe County, New York.

Quality products and service is no accident. It's the result of a certain can-do, no-excuses attitude -- an aggressive impatience with the status quo -- even in the best of times. And it's this attitude, more than anything else, that is responsible for the creation of wealth and jobs that we have seen over the last seven years.

In these years, our total national wealth has grown by almost a third, and more than 20 million new jobs created. And we are still enjoying the rewards of what has proven to be the longest peacetime expansion in American history.

So given the right policies -- and a reduced capital gains tax would be one -- Congress, I hope you're listening -- (applause) -- this expansion will continue. And given the right tools, the American people can reach even greater heights. The potential of this nation is as boundless as the imagination and drive of the American people. All we have to do for our citizens is what these two companies have done for their employees -- give them the freedom to do what they do best. Freedom to imagine, freedom to create, and freedom to excel. Our winners had such freedom and they certainly made the most of it.

I give my heartiest congratulations to Roger Milliken, who is here, and to David Kearns. And I give my heartiest congratulations to your employees, your associates. And thank you all for being here to honor these two successful stories.

Thank you very, very much. (Applause.)

END

10:45 A.M. EST

THE WHITE HOUSE  
Office of the Press Secretary

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EMBARGOED FOR RELEASE  
UNTIL 11:15 A.M. EST  
THURSDAY, DECEMBER 13, 1990

TEXT OF REMARKS BY THE PRESIDENT  
IN PRESENTATION OF 1990 MALCOLM BALDRIGE  
NATIONAL QUALITY AWARDS

Grand Hall  
Department of Commerce  
Washington, DC

December 13, 1990

We are here today to present four awards named for a man dedicated to quality; quality in public service as a Secretary of Commerce, and quality as a good friend to so many of us in this room.

Malcolm Baldrige was also a leader in business. And when it came to business, he knew that quality cannot be assured with a slogan or an ad campaign. It begins with winning and keeping business. It begins with the understanding that only customers can define quality. In short, it begins and ends with the unsentimental judgment of the market.

Once, quality separated winning firms from sluggish ones. That time has long since passed. With the fierce competition of the international market, quality means survival.

The renewed commitment by America to quality can be seen in the explosion of applications to receive the Baldrige Award. In just a few years, the National Quality Award has literally become the standard of business excellence.

The renewed spirit of excellence in business, of making quality an integral part of America's corporate strategy, has truly made us more competitive in the international arena. Exports have already increased nearly eight percent from year-ago levels and the figures keep rising.

To compete and win in the international arena, U.S. companies are simply going to have to offer products and services that are world-class. That is the purpose behind this award, and it is a national purpose.

So we are here today not only to honor four firms, but to promote an awareness of quality in American business, and to share successful management strategies; strategies that can sharpen America's lead in the world marketplace.

Each of these companies offers unique lessons. But these four companies also found success in a few basic principles. They learned that "quality control" cannot be imposed from top to bottom. They understand that quality management must cut through organization charts, across departments and offices. A "quality culture" does not depend on titles and job descriptions. Finally, these winning companies also realize that they are only as strong as the intelligence, judgment, and character of their employees.

This year the Malcolm Baldrige National Quality Award is going to all three award categories: Manufacturing, small business, and for the first time, service.

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The winners with us today were selected from a population of American organizations that requested more than 180,000 application guidelines this year. What I said of last year's honorees applies today: Most companies catch hell from the competition. But these companies are in the lead because no competitor gave them a tougher time than they gave themselves.

Three of our winners are household names. Let me start with IBM Rochester, a company that proves that quality, coupled with employee training and education, is good business. In fact, IBM Rochester spends five times the national average on education and training. Just one reason why IBM Rochester is globally competitive.

The next recipient is another household name, the first automotive company to earn this award: Cadillac. When many companies speak of quality changes, they speak of improvements in management. This company speaks of a "culture change", a clear recognition that Cadillac knows that quality begins with the morale and ideas of its people. Cadillac executives, plant managers, and union representatives all have worked together to help win this award. Quality councils are at work at each of the company's seven major facilities, supported by hundreds of company teams. Cadillac shows that labor-management cooperation yields quality results.

The next recipient is Federal Express, the first large service company to earn this award. This is a critical recognition, because so much of our work force and our national wealth comes from the service sector. And Federal Express is simply nothing less than a model for all other service corporations.

From ground zero in 1973, Federal Express has shot up to one of the world's largest transportation companies, with more than 90,000 employees making one-and-a-half million shipments daily.

As with IBM Rochester and Cadillac, the secret of success for Federal Express is its training and reliance on its employees. With a no-layoff philosophy and extensive training, Federal Express attracts top-notch, motivated people. In fact, during the last five years, nearly 100 percent of Federal Express employees surveyed responded that they were proud to be a part of their company.

That is why Federal Express delivers. All American workers should feel they are as much a part of their companies.

Which brings me to the Wallace Company of Houston, the first small service business to be recognized. This family-owned firm extends its family approach to all of Wallace's 280 skilled and well-trained employees, people who think of themselves as "associates."

The Wallace Company proves that quality is not just for the Fortune 500. This small distributor of industrial goods not only survived the recent rough economic times in Houston. It proved that even in tough times you can still commit to long-term improvements in quality.

In business, success is its own reward. But the men and women of these four firms have given all Americans a standard of excellence, a standard to emulate, a standard to surpass.

They have proven that quality management is not just a strategy: It must be a new style of working, even a new style of thinking. A dedication to quality and excellence is more than good business. It is a way of life, giving something back to society, offering your best to others.

For that, you have my admiration, and my heartiest congratulations to every single American worker you represent.

## THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release

December 18, 1992

REMARKS BY THE PRESIDENT  
AT MALCOLM BALDRIGE AWARDS CEREMONYDepartment of Commerce  
Washington, DC

11:52 A.M. EST

THE PRESIDENT: Thank you, Secretary Franklin. And let me first recognize our Baldrige Foundation trustees, our private sector examiners and judges, and all those who coordinated this year's Baldrige Awards. Distinguished members of Congress present, welcome. And also it's my special privilege to salute members of the Baldrige family who are with us today.

I really do look forward, Barbara indicated, to these yearly award ceremonies. It is an opportunity to honor the nation's best and a chance to revisit the legacy of an extraordinary man, Malcolm Baldrige.

I remember a story that President Reagan used to tell about Mac -- he phoned him to ask him to join his Cabinet. And he was told by his wife, Midge, that he'd have to call back later -- Mac was out on his horse roping and couldn't come to the phone. (Laughter.)

Well, I think everybody at Commerce who worked with this extraordinary man knows exactly that that's the way he was, a man whose collection of belt buckles was the only thing that could outnumber his many achievements. And in a hand-tooled western belt and a pinstriped suit, he was the Connecticut cowboy; a man whose name is now enshrined in the Cowboy Hall of Fame in Oklahoma; and the only guy I know who'd complain of saddle sores from sitting around a desk too long. (Laughter.)

He used to say that the thing he like about cowboys was that they didn't talk unless they had something to say. And when they said something, they meant it. And that was true of Mac Baldrige. And when he talked business, he meant business. And when he talked of making America's products second to none, you listened. And the standards of excellence that Mac embodied are still very much with us today. Fairness, honesty, tenacity -- these were his yardsticks and the same yardsticks we use today in looking for the very best that American industry has to offer.

And this year we've found them in five exceptional companies. Ninety companies this year decided that they were tough enough to take the Baldrige tests -- thousands. And it's estimated 175,000 others used these criteria, the Baldrige criteria, as an internal test, as a way to be tough on themselves. And a few of our past winners -- and I come to mind Motorola and IBM -- have even gone so far as to urge their suppliers to follow the Baldrige criteria. And what this tells us is simple: America is number one because it demands not only the best for itself, but also from itself.

And now a comment on this year's winners. Some might think the Commerce Department offered a two-for-one deal with AT&T, but not so. (Applause.) Though both Transmission Systems and

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Universal Card Services are divisions of AT&T, they are two separate businesses who share one common goal: a commitment to quality. AT&T Chairman Robert Allen said of this commitment: "The real challenge is to define quality not from our own perspective, but from the customers." And this, both divisions have done.

Transmission Systems Business Unit dedicates itself not only to its customers' short-term needs, but its long-term needs as well. With the input of more than 7,500 employees at nine U.S. sites, Transmission Systems has initiated programs to predict what new technologies will be needed to meet their customers' long-term goals. And in slightly more than three years, Transmission Systems has nearly doubled international sales and now sells systems to more than 50 countries; and that is a lot of satisfied customers.

Universal Card Services has become a bench mark of other companies not by accident, but by effort. Top performances by all of its 2,500 employees. And Universal Card led its charge to excellence by centralizing their business around one key principle: Delight the customer. And it seems they are, indeed, delighted. Ninety-eight percent of their customers rate overall services as better than the competition -- 98 percent. That's pretty good for a poll, and I could have used it about a month ago. (Laughter and applause.)

It's not often that small business means big business. And it's true for the Granite Rock Company, another of our honorees. With the initiation of their Total Quality Program, Granite Rock has exceeded its industry standards for high quality and unmatched service. And rather than follow a well-worn path, Granite Rock chose to chart its own way -- a journey that's brought them here today; an award-winning company that defines success in three little words: Another satisfied customer.

Ritz-Carlton -- they won 121 quality-related awards in 1991. But ask any employee how they gauge their success, and they'll say "The Gold Standards," the Ritz-Carlton's bible for premium service. And with almost 12,000 employees, the Ritz-Carlton has implemented a rigorous quality program that seeks a memorable visit for every guest. This luxury hotel business knows that a mint on the pillow isn't enough to keep a customer coming back. It's the principle -- "service must be excellent if it is anything" -- that has earned Ritz-Carlton one of the most loyal followings in the travel and tourism industry.

Now, for Texas Instruments Defense Systems and Electronics Group. Its best product is always surpassed by its next innovation. Mac used to call this kind of inventiveness "yankee ingenuity." I'm not sure of this Texas-based company -- (laughter) -- cottons to be called yankee but ingenious I think they'll accept, and they've earned it.

Formed during World War II, this TI subsidiary has grown to become the nation's eighth largest defense electronics contractor. And we know from the success of Desert Storm that in matters of advanced weaponry, quality is absolutely essential. It's the key. And we know, too, from the success of Desert Storm, that TI's contributions to this effort were absolutely invaluable.

In today's competitive global marketplace, quality of service and quality of goods takes on top priority in American business. And premium standards are no longer lofty goals but vital components of every basic business strategy. This year's Baldrige winners know that quality standards do not impede success, they encourage it. And Mac Baldrige would certainly agree with that.

And each time we revisit our memories of Mac Baldrige at this ceremony, I'm reminded of the wisdom that he uses to impart most often: Always, in anything and everything, rise to the highest

MORE

- 3 -

standard. This year's Malcolm Baldrige Quality Award winners have all done just that.

And so I came over here to say congratulations to all of you, and may God bless our great country. Thank you very much.  
(Applause.)

END

12:01 P.M. EST

REMARKS BY THE VICE PRESIDENT

1991 MALCOLM BALDRIGE NATIONAL QUALITY AWARDS

UNITED STATES DEPARTMENT OF COMMERCE

WASHINGTON, D.C.

TUESDAY, OCTOBER 29, 1991

10:00 A.M.

Thank you all very much, and thank you, Bob Mosbacher.

Midge and other members of the Baldrige family, members of the Cabinet, members of Congress, distinguished guests, ladies and gentlemen:

I am here today on behalf of the President, who as you know, is attending the Middle East peace conference in Madrid. It's certainly an honor to join you all in this salute to three outstanding companies. The President's Council on Competitiveness, which I chair, recognizes quality, productivity, and excellence in our private sector. That is why the Baldrige Award was created ... to reward quality and to encourage the very best in American business.

Many in our country want to look at American business in somewhat of an unfavorable light, as compared to our competitors. They say we can't compete, we're not as productive as we used to be, and that somehow, we've lost our edge. Well, I for one, reject these notions. I know ... and so did Mac Baldrige ... that given a fair opportunity, American business can outcompete and outsell any foreign competitor anywhere. And striving to be the very best by emphasizing quality is part of our heritage. It's part of being American.

This is also once again a chance to pay tribute to Mac Baldrige ... an outstanding Secretary of Commerce, a successful businessman, and a member of the Cowboy Hall of Fame.

Mac understood excellence. He believed in excellence: it was the way he led his life. He was intensely competitive and he thrived on competition, whether the purpose was business or pleasure. He despised regulation, unless it was genuinely in the public's best interest. He never missed a chance to stand up for quality and high standards. My friends, the name Mac Baldrige is synonymous with the National Quality Awards and that's something very appropriate and well deserved.

Today we honor three leaders in quality management: Solectron Corporation of San Jose, California, Marlow Industries of Dallas, Texas, and Zytec Corporation of Eden Prairie, Minnesota.

The Baldrige Quality Awards aren't designed for any specific product, service, or industry. No, they measure things like information and analysis, planning, human resource use, quality results, and customer satisfaction. Past winners have included the Cadillac Motor Car Division, Federal Express, Xerox Business Products and Systems, and Motorola -- the latter two of which I had the pleasure of visiting last spring.

This year's winners all come from a most competitive sector of business -- the electronics industry. Each is a home-grown company that's performing exceedingly well, making world-class components, and strengthening the supplier base that absolutely essential to hundreds of other American companies. Beyond that, they've all made great strides in world markets -- something that's so important to long-term growth.

How are they doing it? Through unique variations on a simple theme: meeting the customer's needs. Now, few customers are as demanding and sophisticated as those in the field of electronics -- but each of our honorees has developed a tailor-made system of grading itself through the eyes of the client. At Solectron they conduct customer surveys -- not yearly, not monthly, but every week. At Zytec, customers join all levels of employees in refining the company's long-range plans. At Marlow Industries, the customer feedback system has been described as "exhaustive" -- including everything from surveys to quarterly meetings with clients.

Combine these strategies with first-rate management teams, innovative plans for rewards and incentives, and smooth internal communications, and you get world-class competitors. That's what each of the Baldrige Award recipients has become.

And they can be examples for others -- because there's no secret to their success. Just a commitment to customer service and quality.

In saluting Marlow Industries, Zytec, and Solectron, we also salute those who requested more than 210,000 copies of the Award's quality improvement guidelines. All of them have made quality their top priority. And their enthusiasm for quality management will help ensure that when customers across the globe want quality, they will look for the words, "Made in America."

So, on behalf of the President, let me simply congratulate the leaders of these three fine firms: Winston Chen of Solectron, Ronald Schmidt of Zytec, and Raymond Marlow of Marlow Industries. Gentlemen, well done.

Thank you very much.

THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release

December 14, 1993

**REMARKS BY THE PRESIDENT  
HONORING WINNERS OF THE MALCOLM BALDRIGE AWARD**

Mellon Auditorium

Washington, D.C.

10:35 A.M. EST

THE PRESIDENT: Thank you very much. Secretary Brown and former Secretaries of Commerce, members of Congress, members of the Baldrige family, and the honorees and all their supporters waving the flags and the signs in the back. It's kind of nice, after all of the speeches I've given and all the crowds I have to see, those kinds of signs waved at me when I speak. (Laughter.)

Before I present the Baldrige Award today I would like to talk just a moment about the progress of the GATT negotiations which Secretary Brown mentioned. Today, the United States negotiators have achieved a breakthrough in the talks to conclude a new round in the General Agreements on Tariffs and Trade. We are now on the verge of an historic victory in our efforts to open foreign markets to American products.

I do want to make it clear, however, that the negotiations are not concluded yet. Thorny issues remain, and I have instructed our negotiators to push very hard for our objectives as they conclude the remaining details.

I've made it clear that I will not accept a bad GATT, but that we will not spare any effort to fight for a good one. Now the United States and the European Community are in a position to work shoulder to shoulder to push for concessions from other nations in the final hours.

The stakes are immense. This would be the single, largest trade agreement ever. It writes new rules of the road for world trade well into the next century. It would cut other countries' tariffs for our goods, on average, by more than one-third. When fully phased in, it could add as much as \$100 billion to \$200 billion to the United States economy every year. It opens foreign markets to our manufacturing and agricultural products, and for the first time, covers services. It does all of this while preserving our sovereignty, and especially our ability to retaliate against unfair foreign trade practices.

With NAFTA our nation chose to take the new world economy head on, to compete and win and not retreat. Our willingness to lead set the pace for other nations of the world. Americans have reason to be proud; we're on the way to making this world change in a way that works for us. I know that all of you join me in wishing our

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negotiators well and hoping that we can conclude a successful agreement. We have another day.

I'm delighted to be here in this wonderful auditorium again, the same place where we signed the historic NAFTA legislation just a few days ago. A lot of people thought that fight would end up in defeat. But I felt if we stuck by it, if we just kept arguing that a wealthy country can only create jobs and raise incomes by increasing the number of its customers for goods and services, in the end we would prevail. And we did, thanks in large measure to an enormous bipartisan coalition of people from all over America, and to the efforts of Secretary Ron Brown who worked very hard on it, as well as Mickey Kantor and so many others.

I'm honored to be with you again for this happy occasion because, like NAFTA, the Malcolm Baldrige Quality Award is an important part of our effort to change the way America thinks about doing its business.

In the months since I have been in office, we've been taking all the specific actions we can to try to help our nation adapt to the changing world we find -- working to create a climate in which private enterprise can grow and prosper and put Americans back to work. From the deficit reduction program to NAFTA, to addressing the credit crunch, to the deregulation of high-tech exports, to the successful meetings with the G-7 nations and the Asian Pacific nations, the goal is the same: to make our people more secure in the shifting economic environment at home and abroad by allowing us to compete and to win.

With the reduction in the deficit and the other actions, we see inflation down, interest rates down, job creation up, personal income up. We see things moving in the right direction. Consumer confidence rose 18 percent in November. We've had seven months of increased retail sales. Last month, people who were delinquent in their home mortgages were at their lowest level in 19 years. Over five million Americans have refinanced their homes. Millions of others have refinanced other debt. Manufacturing is expanding.

We are trying, in other words, to take care of our business in the government so you can take care of your business -- increasing productivity, creating jobs and incomes for the American people. When both of us do our part, the government and the private sector, we're on our way to long-lasting economic growth.

Six years ago, the United States government in a previous administration exercised the wisdom of establishing the Baldrige Award. In no time, because of the astounding success of its winners in taking care of their business, the award became a symbol of excellence and an inspiration for the rebirth of American competitiveness. For that, we owe a good deal to the legacy of the award's namesake. Until his untimely and tragic death in 1987, Commerce Secretary Malcolm Baldrige was a voice in urging Americans to focus on quality. His cause lives on through this award named for him. And we are honored very much to have his family here with us today.

The idea of quality took hold as American companies became more and more aware of the intense and growing competition from overseas, and more and more clear in this country of ours we could never hope to compete in America by lowering our cost of doing business, and particularly our labor costs, to the level of the poorest nations of the world.

The challenge is clear: How do we learn from our competitors? How do we meet them head on? How do we learn from each other in every workplace in America? All these success stories have a common theme: Companies that listen to the needs of their customers and the ideas of their workers; companies that streamline their operations and adopt the idea of continuous improvement in products and services. It's management from the top down and from the bottom up, better known now as quality management.

Through the Baldrige Award and the principles of quality management it embraces, countless businesses have found new and stronger life. Beyond manufacturing, these principles are now beginning to be applied in fields like health care, education, and, yes, believe it or not, even government.

By giving both employees and customers a say in how businesses are run, these businesses have built pride and productivity while improving management and product and services. Quality management is clearly a win-win formula. It helps businesses to do well, it beefs up our competitiveness around the world, and it helps to create jobs and to stabilize and increase incomes for our working people.

This year's winners are outstanding examples of that.

I got my schooling in total quality management and what it can do when I was the Governor of my home state of Arkansas. That's when I got to know the people at Eastman Chemical Company. On several occasions I visited their plant in Batesville, Arkansas, and I used to tell a story on the campaign trail at home, walking into a room, seeing a guy -- this plant is sort of out in the country -- and seeing a guy working a computer wearing cowboy boots and one of those big rodeo championship belt buckles. If you're not from the rodeo country you've never seen one, but if you've never seen one, the first time you see one, it looks like a silver dish you might give as a wedding present to someone. (Laughter.)

Anyway, I walked into this room, and this guy had his jeans and his boots on and his big rodeo belt buckle on, listening to country music, working a computer. And he launched into a much more eloquent speech than I had ever given about the importance of raising the skills of American workers so we could provide for our families and our children and their future.

I also traveled to the headquarters of Eastman Chemical in Kingsport, Tennessee, for a close-up look at the progress they were making there. They were always a big help to me in implementing what I was trying to do at home. Indeed, Eastman Chemical loaned me one of their executives, Asa Whitaker, who worked to set up the Arkansas

quality management program, which was the first state government-wide program of its kind in the entire United States of America. Today that company is justifiably the large manufacturing winner of the Malcolm Baldrige National Quality Award for 1993.

It's a \$4-billion company with almost 18,000 employees in the manufacture of chemicals, fibers, and plastics for customers around the world. Under Ernest Davenport's leadership, the company has concentrated on teamwork aimed at quality management, and a relentless effort to exceed customers' expectations.

It's a strategy that works. For the last four years, more than 70 percent of its 7,000 customers have ranked Eastman as their number one supplier.

I say, also, that my experience with this company and the quality management work we did is one of the reasons that we decided to undertake the national performance review of the federal government, under the Vice President's leadership. And in that connection, I ask all of you to help us to achieve some of the systematic reforms that we are searching for that require some approval from the Congress, especially the reform of the personnel, the budgeting, and most importantly, the procurement systems of the government. We could save a lot more money and increase our productivity if we were free to do that.

Chuck Roberts, the Vice President of Ames Rubber Corporation of Hamburg, New Jersey, said there are probably more people in this auditorium today than all the people who work at Ames. (Laughter.) Now, when I read this, I found myself up here when Ron Brown was speaking trying to count the number of people in the auditorium. (Laughter.) Four hundred and fifty people work at Ames, and I think there are at least 100 more than that here today.

But it's quality and not quantity that's being measured. Still, even with 450 employees, Ames is the largest manufacturer in the world of rollers for mid- to large-size copiers. It's the small business winner of this year's Baldrige Award. At Ames, it's not unusual to find second- and third-generation employees with the company. The atmosphere is like family and like a team. Workers even call each other teammates. Every worker belongs to at least one of 40 company groups dedicated to quality improvement. The impact of these groups collectively has been dramatic. Since 1989, it's increased productivity by 48 percent. And in the last five years, teammate ideas have saved the company and its customers more than \$3 million. As a small producer and a large industry, Ames President and Chief Executive Officer, Joel Marvil, has made his company a model in applying quality management.

One thing that distinguishes these two companies is that both have expanded the idea of partnership between companies and suppliers, between workers and managers, even partnership with the environment. Both these companies have been industry leaders in environmental safety, and their success has further proved that the choice between growth and the environment is a false one. In the end, we must find a way to have both.

In our nation, we know we have the brightest managers, the best workers and the most advanced technologies. But we also have to prove that we can all put it together in ways that lead to increasing productivity, increasing jobs and increasing incomes.

I couldn't help thinking as I was reviewing the history of those of you who are winning this award today that if more American companies operated like you do, there would be much less anxiety when we have to make changes like we did when we had to decide what to do about NAFTA, because a lot of opposition to NAFTA really had nothing to do with the terms of the agreement, but instead had to do with the incredible anxiety that working people felt that their jobs and their incomes and their families weren't really all that important to their employers; and that if there was some sort of short-term advantage to be gained by a company, even if it led to the long-term damage to their families, that the advantage would be chosen over the family.

When you look at the long-term productivity of the kinds of companies that are really proving that you can make good money in America by using new partnerships with your workers, you see a level of security and trust and almost fanatic devotion to the cause of the enterprise -- that if we had it everywhere, it would be much easier for America to take the steps we need to broaden our horizons, to reach out to other countries, to increase trade.

So I thank you for that, and I hope other companies will follow your example because we need more people at work happy, secure and supporting the objectives that you have supported. (Applause.)

Make no mistake about it, the winners of the Baldrige Award have done a great service for America, and they have done a service that only the private sector can provide in this great capital economy. This is a free enterprise system. Government has responsibilities to set a framework, to promote growth policy, to do those things which cannot be done in the private sector. But in the end we rise or fall economically, based on whether our system is working for the benefit of the people that labor in it day in and day out. And given the fact that so much of our security today and in the future is a question of our economic security and our ability to compete and win, I think it is nowhere near an overstatement to say that these two companies, Ames Rubber and Eastman Chemical, have done a great service not just to themselves, their employees and their customers, but to the United States. And we congratulate them today.

Thank you very much. (Applause.)

(The awards are presented.)

END 10:52 A.M. EST

THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release

March 6, 1996

REMARKS BY THE PRESIDENT  
AT PRESENTATION OF THE 1995  
MALCOLM BALDRIGE QUALITY AWARDS

The Roosevelt  
Room

2:10 P.M. EST

THE PRESIDENT: Thank you. Let me say how delighted I am to be here today to be a part of this again. I want to begin by thanking a few people. First I'd like to thank Secretary Brown and all the others who are here from the Commerce Department for, I think, giving this country the best Commerce Department it has had in many, many decades. And I thank them for that.

Mr. Houghton and Mr. Bradshaw, I thank you and all your team for coming here today. And we want to especially welcome Mr. Houghton's brother, Congress's most prominent musician -- (laughter) -- Congressman Arno Houghton from New York.

I thank the Baldrige Foundation. Its chair, Bob Allen is here -- thank you, sir, for your work. I want to thank the people

in the White House who are my eyes and ears in outreach to the American business community -- Mack McLarty and Alexis Herman.

Let me say, I have some remarks here I decided not to give because I want to just tell you a little bit from the heart what this means to me. When I became President I had worked for 12 years as a governor, starting in a state with an unemployment rate that was 3 percent above the national average, and that never got down to the national average but one month until 1992, the last year I served. We decided that we had to build a partnership with business. We decided that America would not do well unless manufacturing came back, and we decided to put a special emphasis on the whole quality management approach, to make people who were committed to that feel welcome in our state. In the 1980s when there was a dramatic drop in manufacturing employment nationwide, it went up in our state. And we were proud of it, and we worked on it.

So I am very familiar with the Baldrige Award -- with the memory of Secretary Baldrige and all those in both parties who have supported this award since its inception. And I just want to say a few words about what the significance of this is.

There's a lot of discussion today about whether things are good or bad in the American economy. The truth is, there's a lot of good and there's some bad, because, as all of you know who are working in this arena, we are going through a period of breathtaking change, the most dramatic change in a hundred years, since we became an industrial society from an agricultural one. And that is forming great changes in the nature of work, there's more mind and less muscle in it; great changes in the nature of the workplace -- there's not a person to waste, there has to be very high levels of productivity; great changes in the market -- all the markets for money products and services are global now, either directly or indirectly. And that has put great new challenges on our society.

We should not underestimate, first of all, the importance of a commitment to productivity and to quality. It is the revolution which has occurred in American manufacturing, I am convinced, that has led the way to giving us the kind of economy, with declining deficits and lower interest rates, which has permitted the United States to create 7.7 million new jobs in the last three years, when the other six big economies in the G-7, together, have netted out at zero. It is not easy to create new jobs in the beginning of this technological revolution. So I cannot tell you how important that is.

The second thing I want to say is that that has been a model for me for what we should do in government. Our state, when I was a governor, had the first quality management program of any state government. And the Vice President's reinventing government operation here has, obviously, had a significant impact on not only reducing the size of government to its lowest in 30 years, getting rid of 16,000 pages of regulation, but, more important, raising the performance level in many, many agencies.

The third thing I want to say is that one of the ways we

have to manage this transition is to continue to create more good high-wage jobs. And we can do that through the passage of specific legislation, as we did with the Telecommunications Bill, which passed with virtually the unanimous support of the Congress, members of both parties, and which I believe and Secretary Brown believes will create millions of new jobs. That directly affects, obviously, Corning and his specific division, but it will indirectly affect all of America if we can create three to three-and-a-half million more high-wage jobs. It will help people undergoing transitions in other companies to move to those new jobs.

The third point I want to make is that both of these companies have proved that you can have the right sort of partnership with the government. The Secretary mentioned that both of them had done work with NIST, which is our technology division within the Commerce Department. The Commerce Department has done two things better than any predecessor, I believe, thanks to Secretary Brown and the others who work there. First of all, they've done a better job in opening the doors around the world for American businesses and American products. And secondly, they have tried to help in a very effective way, managed the transition by investing in partnership with the private sector in important emerging areas of technology. And that is very important. That's the sort of thing government ought to do -- not deciding exactly how this economy will grow, not picking winners and losers, but working with the private sector to provide that extra added measure of cooperation in the new technologies that will enable us to win.

The final thing I want to say is this: These two companies -- and I want to say a special word here about Armstrong. Henry said that, well, Armstrong was not -- it was a traditional manufacturing company, not a high-tech company. All manufacturing operations that are going to succeed have to be high performance companies. And they have to get the most out of their people. And they are managing this transition in the same way I'm convinced we have to manage it here -- teamwork. The people who aren't here whose names we'll never know are just as important as the people who are here in the fact that these two companies won these awards today.

And that's something we need to keep in mind here in Washington. If we had more teamwork we would be more successful at giving the American people a higher return on their tax dollar and in moving more quickly through this transition. That is what works. And in a time of transition you simply don't have the luxury of engaging in politics as usual, just like you can't engage in business as usual.

So that's the significance of this day to me. It's the validation of years and years of effort by people who believe in quality management. It's the validation of the proposition that we can create new opportunities for Americans if we work together to move into the future instead of running away from it. It proves that there is a proper role for the nation's government in a limited supportive way to help to create new economic opportunities, and, most important, it shows that when we work together, we never lose.

Thank you very much. (Applause.)

END

12:15 P.M. EST

THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release

December 6, 1996

REMARKS BY THE PRESIDENT  
AT PRESENTATION OF THE  
MALCOLM BALDRIGE NATIONAL QUALITY AWARDS

The Sheraton Washington Hotel  
Washington, D.C.

12:35 P.M. EST

THE PRESIDENT: Thank you. Thank you very much. Secretary Kantor; Mrs. Baldrige; Senator Pressler; Congresswoman Slaughter; Congressman Ramstad; my good friend, Ernie Deavenport, Mary Goode -- let me thank all of you. And let me say a special word of thanks to Arati Prabhakar, the Director of Standards and Technology for the work that she has done in this Baldrige process. Thank you, ma'am. (Applause.)

And, Senator Pressler, as you leave the United States Senate after a distinguished career, let me thank you especially for the work you did to pass the telecommunications law, which will help America immeasurably and create hundreds of thousands of these kinds of good jobs in the years ahead. Thank you, sir. (Applause.)

I'd also like to thank the Army Band for doing such a good job here today. Thank you very much. (Applause.)

You know, when they were playing The National Anthem, which normally I sing out of tune at the top of my lungs, but my voice has been a little constrained lately -- my approval is at an all-time high when I'm hoarse and can't speak. (Laughter.) I couldn't help thinking as I was listening to The National Anthem what America was like when Francis Scott Key wrote that anthem, and what he would think about what we have just seen today -- how proud it would make the people who fought to start this country and who worked

to hold it together to see what we have become after 200 years. And for all of you, I thank you.

I was listening to all the speakers here and I was put in mind of the first public speech I ever gave as an elected official -- almost 20 years ago now I was elected attorney general of my home state, and I was invited to the Rotary Club officers installation banquet in Pine Bluff, Arkansas, in January of 1977. The banquet started at 6:30 p.m. I was introduced to speak at 10 minutes to 10:00 p.m. (Laughter.) There were about 500 people there, and all of them but three got to talk and they went home mad. (Laughter.)

But it was a wonderful night. There was entertainment from the local school groups and, you know, everybody got to talk. It was like it should have been, it was a community event -- a lot of people talked. And then this fellow got up to introduce me. And I was nervous as a cat -- my first speech as an elected official. And the first words out of his mouth -- just how I feel after hearing them speak -- he said, you know, we could stop here and have had a very nice evening. (Laughter.) I know he didn't mean it that way. (Laughter.) But we could stop right here and have had a wonderful, wonderful ceremony.

This is the third year I've had the privilege of honoring the Baldrige Quality Award winners, and every year I feel more strongly that this is the way America ought to work. This is the way all of our organizations ought to work. This is the way our families should work, the way our charities should work, the way our religious institutions should work, the way our colleges and universities should work, the way our schools should work, and the way our government should work.

Recognizing companies that have proved that excellence and good citizenship are compatible, that understand that business endeavors, like life, are much more a journey than a destination -- it's a very, very special thing for me. And I hope that my presence here helps to get all of you the recognition you deserve around the country, and hope that it will inspire more and more business people, and more and more people in every organized form of human endeavor in our nation to follow your lead.

This is an especially meaningful day for me today also because I used to do this with Secretary Kantor's predecessor, Ron Brown, and last March, we had a ceremony like this at the White House,

which was one of the last official duties Ron Brown performed before his untimely death on his mission to the Balkans. Let me say that he's probably smiling down at us today.

And let me also say how very grateful I am to my long-term friend, Mickey Kantor, for his outstanding job as Secretary of Commerce. First he was our Trade Ambassador where he negotiated over 200 agreements -- unprecedented record in the history of American trade -- everything from big agreements like NAFTA and the GATT agreement, over 21 agreements with Japan. In each of those areas in the aggregate, our exports to Japan have increased 85 percent in those 21 areas. There is no precedent for it.

And I was thinking of, as he was up here talking, too much of what Americans hear about public service is negative from time to time. Most of the people who work for this department, and most of the people who have worked for your government make America a better place. And Mickey Kantor and the people here at the Department of Commerce are shining examples of that, and I thank them for it. (Applause.)

I also want to thank the private sector partners in this endeavor, the 28 previous winning companies, the examiners, the Baldrige Foundation. For almost 10 years this award has been remarkably successful as a public-private partnership. We will have to have more of these in the future if America is to meet the challenges of the 21st century.

I'm very pleased that there will be new winners in the categories of nonprofit health and education organizations. I can tell you that if you look at the percentage of our economy and more important, the stake in our quality of life and our future in health care and education, this is coming not a moment too soon.

Finally, let me say a special word of appreciation to the Vice President for the work that he has led in our endeavors to have the federal government do more of what all of you are doing. Our government has about a quarter of a million fewer people in it than it did the day I became President. We've abolished hundreds of programs. We've privatized more operations than ever before. And we've been able to reduce the deficit by 60 percent and still continue to invest in education, in research and technology and environmental protection, the things that will keep our country strong in the future.

I'm proud of the fact that, thanks to you and millions like you, our economy is strong and growing stronger every day. Today we learned that in November, while there was a small increase in the unemployment rate, wage increases continued to come to American workers because of increasing productivity. We had 118,000 more jobs, which means in the last three years and 10 months our economy has produced 11.9 million new working opportunities for the American people, something all of you can be very, very proud of.

Now we have to keep this going. I'm very much committed to passing a bipartisan balanced budget plan with the Congress which will keep our interest rates down, keep our economy growing, and continue to honor our commitments to our children, our future, our economy, our parents, and the quality of the environment.

But whatever we do, we know that ultimately American progress will rise or fall on the performance of American business and American workers. Both large and small, American businesses are the engine that will help to carry us into the 21st century. Two decades ago our companies had little competition from abroad. Today we know we compete in the world for jobs and markets. The business community has led the way in sensitizing all Americans that we must measure ourselves by high standards. We must achieve high global standards. That is what I seek for the performance of your government, for the performance of our educational institutions, for every single endeavor in the United States.

ADAC Laboratories' commitment to the customers has resulted in its phenomenal turnaround. Just think about tripling your revenues in three years. Now, if we could do that without a tax increase, there would be no deficit problem. (Laughter and applause.)

Let me -- I applaud Dana Commercial Credit Corporation's commitment to its customers, its employees and its community for the style of management that encourages employees to act on their own ideas and for your financial support of the Toledo School Board. Now, let me say that Mr. Morcott and I have been friends for a long time, and the Dana Corporation has a different sort of plant in Arkansas, one of the most highly roboticized plants in the United States making truck transmissions.

One of the things I liked about that place the first time I ever visited it was that there were no parking spaces dedicated to the big wigs. So if the plant manager showed up late,

he might have to walk a block and a half to work. (Laughter.)  
However, I rejected that suggestion for the State Capitol when I was  
governor -- (laughter) -- which just goes to show you, we all have  
work to do. (Laughter.)

Custom Research Corporation has proved you don't have to  
be the biggest to be the best, 97 percent of a clientele being  
delighted is something that any organization would be delighted to  
achieve.

When I heard them reading the measures of how they  
define their success and they talked about the -- talking about all  
their employee endeavors, and I saw all of the cheers coming from all  
of you as well as from Trident Precision Manufacturing over there  
with their banners, again I say, think about the idea that every  
organization we're involved in ought to work this way. If we invest  
in training and education as Trident has. And one of the things I  
want to say about them that I especially appreciate that was not  
mentioned in this era of downsizing, I want to commend you for hiring  
people who had worked for larger companies and who were downsized. A  
lot of people who have been downsized still have outsized  
contributions to make to the American economy and to American  
society. And small businesses are going to have to take up that  
slack. I thank you for making that a priority.

Just think: satisfied customers; energized employees  
who are involved; respect and commitment to the communities in which  
you're involved in; investing in technology and the future; still  
making a profit; and at least by the evidence we've seen here, having  
a good time doing it. If every family in every organization of any  
kind in this country worked that way, we wouldn't have very many  
problems in the United States. That's the message I want to go  
across America today, and I thank you for sending it loud and clear  
every day in your lives. (Applause.)

Let me finally close by asking one more thing of you.  
America needs more strong companies like this and more organizations  
like this to be prepared for the next century. I believe with all my  
heart we are entering an age of greater human possibility than ever.  
It means in simple terms to me that in a place like America more  
children will have a chance to grow up and live out their dreams than  
ever before. It means if we do the right things we will grow  
stronger and more prosperous while helping more people all around the  
world to do things that we take for granted now but which would  
fulfill their dreams and their God-given potential in a way that has

never been possible before.

But to do it we have to understand that in times when things are changing rapidly, we have to be able to open our eyes and open our ears and open our hearts; we have to be able to think anew and act anew; we have to be dedicated to the idea of community, the idea of partnership, the idea that we can each have more personal, individual fulfillment when we work together with other people to help them achieve the same objectives. That's the only way we can move able-bodied people from welfare to work. A lot of you are going to have to help with that.

We passed a law that says that able-bodied people can only draw welfare so long, but what are they going to do? Go into the street or go into the work force? Every state ought to be willing to give those welfare checks to employers as job subsidies to move more people from welfare to work, and every vital company ought to be willing to examine themselves to see what they could do, because we don't have the money, and we shouldn't have these large-scale job programs funded by the government with only welfare workers in them.

We want to change a whole culture here and move people into the mainstream of American life. And that can best be done by a company hiring one or two or three, and then another company doing the same thing until we have a ripple effect all across America, and we don't have a welfare system and an unemployment system anymore, we have a system that deals with people when they're temporarily out of the work force, organizes those who can move into the work force, and helps those who, through no fault of their own, are simply unable to help themselves. That is an America that would be worthy of the pride, the honor and the support of every single citizen of this country. We cannot do it unless the private sector is a partner.

We cannot help our schools to meet the highest standards of excellence unless those of you who understand the world in which we are living and the one toward which we are moving demand that we have, yes, a lot of local control and more schools that are committed to kind of creative excellence in the way that you are, but we also measure performance by national standards of excellence, and we know that the measurements are good. Because I believe all children can learn and I am tired of people hiding behind various bureaucratic hedges to avoid measuring up and giving all our children a chance to learn. You can lead the way, and we need you to do it. (Applause.)

We have participated in a celebration of what is best about America. You have all thrilled me beyond measure. I loved seeing all the different things you did. I had the best seat in the house today. The Secretary and Ernie and I, we didn't have to worry about what we were going to say. We didn't even have to worry about

our constituents the way these folks did -- they were the political leaders here today. (Laughter.)

I got to spend this whole time looking into your faces. Those are the looks I want to see on the faces on every American child and you can help us do it.

Thank you and God bless you.

END

12:52 P.M. EST

## White House Press Release

### REMARKS BY THE PRESIDENT AT THE BALDRIGE AWARDS CEREMONY

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THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release

December 19, 1997

#### REMARKS BY THE PRESIDENT AT THE BALDRIGE AWARDS CEREMONY

Sheraton-Washington  
Washington, D.C.

11:54 A.M. EST

THE PRESIDENT: Thank you very much, Mrs. Baldrige, Robert and Nancy Baldrige, Harry Hertz, the examiners and judges and all those associated with the Baldrige Award Foundation, especially to the winners. We congratulate you all. We're delighted that the Chair of the District of Columbia Control Board, Andrew Brimmer, and Councilwoman Charlene Drew Jarvis are here.

And I want to thank Secretary Daley in spite of the fact that he was making fun of my penchant for animal stories of all kinds. (Laughter.) I mean, I don't come from Chicago -- (laughter) -- I come from the country. But my wife comes from Chicago.

I want to thank Ernie Deavenport, too. Several years ago the Eastman company loaned me an executive when I was governor of Arkansas, and we established the first statewide total quality management program in the country. It was what gave me the idea to start what eventually became the Reinventing Governor project headed by the Vice President, which among other things has now given us the smallest federal government since John Kennedy was here. And I'll give five dollars to anyone in the audience who can honestly say you have missed it. (Laughter.)

I say that because the federal employees have done a very good job of increasing their output and the quality of their service while down-sizing their numbers so that we can take advantage of technology, get the deficit down, and get the economy going again. So we have learned from you.

And I've talked with Ernie many times about the importance of trying to apply these lessons to other areas of human endeavor. You mentioned the two most important, I think, are health care and education. I also think there are applications -- if you look at the success in many law enforcement departments around the country, there are law enforcement applications here because the thing that -- a belief in continuous progress through not only doing the right things, but doing the right things right, gives you is the conviction that you can repeat whatever you're doing right in one place somewhere else. And that is by far the biggest problem government faces.

So I really am delighted to see you here. But, I think, for me, because I have seen this work over and over and over again, in the private as well as the public sector, that is what cries out for application to our public institutions, whether it's in education or health care or in law enforcement.

If the city of Boston could go virtually two and half years without a single child being killed by a handgun, until unfortunately, they had an incident last week, but they went two and half years. No city in the United States that big has been able to do that. They did. It must therefore follow that if other people did the same thing in the same way, and then you started the kind of contest you have here in the market system so everybody tried to keep continuously improving their process, that we would become a safer country.

In health care, we have all these -- you know, managed care, on balance, has been a good thing for America because we've managed some inefficiency out of the system. But now people are genuinely worried about who's making the decisions about their health care and whether quality will continue to be the most important value in the health care system. I think all of us want it to be, even those of you who have responsibility in your organization for holding down health care costs, the last thing in the world you want is for your employees not to have access to the health care that they need.

And goodness knows, in education -- I've said this so many times, the poor people in the press who have to cover me get tired of hearing it, but the most frustrating thing about American education today is that every problem in education has been solved by somebody somewhere, and nobody's figured out how to have everybody else follow suit so that you launch the kind of competitive process that you come here to celebrate today.

So, for all these reasons, I love coming here. And I always feels that by the time I get up to speak, there's no point in my saying anything. (Laughter.) I told Mrs. Baldrige I kind of hated to walk out here. You all were so enthusiastic, you should have been outside listening to all this energy being emanated from this room. It's wonderful to be in a place where people don't think it's too corny or too embarrassing to be exuberant about what they do. Can you imagine what would happen in this country if everybody wanted to wave a flag for the place they work every day? (Laughter and applause.) Can you imagine that? I'm sure somewhere in this room there is some cynic saying, this is too hokey; I can't believe they're doing this. (Laughter.)

Where do you spend more time than at work? Why shouldn't you want to wave a flag? Why shouldn't we want to cheer

about where we work? We want to cheer about our families, cheer about the places we work, cheer about the clubs we associate with. This country would work a lot better if everybody felt like they could cheer about the place they work. That's why I always try to make these awards, and why I think it was a stroke of genius to establish them, although I bet even when they were established the founders could never have imagined what the far-reaching impact would be -- that most states would follow suit, that countries would follow suit.

There is this idea now embodied in our four winners today -- in 3M Dental Products, in Merrill Lynch Credit, in Solectron, and XBS -- that you can always get better, and that you can organize not only to do the right things, but to do the right things right, in a way that elevates the people who work for the enterprise, serves the general public better, and obviously supports the bottom line.

It's nice to think that. Otherwise, you would get bored, if you didn't go broke. (Laughter.) So it's sort of better, bored, or broke. (Laughter and applause.) If you get a multiple question like that, it's not too easy to make an A. (Laughter.) And yet we don't. None of us do all the time. But we come here to celebrate what we can do at our best.

I'd also like to thank the Department of Commerce, Secretary Daley, the National Institutes of Standards and Technology for the support that they give to this endeavor. It has been a great partnership. But most of all, I just want to say, just think about where this idea was 10 years ago and where it is today. Think about how many of the ground-breaking reforms that have been recognized in Baldrige Award winners in the past that are now just standard industry practice.

Think about what it would be like if everybody would so shamelessly try to learn what their competitors are doing and do it at least that well, and then figure out how to do it better -- if in every area of human endeavor you did that. I think that this is something that is really worth focusing on. What do we celebrate? The stake the employees have in the company, the flexibility, the innovation, the creativity, the spirit of enterprise. It has brought America back.

When I became President, indeed, when I was running for President, I saw that the 1980s, while they had been very tough on American business, had also produced a remarkable understanding that was widely shared throughout the country about what had to be done to be internationally competitive. And I always saw a big part of my duty here as just to have government policies that would reinforce what is right and get out of the way of what is right, so that we could create the conditions and give people the tools so that everybody could do what you're doing. And we've tried to do that.

I appreciate what Secretary Daley said about the turtle on the fencepost -- that's one of the things I always say in the Cabinet meeting. It took us three months and we didn't have to translate all my aphorisms to people who never had the privilege of living in rural areas. (Laughter.)

We've tried to do three simple things to help you. One, get the deficit down and balance the budget so that we could keep

interest rates down, improve interest rates not only for businesses but for individuals and on home mortgages. And two consequences of that are that we have an all-time high rate of home ownership. It's above two-thirds for the first time in the history of America. And we have record levels of business investment, which is becoming very important now because we're able to sustain a little higher rate of internal growth as you see a little turmoil around the world. I want to say a little more about that in a minute. But it's very important.

When the Congress adopted the balanced budget amendment -- I mean act -- in 1997, back in August, and I signed it, the deficit had already dropped by 92 percent below its high in 1992. It went from \$292 billion a year down to \$23 billion a year. And I want to make a point about that because I'm sure you found this in your company. When you get this award, you can come here and celebrate and you don't even have to think about how hard and often controversial some of the changes you had to make were to get to this point. Right? Well, when we decided we were going to bring the deficit down, it was like pulling fingernails out. And the bill in 1993 passed by one vote in both houses. Now all of us think we're geniuses. If it had gone wrong, half the people that live in town could have said, I told you they were fools. (Laughter.) But it worked. And now we're going to balance this budget and we're going to have a healthier economy. And that's very important because it frees you to do what you do best.

The second thing we've tried to do is to change the conditions in which you operate by opening more of the global economy to American companies. We've had over 200 trade agreements in the last five years -- by far the largest number ever. And the Uruguay Round, finished back in 1993, amounts to the largest tax cut on American goods in history. And now we're the number one exporter in the world again. I think it is very important that we continue to press ahead in that.

I believe very strongly that it was a mistake when we were unable to get enough votes in the House of Representatives to renew the President's Fast Track trade authority to negotiate comprehensive bills. Why? Not because nobody ever loses in trade in America. There are some -- in competition, there are by definition some losers and some winners. But most of the job loss in America comes from technological change and old-fashioned business failure. Some of it does come from change in the trading rules.

What is the answer to that? Well, there are only two answers: you can either say, well, we're just not going to change any more rules and try to pretend that we won't be subject to these global forces; or you could say, we're going to change the rules, create more jobs, raise more incomes, and do a heck of a lot better job than we've been doing in the past with the people who are dislocated through no fault of their own. The second is the right answer, not the first.

We have 4 percent of the world's people and 20 percent of the world's income. And the developing economies are growing at roughly three times the rate of the advanced economies like the United States, Japan, and Europe. Now, again, you don't have to be a mathematical genius to figure out if you have 4 percent of the people and you've got 20 percent of the income and you would like to stay roughly as well off as you are, and maybe if you're very clever get a little better off, you have to sell something to the other 96 percent of the people in the world, especially if their growth rates are

faster than yours.

Now, that does not mean that we should forget about the people who are dislocated from trade or from technology or even from old-fashioned business failures -- people who have to start again.

That brings me to the third thing that I want to say, which is that in addition to balancing the budget and having sensible economic policies, having an aggressive trade policy, we must have a policy that invests in our people and recognizes that in every company here rewarded, you were rewarded in part because you recognized that by far the most important resource you had were the people who were working for the company. Right? There is no question about that. (Applause.)

With all respect, nobody was up here waving a flag for the Xerox machine back home -- (laughter) -- or the whatever. Whatever the widget is, nobody was doing that. It's a great thing, whatever those machines are. You're waving the flags for yourselves and your colleagues that are here, because you know that basically creativity and continuous improvement requires people who can think and then who are free to act along the lines that they think and work out things together.

The very intellectual processes that you are trying to make permanent and imbed in the daily work of your companies require a level of thinking and reasoning skills that mean that we have to be committed in America to universal excellence in education.

Now, not everybody needs a college degree in physics. But everybody needs more than a high school diploma today, and everybody needs the ability to keep on learning for a lifetime. That's why we have tried to implement the national education goals and to oversimplify it by saying every 8-year-old should be able to read, every 12-year-old should be able to log onto the Internet, every 18-year-old should be able to go to college, every adult should be able to keep on learning for a lifetime. And we're trying to set up a system where that will be true for every American, because it will help more companies to do what you have done. And I think that's very important.

In this last balanced budget, I think 30 years from now when people look back on it, they'll say, aside from the fact that we balanced the budget for the first time in a generation, the most important thing about that bill was it opened the doors of college to every American who would work for a college education. With a tax credit called the HOPE Scholarship, that virtually makes the first two years of college virtually tax-free to every American, and other tax incentives and more Pell Grants. That's very important that we are setting the stage for promoting a comprehensive reform of America's schools -- kindergarten through 12th grade -- based on national standards and accountability for them and real production so that all schools will be organized for performance for all the children.

And I want to compliment Secretary Daley's brother on the remarkable work that has been done in Chicago to try to totally change the culture of education there to make it more like a continuous quality operation -- systematically in the way that all of you have achieved. So we're trying to do that. And as I said, we also have to do that for people who lose their jobs or who are

drastically underemployed.

What else do we have to? We want to set up -- we've doubled funds for dislocated workers in the last five years to invest in their training. The systems don't work very well -- or at least not nearly as well as they can. I'd like to see us consolidate all these government programs and give the workers a skills grant. Most people who are out of work have got enough sense to figure out what they could learn to get a better job or to get a new job. And I'd like to see anybody that qualifies just get a skills grant that they can take to the nearest educational institution of their own choosing and get the education they need to become a productive member of society and have a great chance to get a good job in an organization like the ones we honor today.

I'd like to see us, when a community is hard hit by a big plant closing, go in there like we did when the military bases closed. What's the difference? People are out work and you have great capacity. They deserve a chance to have everybody work together to get them started again.

So we need to do more on that. But that's the right answer -- not to run away from the global economy, not to say we're not going to trade. The right answer is to do more, more quickly for the people that are dislocated.

I guess what I'm saying is, we're still trying to get it right here. We're still trying to make our operation one that is continuously improving. But at least we know what the objective is. The objective is to give every American the chance to live up to their God-given capacity and live out their dreams. The objective is to give people the power they need to not only have successful careers, but to build strong families and strong communities. The objective is to help people balance the demands of work and family -- a problem that I hear in every place I go. The objective is to help our country balance our obligation to grow the economy and preserve the environment -- something we have proved, repeatedly, we can do over the last 30 years. The objective is to reach out to the rest of the world and get the benefits of the global economy, while meeting its challenges instead of pretending they don't exist. We are, whether we like it or not, all interconnected, one with another, in this country, and increasingly, beyond our borders.

I've spent an enormous amount of time in the last month -- enormous -- trying to help come to grips with the financial difficulties you're reading about every day in the Asian markets. Why? Because a huge percentage of our exports go to Asia. They are our neighbors now, for all practical purposes. And it is in our interest that those countries be able to be stable, growing, increasingly healthy countries from which we not only buy but to which we sell; countries that together we can build a stable future, instead of have a part of the world in the 20th century that called Americans there to fight and die in three wars. Better to be a part of the world that participates in -- three new stages of the global economic revolution in the 21st century. We still have a lot of challenges out there.

Technology is not a un-mixed blessing. It bothers me some of the things little kids can see on the Internet at night. It bothers me that people who know how to do it can figure out how to build bombs and have access to dangerous weapons just by having the technological availability of it. There are a lot of things that bother us about it. There are troubling questions of our competitive laws and how they should apply to new technologies that have to be worked out. That's why we all have to be committed to the idea that

we can continuously improve. Or in the language that was quoted from David Kerns (phonetic), that our endeavor is a journey without an end. That's frustrating to some people; they always want to get there. But the older I get, the more I like the journey. (Laughter and applause.)

So I thank you. I thank you for making America a better place. I thank you for your enthusiasm and for being a model for other American workplaces. And I ask you, when you go home, to share with your friends and neighbors who may not work with you the idea that this country is like where you work. America is still around after 220 years because we have a Constitution which said, if you want the country to always get better, you have to make it possible for people to always get better. And you have to give them the freedom to fail and mess up. I mean, that's what the Bill of Rights is all about. That's what the Constitution is all about -- limiting the powers of government and mandating, in effect, partnerships. That's what the flexibility of the Constitution is all about, so we could change over time to adapt to new circumstances without giving up our values. That's the kind of country you live in.

And if it's going to be everything it ought to be in the 21st century, it has to do as a nation what you're trying to do every day at work. And you have to ask yourself, do you think America is on a journey without an end, do you think we can always get better. I think the answer, because of your example and that of millions of others, is an unequivocal yes.

Thank you very much and God bless you. (Applause.)

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12:16 P.M. EST



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February 4, 1999

REMARKS BY THE PRESIDENT AT BALDRIGE QUALITY AWARDS  
CEREMONY

11:45 A.M. EST

THE WHITE HOUSE

Office of the Press Secretary

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For Immediate Release

February 4, 1999

REMARKS BY THE PRESIDENT  
AT BALDRIGE QUALITY AWARDS CEREMONY

The Grand Hyatt  
Washington, D.C.

11:45 A.M. EST

THE PRESIDENT: Thank you very much. I must say I always love coming to this -- this is the fifth time I have participated in the Baldrige Awards in the six years I have -- this is the seventh year of my presidency -- I've done this five times. And I like it because this group is always so restrained, laid back, unexpressive, you know. (Laughter.) Amazing.

I want to thank Secretary Daley for his truly outstanding service. And this is the first time he's told me he intended to stay the whole two years -- I appreciate that. (Laughter.)

I want to thank Roger Ackerman, who is genuinely devoted to the Baldrige Awards. And I thank all of those who are responsible for the program. We're glad to have Tish Baldrige here today. I thank Barry Rogstad, Bob Jones, Ernie Davenport. I thank the National Institute for Standards and Technology.

I want to also thank my Advisor for Science and Technology, Dr. Neal Lane, who is here; and Congressman Jay Inslee from Washington State, who came to wave the flag for Boeing. And I congratulate Boeing Airlift and Tanker -- (applause) -- Solar Turbines and Caterpillar, and Texas Nameplate

-- all of you for your great recognition today.

Let me say to all of you -- I have to ask your indulgence for a moment. This is the only opportunity I will have to be before the press for the rest of the day, and I know that you have been following the events in the Balkans and Kosovo and the work we're doing there to try to promote peace and avert another ethnic slaughter in the former Yugoslavia. And Secretary Albright's going to say something about this later today, but I need to take just a minute or two to speak not only to you, but through you, to the American people about this subject.

We have worked for years to restore peace in the former Yugoslavia. Three years ago, I am very proud of the role the United States played in ending the war in Bosnia -- with our NATO allies, with Russia and other allies. We sent 28,000 troops to that country, then. There are fewer than 7,000 today and we are continuing our drawdown. But the peace process has taken hold.

I just came from the annual Presidential Prayer Breakfast that Congress sponsors -- something I never thought I'd live long enough to see: the Prime Minister of the Serbian Republic within Bosnia -- you know, there's a Serbian Republic, and then there is the other republic, which is basically made up of the Croats and the Muslims -- the head of the Serbian Republic came to the Prayer Breakfast and looked at me, after all the battles we've fought, and he said, you know, we wouldn't be

at peace today if it weren't for the United States. And it could have -- (applause.)

But I would like to say to all of you, to the American people, what I said to the American people three years ago. The Balkans are an explosive area. They touch other difficult areas. And unless we can contain, and ultimately defuse, the ethnic hatreds in that region, they could embroil us, ultimately, in a much larger conflict with much more human loss.

Now, the biggest remaining danger to our objective of peace and stability in Europe has been the fighting in Kosovo. Unlike Bosnia, Kosovo is actually still legally a part of Serbia. But it is supposed to be autonomous under their law. Interestingly enough, Kosovo, which is primarily made of Albanian natives, is where the fighting in the former Yugoslavia began over a decade ago. We have an interest in seeing that that is where it ends.

If it continues, almost certainly it will draw in the neighboring countries of Albania and Macedonia. Both of their Prime Ministers came here today to meet with me and urge me to have the United States help to stop this war. It could potentially involve our NATO allies, Greece and Turkey. It could spark tensions again in Bosnia and undo what we just spent three years trying to do.

Certainly, if this conflict continues we'll see another massive humanitarian crisis; there will be more atrocities, more refugees crossing borders, more people crying out for justice and more people seeking revenge.

Our experience in the Balkans, and specifically in Bosnia, which all of you will remember, teaches us a sobering lesson: Where you have these smoldering ethnic hatreds, where you know they can get out of hand and destabilize millions and millions of other people, violence begets violence. If you don't oppose the violence it just gets worse and worse and worse, until finally you do oppose it at a much, much higher price, under more dangerous conditions.

Therefore, the time to stop this conflict in Kosovo is now, before it spreads, and when it can be contained at an acceptable cost.

We have agreed with our allies on a strategy that we believe can bring peace, and to back that strategy with the threat of force by NATO. If a settlement -- and it's a big if -- if a settlement is reached, a NATO presence on the ground in Kosovo could prove essential in giving both sides the confidence they need to pull back from their fights. If that happens, we are seriously considering the possibility of our participation in such a force. We are discussing it now with Congress and our allies. No decision has been reached.

Our willingness to contribute troops will depend upon a number of things, and I'd like to outline them: Number one, a strong and effective peace agreement. If both parties haven't committed to stop killing each other, there's no point in our sending Americans and other NATO forces and other allied forces into a situation where we can't succeed.

Number two, the parties must demonstrate a commitment to implementing the agreement and to cooperating with NATO and any other people who go in with us. Number three, we have to have a permissive security environment, with the withdrawal of enough Serbian security forces, and an agreement restricting the weapons of the Kosovar paramilitaries.

And finally, we have to have a well-defined NATO mission with a clear exit strategy. Our European allies and partners will have to contribute a substantial majority of the

troops, but NATO is a partnership, and they have a right to expect the United States, which has been the leader of NATO for 50 years now, to be a part of that. For now, we don't have to reach that question because the peace talks will begin on Saturday in France.

I would like to give a message, I believe, on behalf of all Americans, to both sides. For the Kosovar Albanians I'd like to say that this is a chance not just to stop your people from getting killed, but to take control of your destiny -- where your rights, your faith and your culture are respected, and you have the autonomy you have been promised by law.

For the Serbs, this is a chance to prove Kosovo can remain part of your country while regaining its autonomy and peace. For the people of both communities, this is a chance to stop wasting your energies and your lives on a useless war and to start conserving them for building a more open and prosperous future for your children. I hope that the people will take this chance. The United States will do what we can to support them.

Thank you very much. (Applause.)

I do love the Baldrige Awards. I love it when all the employees are up there cheering. I think people ought to like what they do. Do you ever think about how many fewer problems we'd have in this country if everybody was happy at work every day? (Laughter.) You laugh, but you think about it. How would you feel if you came here and you didn't feel like waving those handkerchiefs?

You know, it's a great joy for me and for Secretary Daley -- he alluded to this -- to have had the opportunity to serve our country at a time when we got out of debt and we went into surpluses and we drove interest rates down and we had all this new

investment and all these new jobs. And now we've got the longest peacetime expansion in history; and the lowest peacetime unemployment rate since 1957; and the lowest minority unemployment rate among African Americans and Hispanics ever recorded, since we started doing that in '72; and wages rising at twice the rate of inflation; and the highest home ownership in history; and for the first time, even in our cities, there are more home owners than renters -- never happened before.

It's wonderful for us to have been a part of that. But we know that what we in government do is to create the conditions in which all of you create those jobs and create that economic activity. In fact, one of the things that I'm proudest of is that the government's share of this economic expansion has been lower than any previous one since World War II. We have a smaller federal government than we've had at any time since President Kennedy was here. And I see every day fresh evidence that it is not only the changes in the direction of the government, it has been changes in the direction of American business that has brought America back.

Boeing Airlift and Tanker, Texas Nameplate, Solar Turbines -- you're showing the world that you can enhance competitiveness and make companies better places to work. You're showing the world that you can be good at what you do and happy while you do it. The employees are true stakeholders in the progress not only of their companies, but of our country, with new ideas and sharing in results.

I was particularly impressed to hear about how the winning companies helped employees enhance their skills, because that is a particular obsession of mine -- that many have provided on-site GED and English as a second language classes, reimbursed for college in advanced degrees, even paid for books. We have worked very hard to create a system in America of lifetime learning, but companies have to be a big part of it.

I'd also like to thank one of our honorees, Dale Crownover -- (applause) -- for going back to college at the age of 42 to get his degree and setting a good example for his employees. (Applause.)

Now, as I said, you have brought America back -- you and companies like you. When the Baldrige Awards started, our country was having difficulty in the international marketplace, and the vision of the Baldrige Awards was to show that there were American companies who were operating at world-class levels, and they ought to be honored, and then they ought to be emulated. And I think that you can take a great deal of pride in knowing that both those things have happened.

I heard a remarkable statistic -- I hope it's true, because I'm fixing to say it -- (laughter.) Normally, when somebody digs up a fact for me, it's so, listen to this: Stock in companies that have won Baldrige Awards has surged at nearly three times the pace of the S&P 500 as a whole.

Now, when you consider the fact that the stock market has nearly tripled since January of '93, the fact that the stock in the companies winning the Baldrige Award has gone up three times faster than the S&P index, I think that's pretty darned impressive. And it shows you that if we can -- one of the things that I hope always comes out of these Baldrige Awards, I hope this will be in business publications and in newspapers and on television stations all over America -- and I keep hoping that all of you get hit on, then, all year long, after you get off this stage, from people

wanting to know how you did what. Because I hope that everybody will be out there trying to follow your lead, and figure out how to do better, as you have done.

Because in spite of the fact that we have the lowest unemployment rate in peacetime since Boeing introduced the 707, in 1957, we know that the world is changing rapidly. And as every businessperson knows, once you slow down, the competition catches up. So this is not a time for America, with its prosperity, to slow down. It's a time to bear down, and look at the long-term challenges facing us in the 21st century.

I would just like to briefly mention three points. Our economic success as a nation has come from a commitment to fiscal discipline, investing in our people, and expanding our markets. And I believe we have a great deal more to do in all areas. And let me just briefly say, in the State of the Union address, I made what I expect to be an increasingly controversial proposal. I said, we've got the first surplus in 30 years now; we project that we will average big surpluses over the next 25 years. I recommend that for 15 of those 25 years, we actually save almost 80 percent of the surplus, and save it because when the baby boomers become the senior boom when we all retire there will only be about two people working for every one person drawing Social Security.

And -- did you laugh at me or what you said?

(Laughter.) As one of them, I don't think it's too funny, myself.

(Laughter.)

And the Social Security payroll tax will not be sufficient to cover Social Security payments by 2013. By 2032, the trust fund will run out of money. Meanwhile, we're all living longer and depending more on sophisticated technology, so Medicare is projected to not cover its costs by 2010.

Now, I believe we can debate within the Congress, within the Democrats and Republicans, exactly how we're going to fix Medicare and how we're going to fix Social Security, but I know one thing -- you're not going to fix big, sweeping demographic changes like this without some money. And so what I propose to do is to save this portion of the surplus, about a little over 60 percent for Social Security, 15 percent for Medicare for 15 years. And while we're doing it, to buy back the public debt with the money we're saving, because we don't need to spend it right now.

Now, if we do that, we will not only be able to save Social Security and Medicare in a way that will prevent the baby boomers from putting an impossible burden on our children and our grandchildren -- which I can tell you as the oldest of the baby boomers is something that my generation constantly worries about, that when we all retire the cost of our retirement will be too burdensome on our children and their ability to raise our grandchildren. It will not only do that, it will enable us to pay down our debt.

Now, if anybody had ever told you five or six years ago we'd even have a conversation about paying down the debt, you'd probably thought they had slipped a gasket. But I'd like to tell you why it's important. We just presented a budget to Congress. Before we do anything with that budget, we have to pay interest on the national debt. The national debt quadrupled between 1981 and 1993. When I took office it was taking over 14 cents of every dollar just to pay interest. Every time you pay a dollar in tax to the federal government, before we can spend it on the United States military -- including the Army Band who were magnificent today -- before we can

spend it on education, before we can spend it on the environment, before we can spend it on health care, before we can spend it on a tax cut -- before we can do anything with it, we had to take over 14 cents on the dollar and pay interest on the debt. And they told me, my economists, that it wouldn't be anytime until we'd be up to over 20 cents on the tax dollar in interest.

Now, if you save this much money for 15 years it will take our public debt from 50 percent, where it was when I took office, of our annual income, down to 7 percent of our annual income. It will be the lowest it's been since 1917, just before we entered World War I. And it will take debt service down to 2 cents on the dollar. And then our successors, the people that are up here running the show 15 years from now, they can do whatever they want with that 11 cents -- they can give it back to you in a tax cut; they can invest it in education; they can invest it in whatever else we need; they can make sure we keep modernizing our military. They can do whatever is the right thing then. But I know it is the right thing to prepare for the retirement of the baby boomers and to stabilize these programs and to get this debt down.

There's something else I'd like to say. A lot of you compete in international markets. On the way in today -- just today -- Roger and I were talking about the difficulty of -- and Secretary Daley -- we were talking about the importance of trying to keep these Asian markets open, with all this financial turmoil over there, and they're not having enough money. You know, Secretary Rubin and I, we worked very hard to keep the financial crisis in Asia from spreading the Latin America. Thirty percent of our growth has come from exports.

Now, we don't know what's going to happen beyond our borders. But I know this -- no matter what happens, we'll be better off, interest rates will be lower, there will be more money to spend on new plant and equipment, there will be more money to invest in American economic growth if we pay down this debt and we keep your interest rates low. Then if the world takes off again -- and we're working for it -- we'll do even better. And if there are problems in the world, we won't get hurt nearly as badly as we otherwise would have been.

So I implore you, if we want more and more stories like the ones we celebrate today, I hope you will support our efforts to save a substantial portion of this surplus until we have secured Social Security, stabilized Medicare and guaranteed low interest rates for another 15 years. It's important for America.

The second thing I'd like to say is that just as you make investments in your employees, we must make more investments. America has had for many years a budget deficit and an investment deficit. While we have cut the deficit, we've almost doubled our investment in education and training. But 88 percent of the companies -- listen to this -- 88 percent of the companies in manufacturing today are having trouble finding qualified applicants to fill at least one kind of job. One in five companies report that they cannot expand because they have not been able to have workers with the right mix of skills to support the expansion.

That's why I'm so grateful, as I said before, for the example that you were setting in your workplace; and why our administration -- the Vice President and Secretary Daley, Secretary Riley and others -- have worked so hard to set up a system of lifetime learning, to open the doors of college to all with tax credits and scholarships and much lower cost student loans, and many, many other things.

In this budget of mine, we are proposing a big new investment in our worker training system so we can support training and re-employment for every person who loses a job in America. We want to help millions more whose first language is not English, learn it. We want to help many more people come back and finish their GED, and then go on to college. And you are setting a good example.

We also, in this budget, have tried to provide the private sector with the necessary incentives to reach the biggest group of new markets that we haven't fully tapped, and those are the markets for employees and consumers in the inner city and in rural areas that still haven't been part of our recovery. Now, this is very important.

In America today, in the urban and rural neighborhoods where unemployment is high and growth is low, there is a consumer market of \$85 billion in those areas -- bigger than the consumer market of Mexico, which is our second-largest purchaser of American products, and trading partner. So what I have asked the Congress to do is to pass laws providing tax credits for people who invest in these designated areas, and also setting up a model, sort of like our Overseas Private Investment Corporation -- which many of you in this room have used before -- to guarantee a portion of investments in an inner city, so that, for example -- suppose that in a big urban census area that had a 15-percent unemployment rate, you were willing to go in and set up a plant with 300 people, and train them, and do all that, and the initial investment was \$300 million. If you took full advantage of this proposal of ours, you could have \$200 million of that \$300 million guaranteed in the American Private Investment Corporation. The other \$100 million, you'd get a 25-percent tax credit for the investment. So if we put together \$300 million of investment in an underdeveloped area, you would actually have only \$75 million at risk. That's a pretty good deal.

And we can -- if we can't take free enterprise into these urban and rural areas that have had no recovery now, with our lowest peacetime unemployment rate since 1957, with a high growth rate, and with safer investment opportunities at home than many of those abroad we pursue -- if we can't fix America now, when will we ever be able to do this? So, again, I hope you will support this. (Applause.)

The last thing I'd like to ask you to do is to support the continued expansion of trade. In the State of the Union address I said, we've got to build a new consensus on trade in America and beyond our borders. We've got to be able to convince the American people and people in other countries that trade benefits ordinary citizens; that it doesn't have to tear the environment up, it certainly doesn't have to depress labor standards.

I know, and many of you in this room know, that 30 full percent of all this growth that we all celebrate all the time, came because we've expanded trade. And so I ask for your support to make sure that the financial crisis we saw in 1998 doesn't become a trade crisis in 1999 because we don't do everything we can to continue to expand trade and support open borders. (Applause.)

Just last week the Vice President announced our plan that calls for a big reduction in agricultural tariffs, which now average 40 percent. We're trying to restore the traditional trade authority that Presidents since Gerald Ford have had, to create new opportunity for American companies. We are committed to doing this, and I thank you for your applause. But you know as well as I do that

a lot of Americans -- it's very interesting -- when we had this trade debate last year, I found that there was an unusual alliance in the Congress between some of the most conservative Republicans and some of the most liberal Democrats, both of whom thought those of us who were sort of stuck in the middle believing that we could actually create a new world economic system that would benefit ordinary people were wrong, and they thought we had to withdraw.

As I said, I'm working hard within my own party to build a consensus on this, and at the same time I'm trying to reach out to Republicans to build a consensus with them. But I do not believe we can continue to grow the American economy and raise American incomes, and reach into America's distressed neighborhoods unless we continue, also, to reach out to the rest of the world.

Furthermore, I believe we can minimize the likelihood that we will ever have to send our men and women in uniform into a big conflict if we have economic and other cooperation with countries that show that there are other ways to solve your difficulties than taking up arms, and robbing children of their future.

So that's what I think we ought to do. I'm glad we're doing well. I am grateful for having had the chance to serve. I

am very mindful of the fact that a lot of the credit for America's success goes to companies and the people who work for them, like those we honor today. But I am absolutely certain that this is not the time to sort of sit back on our laurels and say, isn't this nice, we've waited 40 years for a time like this, I think I'll take a vacation.

This is a time to take this prosperity we have, and this confidence we have, and expand our efforts. We can meet the long-term challenges of the 21st century. We can alleviate the looming specter that the baby boom might bankrupt our children and our grandchildren to pay for our retirement. We can guarantee a secure retirement, a compact within the generations, and we can pay down the national debt and guarantee low interest rates and a stable situation, and more capital to invest in the private sector for 15 years. We can improve our education and training systems; we can invest in our inner cities; we can expand trade. That is an economic agenda that will set a framework within which more companies who follow your lead will find the same kind of success that you have.

And remember what I said when I started. America wouldn't have nearly the problems we have today if everybody was as happy on the job as you are. Thank you, and good luck. (Applause.)

END

12:12 P.M. EST

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Congressional Testimony

**TESTIMONY OF**

**SECRETARY RON BROWN**

**ON**

**SCIENCE AND TECHNOLOGY PROGRAMS**

**OF THE**

**DEPARTMENT OF COMMERCE**

**BEFORE THE**

**SUBCOMMITTEE ON SCIENCE, TECHNOLOGY AND SPACE**

**COMMITTEE ON COMMERCE, SCIENCE AND TRANSPORTATION**

**UNITED STATES SENATE**

**JANUARY 31, 1995**

Mr. Chairman, Mr. Rockefeller, and members of the Committee.

Let me begin, Mr. Chairman, by commending you for holding this hearing and affording me the opportunity to talk about the Department of Commerce's technology programs.

Today, we are harvesting the results of research and technology investments made ten, twenty and thirty years ago. These are stories of remarkable success, due to the foresight of our predecessors who recognized that support of research and development and technology deployment is a fundamental mechanism for achieving national missions and a stronger economy.

Our vision for the future is one of a United States economy sustained by growth, creating economic opportunities for all Americans. A place where U.S. businesses — large and small — use globally competitive advanced processes to produce the goods and services that world consumers will demand — success stories of the 21st Century built on the farsighted actions of today and tomorrow.

We now have the opportunity to begin these stories. But to do so requires that we understand the nature of our economy and the lessons of our past support for science and technology efforts.

## **I. New Economic Realities**

Mr. Chairman, we are facing a time of great economic change. We have witnessed the demise of communism as freedom and democracy fill new nations with hope and opportunity. I have visited these economies in transition — South Africa, the Middle East, Russia — places where a new economic future is being built.

At the same time, a new battlefield has emerged in the form of a global marketplace, and able competitors from around the world are fighting for a share. Technology is racing ahead at a breath-taking pace, with each advance more staggering than the last.

And, in the wake of these forces, the way we live, learn, work, and play is being forever transformed. Each of these changes alone would be revolutionary but, together, they have produced results that are deeply felt by Americans in all walks of life.

These changes create uncertainties — and opportunities. We must confront the basic challenge of our time: Will we try to hold change at arms-length or will we take advantage of the opportunities that change will bring? And we must answer that challenge with this strategy: to empower Americans with the tools that they need to take advantage of economic opportunity.

We must work as a nation — with our businesses, with our workers, with our communities — to ensure that the United States remains the locus of dynamic firms, strong communities and skilled workers. In today's economy, it is not just companies, it is also nations that compete.

Consider the ingredients of sustainable national economic growth: investment, a skilled workforce, open markets, and, most importantly, innovation. Together, they form the basic equation of international competitiveness.

Today's hearing will focus primarily on the Department's technology programs — the Advanced Technology Program, the Manufacturing Extension Partnership, the Telecommunications Information Infrastructure Assistance Program, and the lab programs at the National Institute of Standards and Technology (NIST) and the National Oceanic and Atmospheric Administration (NOAA). But I want to make the point up front — for it is important to consider — that all the activities of the Department — from trade promotion to weather prediction to calibrations services — form an integrated, highly leveraged package that makes our Department the Department of the Future.

And, Mr. Chairman, our programs are smart programs — programs that lubricate the free market engine. Programs that boost investment, not crowd it out. Programs that provide economic opportunities and expand the economic pie for all Americans. Programs that reduce barriers to competition today and tomorrow, not raise them.

I also want to make it clear that we are constantly thinking about the future. There has been a lot of talk recently that the United States' competitiveness problems are behind us. Under the leadership of President

Clinton and Vice President Gore, we have made tough decisions and have begun to get our fiscal house in order. We have reduced the deficit for the third straight year -- the first time since the Truman Administration -- and we have reduced the size of the federal workforce to the smallest levels since President Kennedy's time, all the while making government more responsive and more effective. What should be up -- economic growth, jobs, and consumer confidence -- are up. What should be down -- the deficit, unemployment, and inflation -- are down.

But I want to warn us against confusing short term economic revitalization and strong economic growth with the resolution of longer-term, structural problems. We still have our work cut out in a number of areas. Trends in R&D spending and our merchandise trade balance, for example, are still troubling. And while companies have restructured, reduced waste and improved efficiency, and begun increasing investment in plant and equipment, they have a long way to go to catch up for the years they have lagged behind their competitors. And, many smaller companies and urban and rural communities have yet to feel the benefits of our national economic performance.

But I am not here this morning to tell you that the sky is falling. It is not. We have a strong and vibrant economy. I'm here to tell you that we are headed on the right track and to convince you that now is not the time to change our course.

My principal emphasis will be on the importance of stimulating innovation, which I will discuss in detail. It is important, however, that we bear in mind our responsibility to further the national interest in each of the four ingredients of economic growth.

First, investment. Private investment drives competition and growth. It is critical to support private investment through sustained progress on budget deficits. That is why President Clinton fought so hard -- and so successfully -- for a deficit reduction package that got government out of businesses' way in our capital markets. The result: since the end of 1992, business investment in plant and equipment has increased at an annual rate of 14%.

Private investment provides a lifeline for those dynamic firms that spur technological innovation, create jobs and foster economic growth. For example, two-thirds of the manufacturing jobs created each year originate in plants that grow by 25 percent or more in that year alone. The basic lesson is clear: Our economy is only as strong as the best firms that populate it.

Second, a skilled workforce. For firms to succeed in the economy, however, it is necessary that we have an educated, well-trained workforce. Traditional economists might view knowledge and labor as two distinct sources of economic growth but, in today's information-based economy, the prowess of our workforce is increasingly bound to the success of education and training. We cannot capitalize on advances in science and technology without a workforce able to harness these innovations. That is why the President's middle class tax cut is focused on education and training.

Third, open markets -- both foreign and domestic. As you know, Mr. Chairman, opening foreign markets to the effective participation of U.S. businesses has been a priority of this Administration, of the Department of Commerce and of my own activities. Of course, our leadership in science and technology will only bear fruit if we have markets open to our innovative products.

The passage of the North American Free Trade Agreement (NAFTA) and of the Uruguay Round GATT agreement will create enormous potential for world trade and economic growth. NAFTA has begun to take economic hold. U.S. exports to Mexico shot up 23 percent in the first 10 months of 1994 compared to the same period a year earlier. Mexico and Canada alone accounted for nearly half the growth of global U.S. exports during this period. When fully implemented, GATT should add as much as \$100 billion to \$200 billion to the U.S. gross domestic product annually; raise total U.S. employment by hundreds of thousands of jobs; save individual U.S. consumers hundreds of dollars annually in lower costs of food and other important items; and boost real wages and living standards in the U.S. and around the world.

The framework of open markets is, however, not enough. Exploiting those opportunities is just as critical. That is why the inter-agency Trade Promotion Coordinating Committee, which I chair, issued the first National Export Strategy in 1993 and refined that strategy in a report issued last

October. The purpose of the National Export Strategy is clear: to help U.S. companies — small, medium and large — realize their full export potential.

Boosting U.S. exports is a core mission of the Department of Commerce. Our advocacy, and that of President Clinton, on behalf of U.S. businesses competing for foreign government procurements is beginning to bear fruit:

- o in Saudi Arabia's intent to purchase aircraft from the Boeing Co. and McDonnell Douglas Corp., valued at \$6 billion, and that country's \$4 billion contract for telecommunications network modernization awarded to AT&T;
- o in Brazil's award of the \$1.5 billion SIVAM rain-forest protection contract to the Raytheon Company, a defense contractor moving into civilian production;
- o in China's agreement to purchase \$6 billion worth of goods and services from U.S. companies, including two Westinghouse contracts worth \$450 million, an Applied Energy Services contract worth \$1.5 billion, and an AT&T agreement valued at \$500 million to provide telecommunications equipment;
- o and, in India's more than 25 deals worth over \$7 billion with U.S. companies such as Tandem Computers, Hughes Network Systems, Inc., and United International Holdings, Inc., and the establishment of the U.S.-India Commercial Alliance.

Of course, markets here at home must be dynamic and competitive as well. We live in a global era in which success at home will often translate into success abroad but in which, conversely, failure to achieve success at home will leave domestic firms at risk in the United States and at a competitive disadvantage abroad. That is why, for example, the Administration has placed such emphasis on the passage of telecommunications legislation that will deregulate and open new markets.

We look forward to working with the 104th Congress to reform our 60-year old communications law to remove legal and regulatory impediments to competition while still safeguarding the public interest.

The importance of this effort is too obvious to ignore. Last year the Council of Economic Advisors issued a report detailing the economic benefits that would be derived from telecommunications reform. The CEA predicts a boom in the telecommunications and information sector of the economy over the next ten years, doubling its share of the GDP, adding more than \$100 billion to the economy, and employing another 1.4 million workers in that sector.

Fourth, innovation. Technological innovation is vital in the new knowledge-based global economy. Rapid and continuous improvements in products, and the techniques to manufacture and bring them to market more efficiently, give businesses -- and nations -- a competitive edge today and tomorrow.

In this environment, it is easy to see why the high-technology sector and firms that adopt advanced technologies are critical to economic prosperity. By some estimates, as much as forty percent of the nation's economic growth over the past fifty years is related to the development and use of technology. Average annual compensation in the high technology sector, moreover, exceeds by twenty percent the average for all manufacturing. High-technology products also account for a rapidly increasing share of the manufacturing output of industrial countries -- 35 percent in 1992, nearly double the 1980 figure.

The close connection between innovation and economic performance has been confirmed by new research from my own Department released only last month. Our report, entitled "Technology, Economic Growth and Employment," found that firms that use advanced technologies are more productive, pay higher wages, offer more secure jobs, and increase employment more rapidly than firms that do not.

The importance of this conclusion cannot be overstated. It is central to our economic fate. That is why my Department has focused its attention on this central question: How can we stimulate innovation in the U.S. economy?

Part of the answer comes from the connection between and among the four basic ingredients of growth that I have outlined. Each of the other three ingredients -- investment, a skilled workforce and open markets -- is integrally linked to the fourth, innovation. A sound macroeconomic environment,

educated workers and markets in which innovation can produce competitive success are all necessary to the successful promotion of innovation.

Indeed, in each of the these areas, the Administration has taken action that is focused directly on the importance of innovation, including:

- o winning Congressional approval for a three-year extension of the R&E tax credit and a targeted capital gains reduction for investments in small business;
- o working with Congress to create the School-to-Work transition program for young people who choose not to go directly to college, and establishing Goals 2000 standards for K. through 12 education;
- o improving access to college loans so that our future scientists and engineers can get the education they need;
- o freeing \$32 billion in exports by reducing controls on U.S. computer and telecommunications products;
- o stimulating major sales of technology-based products for U.S. companies through high-profile industry-government trade missions that helped close contracts worth more than \$17 billion in U.S. exports, involving 275,000 American jobs – many of them technology related;
- o developing a new Presidential policy on commercial remote sensing that allows private firms to build and operate high-resolution satellite imaging systems, which will create manufacturing and operation jobs;
- o transferring 200 MHz of the radio frequency spectrum to the Federal Communications Commission for assignment to the private sector potentially through a competitive bidding process;
- o negotiating commercial space launch trade agreements with the governments of Russia and China to create a level playing field on which U.S. providers can compete; and

- o applying new technologies, from satellites to doppler radars, for better weather warnings and the protection of life and property.

And, the Administration also has provided adequate funding for basic science and applied research -- even within the hard freeze on discretionary spending that the President has proposed continuing through Fiscal Year 2000.

We should recognize at the outset that the Contract with America would jeopardize that technology policy. Among the possible offsets proposed by the Contract are the elimination of our Advanced Technology Program and a freeze on funding for our National Oceanic and Atmospheric Administration, which conducts much of the Department's basic research. Moreover, generalized reductions in the President's investment spending, totalling more than \$1 billion over five years, would further threaten our research and technology initiatives. For reasons that I will explain in detail, I hope that the Congress, after full consideration of our efforts, will continue the pro-science, pro-technology path that the President has forged and that is essential to our long-term economic prosperity.

Through all of these efforts, innovation can be spurred. But, for reasons that I will explain below, these measures alone are not sufficient.

## **II. The Need for Pro-Innovation Policies**

The United States has been a leader in innovation. From the electric telegraph, to the telephone, television, personal computer and the manned mission to the moon, this nation has always looked to the future -- and invented ways of getting there sooner.

The United States must remain the world's leader in innovation. To do that requires an understanding of the incentives that create -- and the barriers that can stop -- both the development and deployment of technology.

Technological innovation is a complex process. It is so complex that each industry -- and even each firm within an industry -- must grapple with a different set of concerns. For example, strengthening intellectual property protection is a key concern, particularly for the software industry. Cold war era export controls have hurt the U.S. computer and telecommunications

industries. Regulation can be a major impediment by increasing the time and capital it takes to bring a new product to market – especially in biotechnology and pharmaceuticals. Both capital availability and access to technical expertise are continuing struggles, especially for our small- and medium-sized companies.

In short, there is no "one size fits all" formula for ensuring that our companies lead the world in innovation. Our national competitiveness strategy must address the broad range of factors that affect our companies' ability to develop technology, turn innovations into products and services and bring them to global markets at a rapid pace.

While innovation must continue to come from the private sector, government must work to maximize opportunities for private businesses to innovate – by reducing export controls, reforming regulations to give our companies and our workers elbow room to compete, by opening markets, by improving education, and by creating incentives for private industry to invest in long-range, high-risk research.

My department is pursuing a broad range of initiatives to improve the climate for private sector innovation. We are listening to industry as we establish departmental priorities, and serving as industry's advocate in shaping regulatory, export control and environmental policies. And we are partnering with industry to work on the nation's 21st century technological infrastructure.

This partnership continues a long history of cooperation between the public and private sectors. For the greater part of two centuries, the government has worked as a junior partner with industry to build or encourage American infrastructure. That infrastructure has created a "playing field" upon which private enterprise built the most successful economy in the world. Government has built lighthouses and harbors for private sector shipping, offered federal rights-of-way for private sector railroads, built interstate highways, airports, advanced radar for aircraft, next generation doppler radar, and GOES satellites. By making investments that individual entrepreneurs, or even large companies, could not afford to make themselves, the government enabled everyone to become more efficient and productive.

And the government's investments in infrastructure have not been limited to our physical infrastructure. Since World War II, our national government

has invested in science and technology as part of key national missions — defense of the nation, health, space, and the quest for new knowledge. And, for years, we have seen a steady flow of new commercial technologies emerge from these government investments as an extra benefit.

As a result of government's technology investments, the U.S. computer industry is the world's leader. We have seen a flow of blockbuster drugs and medical therapies, and the birth of the biotechnology industry — all of which can be traced to earlier government investments in defense technology or medical research. NASA's aeronautics research program has provided America's aircraft industry with the mid- and long-term technology development that a single company, no matter how large, could not afford to do on its own.

Times and technology have changed. We face stiff international competition in one field after another. Cycle times — the time from innovation to product — have shortened in most industries. We can no longer hope that a technological breakthrough spurred by a national security or mission need will be first to market.

Today, we seek — and need — a different model, one which focuses explicitly on civilian industrial technology and better connects the federal basic research mission to real-world private-sector commercialization — one in which private-public partnerships spur private sector investment in high-risk, long term innovations with broad economic impact.

And development of technology is not enough. We must also consider the extent to which it actually reaches those who can employ it effectively. That is why, as a nation, we have supported the deployment of technology to people who might not have the resources to find it on their own. For example, beginning this January, the Department's National Meteorological Center will issue experimental seasonal climate forecasts for the contiguous United States and Alaska. These forecasts will lead to substantial immediate benefits to the U.S., including the agriculture and water resources management sectors, and other sectors dependent on seasonal variability.

The development and deployment of technology are both part of today's great national mission of providing all Americans with the tools of economic opportunity.

First, we must focus on the national interest. In the past, federal action was focused on specific missions: defense, aeronautics, energy or health. But today, our focus must be broader, because we do not have the luxury of three separate industrial bases for military, mission-oriented and commercial purposes.

Our mission oriented agencies -- the Defense Department, the Department of Energy, and NASA -- are no longer the dominant customer for most high technology. Nor are they in a position of technological leadership with respect to the commercial sector. In computers and semiconductors, for example, DoD consumes less than five percent of the U.S. market. In fact, the new technologies that are most critical to our military advantage -- software, computers, semiconductors, telecommunications, advanced materials and manufacturing technologies -- all are being driven by fast-growing commercial demand, not military, energy, or space demands.

Instead of looking for spin-offs down the road from some non-commercial purpose, we must examine the pursuit of civilian technology as a mission in and of itself, but we must do that only as a partner with industry.

Second, in examining that goal, we must recognize that all research and development and technology deployment is not the same. In this regard, we might usefully consider the nation's R&D expenditures as building a portfolio for the future.

As illustrated in chart 1 (attached), in 1993, industry funded nearly 55% of all U.S. R&D. More than 90% of that industrial research was concentrated on short-term commercial development and applied research. And properly so, for it is only the private sector that can connect today's market demands to immediate product development.

And as seen in chart 2 (attached), 59% of the Federal government's \$69.7 billion R&D funding in 1993, and about one-quarter of all national R&D is related to the mission of defense. Health-related R&D accounted for about

15% of the Federal government's R&D spending, while about 10% went to the space mission.

Only about 4% of Federal R&D spending in 1993 went to civilian industrial technology and less than one percent went to the development of early-stage, pre-competitive civilian technologies. *Science* reports that less than one-twenty-fifth of industry R&D funds go to early stage, longer term, higher risk research. The Industrial Research Institute survey of industry R&D performance confirms press accounts that industry is reducing the level of investment in early stage research, with only 8% of firms expecting increases in this category of research in 1995.

The discovery of fundamental new knowledge, basic research, is a vital component of our innovation portfolio. But it is not enough. We have learned over the past twenty years that, all too often, U.S. discoveries of basic knowledge were better exploited by other countries that were better able to develop applicable technologies and transform them into competitive products and services. The marketplace alone will not invest sufficient resources into mid-and longer-term broad-based technology development needed by the private sector to fully exploit basic knowledge. Our industry-led technology development partnerships are an important link between basic science and private sector commercialization. We should continue to expand these efforts, not abandon them.

Although it is an oversimplification, we can think of basic research as providing the basis for commercial products a decade from now. Industry R&D focuses on short-term product delivery, often no more than 18 months hence. In between are needed efforts to move fundamental knowledge into technologies that industries can turn into new processes and products. In addition, a strong technology base often feeds back into scientific inquiry in a way that leads to fundamental advances in our understanding. Science and technology support one another. The importance of the technology development activities has not been lost on our international competitors.

Consider the R&D expenditures of our major trading partners, which are illustrated in chart 3 (attached). As a percentage of GDP, we lag behind Japan and Germany, and are roughly on par with France and the United Kingdom. And, over the past decade, average annual growth of R&D investment has been

increasing by more than 7.5 percent per year in Japan, while our growth rate has been flat. Our trade balance for high-tech manufactured goods -- so important to our long-term economic stability -- has steadily eroded over the past 15 years and been negative for nearly a decade.

As I have said before, today we are clearly doing better as a nation. But we must not let America's recent strong economic performance mask long-term structural problems. It has been cost-cutting reductions in waste and inefficiency, -- not long-term investments -- that have sustained our current economic revitalization. We have cut the fat. Now we have to build the muscle.

Today, we are moving down the long-term path to meet the competition. And, as explained below, we are doing it through our own industry-led partnerships. We should not abandon them.

Like any portfolio, the mix of R&D activities must reflect a balance between long-term and short-term goals. Good research and development is like a fruit tree; it must be planted years before it can be harvested. Thus, although the private sector does a good job of planting short-term crops, there is insufficient incentive in the marketplace to engage in the development of long-term, higher risk enabling technologies.

The majority of the R&D in which American businesses invest offers strong promises of quick return -- in other words, less risky, product-oriented and bottom-line effective projects applauded by the Chief Operating Officer. Good for business in the short term, but lacking the long-range scope of high-risk but high-payoff technologies that American business must develop to be competitive in the future.

Third, we must examine the extent to which technology, once developed, is actually available to those who can build our nation's economic strength. This goal, of bringing technology to users who can make it work for our country, is as American as the agricultural extension service, perhaps the most successful governmental technology program in our history. Today, that goal is being served through our Manufacturing Extension Partnership, which brings to our nation's small- and medium-sized manufacturers access to information

resources, and expertise on modern manufacturing technologies and production processes which they need to remain competitive.

Some have argued that more generalized incentives for research and development -- such as R&E tax credits -- are more effective than the Advanced Technology Program (ATP) at encouraging private sector research. I want to emphasize once again that there is no one policy or program that ensures competitive success. The R&E tax credit is an important tool for encouraging greater private sector investment in research and development. That is why the Clinton Administration supports extension of the R&E tax credit. However, the R&E tax credit does not differentiate between investments directed toward short-term product delivery and longer term, higher risk investments that will yield products fifteen or twenty years into the future.

Clearly, we need both of these tools as part of our pro-innovation strategy.

Our national capability to engage successfully in international competition is dependent upon our national technological prowess. Where government should get out of the way, we will. Where government should work in partnership with the private sector, we must do so. Any other course would forego a critical element of national competitiveness.

### **III. Partnering the Growth of Civilian Technology**

To meet the challenges that I have outlined, this Administration is committed to providing Americans with the tools they need to meet both the challenges of global competition and the need for constant innovation. Our role is to provide an environment which empowers our workers and businesses and communities to embrace change -- with a government that works with them. Just as we provided the traditional tools for success in agrarian and industrial times -- including public education and the basic infrastructure of commerce from the Erie Canal to the national highways systems of this century -- now we must empower Americans with the tools to succeed in a global, high-technology, information-dominated society.

The Department of Commerce's focus on civilian technology has three basic components, each designed to enhance the technological capabilities of American industry. We emphasize:

- Supporting industry-led technology partnerships,
- Facilitating the rapid deployment and commercialization of civilian technologies, and
- Facilitating a technology infrastructure for the 21st Century.

Mr. Chairman, appended to my testimony is a short description of each of our Department's science and technology activities. For purposes of this testimony, however, I would like simply to describe each of the basic components of our policy.

#### A. Supporting Industry-led Technology Partnerships

Mr. Chairman, I have already described the basic rationale of our Advanced Technology Program -- to address the market gap in our mid- and long-term R&D portfolio which threatens to make us less competitive as we approach the 21st century and beyond.

Governmental action to redress market defects that threaten national prosperity is scarcely novel. For example, the laws establishing intellectual property rights are designed, in a similar manner, to correct market imperfections by establishing rules of conduct that must be obeyed. In the international context, we are working hard to have rules of conduct uniformly adopted.

The ATP program is a carefully-targeted remedy for the problem our nation faces. By sharing the costs of research, it reduces the risk for private businesses, thus allowing them to conduct research and development that might otherwise not be conducted at all -- a wise investment for our nation as a whole. Through a rigorous, merit-based review, the ATP program ensures that funded research has both technological and commercial potential. And, with a bottom-up, private sector approach, the ATP program maintains private-sector

priorities, not government fiat, as the driving force for technological achievement and focus.

Because of the risk involved, some projects will fail. Others may proceed faster than anticipated. But let me make this clear: it is the company that picks up the cost of product development, not the ATP.

The strength of the ATP -- and the reason that it is a solid and successful part of the nation's technology portfolio -- is that the program is a true partnership with industry. While government provides the catalyst -- and in many cases, critical technical support -- industry conceives, cost-shares, manages and executes ATP projects. Management of projects is geared to ensure that the work performed is what industry believes should be done and is what it can do best.

The ATP relies on the substantial involvement of industry to define and implement its R&D programs. ATP research directions are selected based on direct input from industry and developed in consultation with industry. Specific R&D projects are selected from proposals developed and submitted by industry in response to announced competitions.

The ATP emphasizes cost sharing -- ATP recipients on average pay more than half the total costs of the R&D. This ensures that companies have a vested interest in the success of projects and in timely commercialization, and that they will engage in the R&D only because it makes sense as a matter of commercial policy. At the same time, participation by small companies and start-ups is made easier by allowing the single applicant's cost share to be its indirect costs, which are usually low. The first four years of the ATP have shown small businesses to be eager participants. As chart 4 (attached) shows, of the awards made since 1990, roughly half have been to individual small businesses or joint ventures led by small businesses.

Thanks to strong support from its industrial partners, the ATP already has documented a number of success stories in its short lifetime.

Let me illustrate a couple of key features of the Advanced Technology Program with an actual project. In 1992 we announced an award of just under \$2 million to a small, California company called Accuwave. The company was

formed to exploit an intriguing new technology; they use laser holography to "write" very high-resolution optical elements such as filters in the interior of special crystals. They proposed to try to use this technology to build special optical elements for mixing and separating individual beams of light such as those carried on long-distance fiber-optic cables. If it works, the Accuwave technology will allow existing fiber-optic cables to carry as many as ten times the current number of channels. The impact on the telecommunications industry could be enormous.

So let's consider this project. Can a small entrepreneurial company benefit from the ATP? Mr. Chairman, when Accuwave submitted its proposal, the company was only two years old. It succeeded in a rigorous competition that funded only about 15 percent of applicants that year, and it succeeded on the strengths of its technology and its plan for eventually commercializing the work.

Are we spending tax dollars on product development? Mr. Chairman, I can't say this too many times: the ATP does not pay for product development. We work in areas where there are important, chancy technical issues that must be resolved before a company can even think about product development. Accuwave, for example, did its early work in developing special filters for solar astronomy. Applying its technology to optical communications requires, for one thing, that Accuwave work in a whole new part of the spectrum, and meet a number of system integration challenges new to it. That's the ATP project.

Are we substituting tax dollars for private capital? Mr. Chairman, there was no private capital for this. Accuwave was a small, new firm with ten people and no track record in the huge, highly competitive telecommunications industry. It didn't have the in-house resources to do the project, and without the ATP it wouldn't have had external funding either — the risks were just too high.

On the other hand, with the ATP, Accuwave has already made important progress. I hold in my hand a device called a "wavelength locker". Its purpose is to stabilize and control the wavelength of a communications laser and improve network performance. This little module, designed for easy use

on a circuit board, replaces a tabletop full of optical equipment. It's based on ATP-sponsored research.

It's unique in the field. It could be the forerunner of a whole family of new, world-class products in a field with huge commercial potential. It is a technology that would not be entering the market now without the assistance of the ATP to overcome the early technical hurdles.

That is what the Advanced Technology Program is about.

From its start, the ATP has emphasized detailed program evaluation as critical to an effective, results-oriented program. The evaluation plan for the ATP calls for metrics for process efficiency, short-to-medium term results, and long-run economic impact, and the ATP is actively pursuing each. Recognizing that a major obstacle to comprehensive, accurate measurement metrics typically is the lack of good data, the ATP has put in place an extensive data collection system. Because assessing the long-run national benefits of technological change is challenging, the ATP has engaged the advice and services of some of the nation's leading experts in the economics of innovation. It has completed several studies of short-to-medium term results and has several experimental studies underway to project longer-term impacts. It is putting in place the data and evaluation tools that it will need to measure real long-run program payoffs in U.S. economic growth and jobs as soon as sufficient time has passed to make this possible.

And, early results indicate that the ATP is successfully improving the capability of the nation's businesses to capture economic returns from scientific and technological innovations. Two independent studies of projects funded in FY 1991 revealed substantial, early beneficial impacts on participating companies, including expanded R&D activity, particularly the ability to engage in high-risk, long-term research with high-payoff potential; cost and time savings, improved productivity, and other benefits from industry-industry, industry-government, and industry-university collaborations; improved competitive standing; formation of valuable strategic business alliances; improved ability to attract investors; assistance in converting from defense to commercial applications; and acceleration of technology development, leading to improved market share.

This is how the ATP fulfills an industry need that no other government or private-sector program can fill. By funding enabling technologies that most investors consider too risky, the ATP provides U.S. businesses with a bridge from today's innovative promises to tomorrow's breakthrough products and processes.

When I came into office, I said that if John Major or Francois Mitterand could travel around the world advocating on behalf of their nation's products, we could as well. And we have done just that. Here, too, why should we stand by and watch other nations prepare themselves for the future -- making their nations more attractive to the pursuit of long-term technologies, with the attendant economic benefits that brings, while we stand by inactively? We should not. Scaling back Federal investment in long-term, high-risk technology R&D is tantamount to unilateral disarmament in a fiercely competitive world marketplace.

#### B. Facilitating the Rapid Deployment of Civilian Technologies

Stimulating the development of innovative technologies is one-half of the equation. The other half -- getting new and existing products to market in a timely, cost-effective competitive basis -- is also critical if U.S. firms are to succeed in the global marketplace.

As part of those efforts, the Administration fully recognizes the fundamental role that our 370,000 small- and medium-sized manufacturers play. These firms are the source of two-thirds of our manufacturing jobs, account for 75 percent of new manufacturing jobs, and contribute more than half the value-added in manufacturing in the United States.

These facts advocate for expansion of the Manufacturing Extension Partnership (MEP) -- and for the potential that this program has to make a difference. The success of the agricultural extension service over the last 100 years in building an agricultural industry that is the envy of the world -- is a strong precedent for the MEP.

Today, as illustrated in chart 5 (attached), there are 44 extension centers already operating or soon to be operating in 32 states. By achieving the President's goal -- to establish a nationwide network -- the nation's 370,000

small- and medium-sized manufacturers will have easy access to modern manufacturing technologies, production techniques and best practices through the MEP national system.

The network of manufacturing extension centers is growing because the centers are industry-driven, responsive, and focused on positive bottom-line impacts. Each center tailors its services to meet the needs of manufacturers in its region. And it is the centers' customers who indicate the impact those services have on their firms' performance -- in terms of sales, capital spending, inventory costs, productivity, and other bottom-line factors. The results are staggering. A recent analysis found that the economic benefits to client firms -- in terms of enhanced responsiveness to customer demands, reduced waste and inventory, and increased sales -- resulting from assistance from a center exceed the Government's cost at a rate of seven to one.

Manufacturing extension services are supported by governors, mayors, and CEOs because they understand the unique barriers facing small- and medium-sized manufacturers and the need for making appropriate technology, information and resources more accessible to them. Historical experience indicates that smaller manufacturers cannot easily overcome these barriers without external assistance. Furthermore, the extension services provide essential customization of new technologies and process applications adapted to firm-specific operating environments. They also understand the prospective payoff of such services -- and the prospective losses, if these companies do not make the changes needed to remain competitive.

### C. Facilitating a Technological Infrastructure for the 21st Century

For nearly a century, the primary responsibility for the constitutional mandates to "fix weights and measures" has fallen on the research laboratories of the National Institute of Standards and Technology, the only federal laboratory specifically commissioned to work with U.S. industry toward improving U.S. competitiveness. The laboratory research program at NIST is a crucial component in this Administration's strategy for competing successfully in the critical industries of the 21st century. Infrastructural technologies such as measurement methods, fundamental standards, materials property data, testing techniques, and advanced instrumentation provide manufacturers with the essential tools to continuously improve both their products and processes.

NIST infrastructural technologies also speed market acceptance of advanced technologies by providing buyers and sellers with objective and technically sound methods with which to agree upon and assure product characteristics and performance. In order for U.S. industry to be able to implement changes necessary to remain competitive in the global marketplace, these basic tools require constant improvement. Without this continued development, U.S. firms in many emerging high-technology fields -- such as biotechnology, optical electronics, advanced manufacturing and materials, and high-performance computing and communications -- will lack the underlying measurement technologies and standards necessary to make quality products for future global competition.

NOAA is an integral part of the Department's technology R&D portfolio. NOAA's science has played an important role in U.S. strides in achieving improvements in environmental quality, managing natural resources more wisely, and understanding and predicting the behavior of earth systems so as to ensure sustainable economic opportunities. NOAA's scientific research supports its two missions -- environmental assessment and prediction, and environmental stewardship.

NOAA assesses and predicts environmental changes on different time scales. NOAA improves its short term weather forecasts through research into basic hydrometeorological processes and through the development of new observational technologies, such as doppler radar. Future improvements in forecasts and warning services will continue to enhance U.S. capabilities to mitigate adverse environmental conditions impacting safety and productivity, from managing evacuations during hurricanes to routing airplanes efficiently.

NOAA's research into the El Nino-Southern Oscillation phenomenon has led to the development of experimental seasonal climate forecasts. By the year 2015, NOAA should have the capability to produce multiseason forecasts of precipitation with accuracies approaching those of current short-term forecasts.

Long-term changes in the global environment may alter the capacity of the Earth to sustain life. NOAA's research involves documenting and understanding these changes, leading to the development of models for their prediction. NOAA's basic research into atmospheric chemistry has led to immediate solutions for mitigating ozone depletion in the Earth's atmosphere.

NOAA research on climate change will provide the basis for forecasts of decadal and longer changes with predictions of sufficient scientific credibility to support decisions.

NOAA's second major mission is stewardship of the coastal environment. NOAA's stewardship responsibilities include building sustainable fisheries, recovering protected marine species, maintaining healthy coastal ecosystems, and providing navigation and positioning services. NOAA is conducting and integrating the results of research efforts in multiple fields to better manage its responsibilities in these areas.

These efforts include improving fishery stock assessments using new technologies, such as hydroacoustics; and conducting habitat and marine biodiversity studies which will aid in recovering a number of protected marine species, such as the salmon in the Pacific Northwest. As coastal populations grow rapidly, NOAA is providing information for management decisions designed to promote sustainable economic growth in coastal regions, and to restore and conserve coastal ecosystems.

NOAA will meet national needs for improving navigation and positioning services. By exploiting emerging technologies, such as the Global Positioning System, NOAA will produce and integrate data, based on satellite geodetic positioning, and will improve a number of data products for clients who can utilize this real-time environmental information.

In addition to NIST's and NOAA's infrastructure work, the development of the National Information Infrastructure (NII) and its counterpart, the Global Information Infrastructure (GII), is a top priority. These initiatives will promote a stronger economy, more competitive businesses, more effective government, and better educational and technological leadership. The private sector is constructing the NII and GII. The Federal government is acting as a catalyst to promote its development and to ensure that the initiatives are accessible and affordable to all Americans. The Administration's NII and GII initiatives seek to ensure that all Americans can take advantage of the opportunities brought by the advanced information technologies and services -- a market that approaches 10 percent of our domestic economy.

The Commerce Department is focusing on a number of goals, chief among them are privatization and liberalization of markets, open standards, protection of intellectual property rights, regulatory flexibility, technology policy analysis and advocacy, and stimulating innovative applications. As a means of facilitating the private sector's development and use of NII applications to advance the public good, the Administration is funding NII demonstration projects such as telemedicine and distance learning. Last year the Commerce Department made its first competitive awards under the Telecommunications Information Infrastructure Assistance Program (TIAP). The program is providing matching funds to state and local governments, nonprofit health care providers, school districts, libraries, universities, public safety services, and other non-profit entities in 44 states, the District of Columbia and the Virgin Islands. The TIAP will help demonstrate to Americans at the local level the advantages of having access to modern, interactive information infrastructure.

I firmly believe that if you look:

- o at what our policies and programs are striving to accomplish,
- o at how they are being driven by private sector needs and by their contribution to reaching our society's goals, and
- o at the results that we are beginning to deliver,

you will come to the conclusion -- and agree -- that these efforts are making a real contribution.

#### **IV. Conclusion -- The Role of the Department of Commerce**

I would be remiss, Mr. Chairman, if I concluded without discussing another implication of the new economic challenges our nation faces.

In an era of re-inventing government, some have questioned the nature of the activities housed in, or even the existence itself, of the Department of Commerce. Such criticism usually focuses on the differences between the activities that I oversee: fisheries management and manufacturing centers; export promotion and control, and domestic economic development; the Census

Bureau and minority business enterprise; and weather forecasting and economic statistics.

To emphasize the differences is, however, to miss the point. If my testimony today has emphasized anything it is this: We live in an increasingly competitive global economy in which all aspects of economic competitiveness are integrally connected. Trade policy opens opportunities for high-technology companies. Technological proficiency is a key ingredient to economic development in the United States. Economic development will often turn on our ability to sustain environmental resources and provide a predictive capability for environmental change. Measuring and monitoring resources is an important part of the economic information that we collect and the economic analyses that we perform.

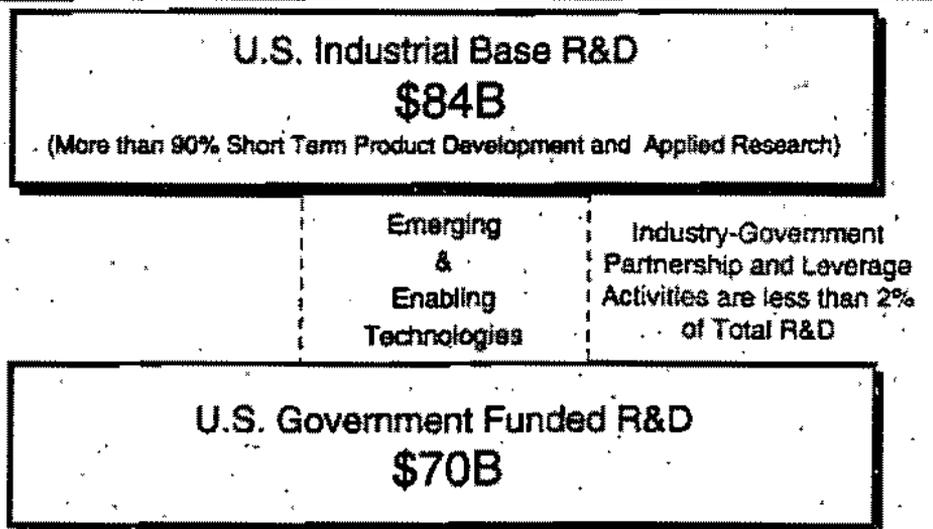
The Department of Commerce is where these connections are made. We focus on economic growth and competitiveness and, within our ten bureaus, we work, in a myriad of ways, toward the complementary goals of economic growth, job creation, an increasing standard of living, and environmental protection. And we work better, in every respect, because we are, every day, confronted with the intersection of trade promotion, civilian technology, economic development, sustainable development and economic analysis.

That intersection is where the future of the United States economy is being fashioned, every day, by entrepreneurs who forge our future one deal, one contract and one transaction at a time. My Department works with them every day, to our mutual -- and our future -- benefit.

Thank you.

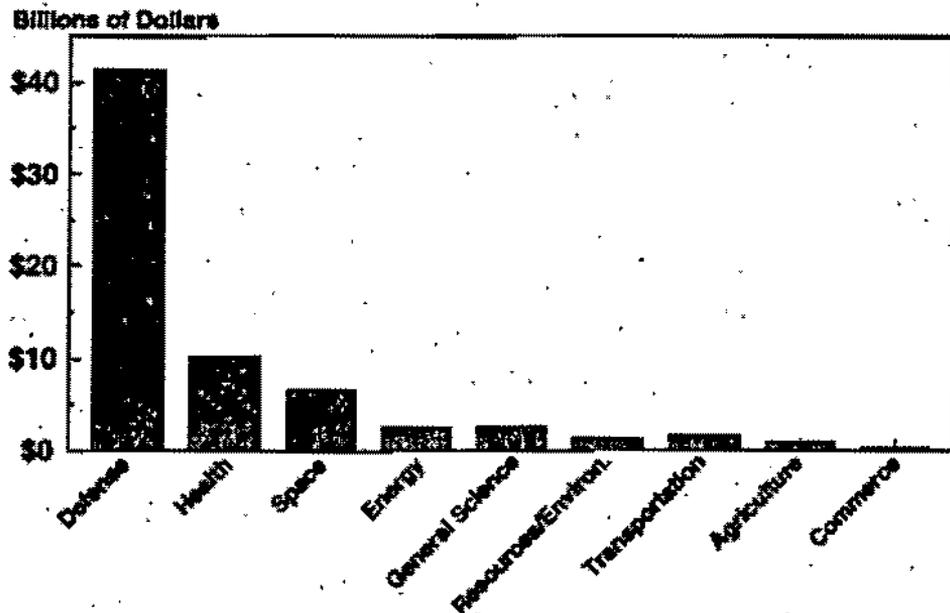
**CHART 1**

**Enabling the Nation's Capacity to Perform in a Global Community**



**CHART 2**

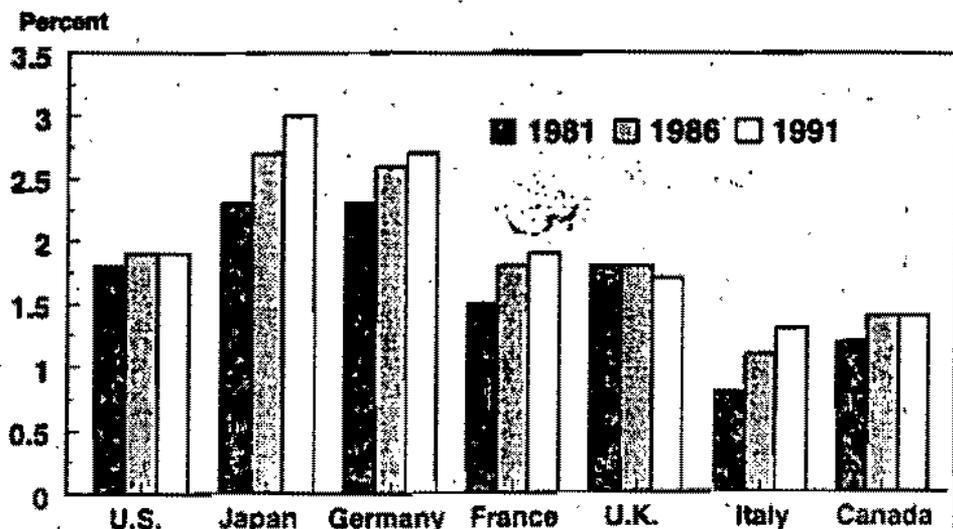
**Federal R&D Funding for Defense & Civilian Functions, 1993**



Source: NSF "Federal R&D Funding by Budget Function: FY 1991-93" and unpublished NSF data.

**CHART 3**

**National Nondefense R&D as a Percentage of GDP, by Country, 1981, 1986, 1991**



Source: NSF S&E Indicators-1993

CHART 4

# ATP Awards 1990-1994 By Type of Organization

Awardees include 158 small businesses, 221 med/large businesses, and 32 universities. 100 subcontracts have also gone to universities.

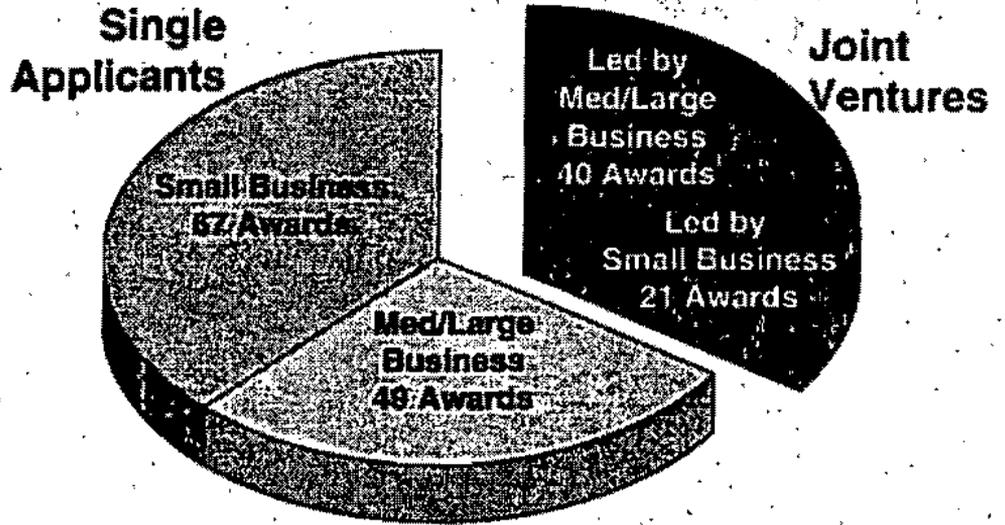
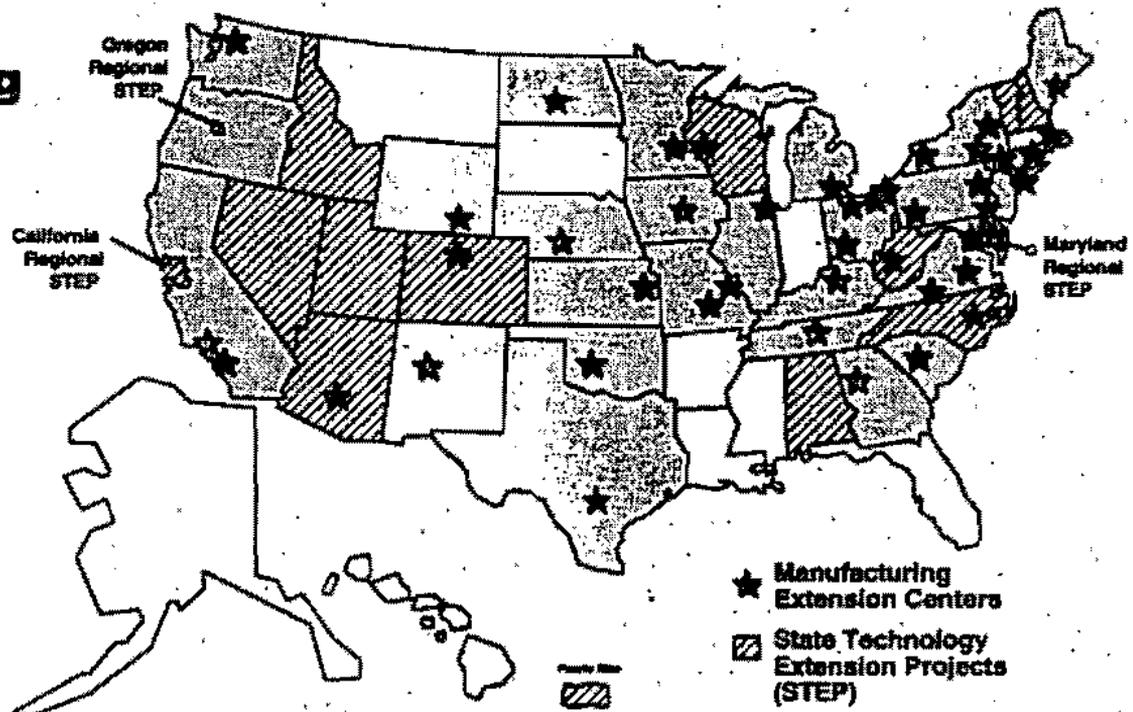


CHART 5

# NIST Manufacturing Extension Partnership



THE DEPARTMENT OF COMMERCE  
SCIENCE AND TECHNOLOGY ACTIVITIES

THE NATIONAL OCEANIC AND  
ATMOSPHERIC ADMINISTRATION

Introduction.

The National Oceanic and Atmospheric Administration (NOAA) has set forth a vision for the year 2005 of a world in which societal and economic decisions are coupled strongly with a comprehensive understanding of the environment. NOAA's mission is to describe and predict changes in the Earth's environment, and conserve and manage wisely the Nation's coastal and marine resources to ensure sustainable economic opportunities.

Over the past 25 years, the U.S. has made important strides in improving environmental quality, managing natural resources more wisely, and understanding and predicting the behavior of Earth systems. NOAA sciences and services have played an important role in this evolution. As we approach the 21st century, we face continuing and complex environmental challenges. In the next twenty years, investments in science and technology will revolutionize these national services, with returns on investment through economic growth and improvements in the quality of life.

NOAA's Strategic Plan.

NOAA's Strategic Plan for 1995-2005 defines the goals necessary to fulfill our vision. The plan transcends internal organizations, and promotes synergy, innovation, cooperation and efficiency. The program strategy consists of seven inter-related goals. The seven goals are grouped under our two primary missions of Environmental Assessment and Prediction and Environmental Stewardship. Achievement of our goals depends strongly on NOAA's capabilities as a national resource for environmental research, observational systems, and data and information systems.

Environmental Assessment and Prediction

*Advance Short-Term Warning and Forecast Services:* Our dynamic environment presents extraordinary challenges for protecting life and property. NOAA is improving its short-term forecast and warning products by enhancing abilities to observe, understand, and model the environment, and by effectively disseminating products to users. NOAA research contributes to this goal through advancing basic hydrometeorological understanding and the development of new observational technologies. Significantly improved short-term forecast and

warning services will be implemented for the global environment that will enhance capabilities to mitigate adverse environmental conditions impacting safety and productivity.

*Implement Seasonal to Interannual Forecasts.* This month, the National Meteorological Center will begin issuing experimental seasonal climate forecasts for the contiguous U.S. and Alaska. This capacity is the direct result of research performed over the last decade on the El Nino-Southern Oscillation, or ENSO, phenomenon, and of key new observing capabilities. Seasonal forecasts will lead to immediate benefits, especially in the agriculture and water resource management sectors. The terrible flood of 1993, and the loss of returning salmon in the Northwest, have been connected to El Nino events. By the year 2015, we should have the capability to produce multiseason forecasts of precipitation with accuracies approaching those of current short-term forecasts.

*Predict and Assess Decadal to Centennial Change.* Long-term changes in the global environment may alter the capacity of the Earth to sustain life. Prediction and assessment on decadal-to-centennial time scales will require: improved process understanding; operational observations of global changes; and improved global models providing predictions. NOAA research on ozone chemistry is having immediate payoffs for industry and is providing input to international assessments. NOAA research on climate change will provide the basis for forecasts of decadal and longer changes with predictions of sufficient scientific credibility to support action.

#### Environmental Stewardship

*Build Sustainable Fisheries.* NOAA is implementing programs to restore the wealth of U.S. fisheries. Current investments in biotechnology, sampling technology, and ecosystem dynamics research will make a significant difference in how NOAA addresses this rebuilding. Better understanding and knowledge leads to sustainable fisheries and enhanced economic opportunity for the country.

*Recover Protected Species.* NOAA must protect and plan for the restoration of marine species threatened with extinction. Principal research paths include improving stock assessment methodologies and genetic approaches to stock identification. The goal is to recover protected species in danger of extinction in a manner compatible with sustainable use of marine resources.

*Coastal Ecosystems Health.* As coastal populations grow rapidly, NOAA is providing the research, monitoring, assessments, predictions and guidance for management decisions designed to promote sustainable economic growth in coastal regions; and, to restore and conserve coastal ecosystems. NOAA's coastal research

efforts build on existing strengths in coastal water quality, habitat and marine biodiversity. Improved environmental indicators and integrated coastal management will, for the year-2015, support an ecosystem-wide approach toward coastal ecosystem health and prosperity.

*Modernize Navigation and Positioning Services.* NOAA is exploiting emerging technologies and redefining its products and services to meet the Nation's need to produce and integrate chart data, satellite-based geodetic positioning, and real-time environmental information. NOAA will supply, in the 21st century, improved positioning services to ensure the safety of life, property and the environment, while supporting economic growth.

#### National Capabilities.

Along with research, NOAA must continue to invest in its capabilities as a national resource for observational systems and environmental data and information services. We must seek to implement an integrated global observing capability, while ensuring that data are processed, analyzed, and distributed in a timely fashion.

### THE TECHNOLOGY ADMINISTRATION (INCLUDING NIST)

#### The Office of Technology Policy

The purpose of the Office of Technology Policy is to improve U.S. industry competitiveness. It fulfills its mission by advocating policies which empower the private sector to compete, and implementing and managing Congressionally mandated programs that increase U.S. companies access to the best foreign science and technology. OTP also serves as a technology policy think tank.

Through extensive interaction with the private sector, and an "industry as customer" focus, OTP has determined that a comprehensive policy approach to US competitiveness is essential. Such an approach must address the broad range of factors that impact the ability of companies to develop technology, turn it into products and services, and bring them to the global marketplace.

OTP, in partnership with private-sector leadership, is evaluating and promoting policies that promote competitiveness and economic growth. This includes efforts to:

I. Improve the business climate for private-sector innovation and investment.

II. Improve the efficiency and effectiveness of Federal civilian technology efforts to maximize their impact on competitiveness, economic growth, and job creation. The focus is "industry as customer."

OTP is striving to become a "first stop" for the private sector in its efforts to work with the federal government on issues affecting industrial competitiveness. Its attention has been focused on orchestrating efforts across the federal government or acting as a catalyst and facilitator for industry action.

#### Business Climate Initiative.

The Business Climate Initiative seeks to promote the enhancement of the overall climate for technological innovation by identifying, exploring, and advocating policy reforms. Starting by listening to the concerns and recommendations of private industry, this initiative provides a forum and a vehicle for constructive consensus-building around a variety of changes -- regulatory, capital formation, and other policy areas -- in order to improve U.S. industrial competitiveness. Whether through immediate administrative modifications or more structural statutory and regulatory reforms, the Business Climate Initiative will give credibility and coherence to the federal government's efforts to improve the U.S. business environment on the basis of industry's priorities.

#### International Policy Projects.

OTP is working to ensure that U.S. firms have access to the foreign science and technology programs that will strengthen their ability to compete in today's global markets. It does this through the identification, gathering, and dissemination of valuable but not easily available science and technology information -- such as that on developments in Japan -- and by helping place U.S. engineers in Japanese manufacturing companies for extended periods of time under the Manufacturing Technology Program. OTP is also responsible for the development of new forms of international collaborative scientific and technological activities that will enable U.S. firms to benefit from the expertise available in other countries. Collaborative agreements include the Intelligent Manufacturing Systems Program and the U.S.-Israel Science and Technology Commission, as well as programs that support foreign policy initiatives such as those with Northern Ireland and Egypt.

#### Manufacturing Assessment Study.

OTP is assessing the health of the nation's manufacturing base. This assessment is intended to provide insight on the make up and geographic distribution of manufacturing firms in the U.S. This work is being conducted with the Center of Economic Studies

within the Census Bureau to compile statistics derived from the Census of Manufacturers. Input from individual industry trade associations and state and regional manufacturing assistance organizations also has been collected. The report will be released in the first quarter of 1995.

#### Benchmarking Industrial Competitiveness.

At the firm level, the practice of "benchmarking" one's operations against those of competitors is a well-established means of assessing and improving competitiveness. At the industry level, a number of industry associations and university research centers around the country have undertaken the task of benchmarking "competitiveness" that is, an industry's ability to sell at a profit its goods and services under free and fair market conditions, worldwide.

One objective of this OTP initiative is to expose a broader cross section of industry to the potential benefits of conducting benchmarking exercises. Another is to identify potential government information sources for such exercises and where appropriate, improve the types of information provided by government to the private sector for this purpose. Finally, our staff is examining on an industry-by-industry basis, the relationship between regulatory, tax, trade, and technology policies, as a direct response to concerns voiced by industry over the seemingly ad hoc and sometimes contradictory nature of government policies.

Efforts are currently underway in twelve sectors to prepare initial competitiveness benchmarking reports. These efforts are all characterized by cooperation between government, industry and academia, and involve more than 100 of the country's leading experts in matters of industrial competitiveness. The draft reports will be reviewed by panels of industry and academic experts, beginning in the spring of 1995, and will be issued in final form by the end of the year.

#### Federal Partnerships Project.

It has been almost fifteen years since the Federal government first began addressing issues of competitiveness through public private partnerships. OTP is evaluating the effectiveness of these various partnership models and developing metrics of success for these programs. Once again, the report will be founded on the experiences of the private sector in working with the various programs, drawn from roundtables with the private sector companies and industry associations. The report will present profiles of the programs, their funding, constituencies, key features, and key issues.

## The National Institute of Standards and Technology

NIST's primary mission is to promote U.S. economic growth by working with industry to develop and apply technology, measurements, and standards -- providing the basic technical infrastructure needed by U.S. industry. Both small and large companies are assisted by NIST. NIST's priorities are set and results are measured on the basis of benefits realized by the U.S. economy.

NIST's appropriation of \$855M in FY95 -- the only portion of the federal budget explicitly devoted to enhancing industry's critical technology infrastructure needs -- is just over one percent of federal R&D and less than one-half of one percent of the nation's total R&D expenditures.

NIST carries out its mission through a portfolio of four major programs which are described below.

### NIST Laboratory Programs.

For nearly a century, researchers at NIST laboratories have supported the growth and competitiveness of U.S. industry by providing high-quality, science based measurement and standards research and services. The NIST laboratories serve the needs of large and small companies and individuals from virtually all sectors of the economy. Laboratory efforts are planned and conducted in cooperation with industry and focus on infrastructural technologies such as measurements, standards, evaluated data, and test methods which provide a common basis for science, technology, and commerce.

NIST provides vital elements of the measurement and technical infrastructure which makes possible much of the development, production, distribution, and sales of manufactured products. NIST laboratories support the U.S. economy in three critical ways:

- I. By providing measurement technologies, evaluated data, materials characterizations, and test methods, NIST furnishes industry with an organized, verified technical infrastructure which firms depend upon to predict, perform, measure, and analyze ever more complex and technical activities in a rigorous, effective, and timely manner.
- II. NIST labs work with industry to develop and maintain technologies and services - from advanced process and quality control measurements, to improved test and measurement methods, to national reference standards and calibration services - that enhance U.S. industry's ability to provide high quality, competitive products and services.

III. By working with industry as a non-regulatory, unbiased third-party to develop technical underpinnings for standards, establish conformance tests, and facilitate the private-sector voluntary standards process, NIST accelerates market development and increases the efficiency of market transactions by promoting improved communication, consistency, and trust among technology buyers and sellers.

The benefits from this work are spread across many companies and industries. Industry traditionally under-invests in development of these infrastructural technologies because they are used simultaneously by many firms and typically are not embodied in products, making it difficult or impossible for individual firms/industries to recover the R&D investments.

The NIST research programs are carried out in eight major Laboratories, with specialized products and services offered through a Technology Services unit.

The **Electronics and Electrical Engineering Laboratory (EEL)** provides the fundamental basis for all electrical measurements in the U.S. In consultation with industry, researchers tailor programs to meet the most critical measurement needs in the manufacture of semiconductor, magnetic, RF, microwave, optical, optoelectronic, and superconducting products, as well as electrical power systems. These researchers develop improvements in quality control and cost effectiveness for both current and next-generation semiconductors; produce methods that help increase the efficiency of optical fiber networks; and operate specialized computer facilities to develop new standards and performance measures for flat-panel displays and high-definition television systems.

The **Manufacturing Engineering Laboratory (MEL)** has primary responsibility for maintaining the national standards for dimensional metrology. Researchers in MEL are helping to develop many of the tools for automated intelligent-processing systems that will soon be the core of all world-class manufacturing operations. These components include intelligent machines; advanced sensors for real-time in-process measurements; software for precision control of machine tools; and information technology for integrating all elements of a product's life cycle, from planning and design through marketing and customer support. MEL also provides technical support for industry groups that develop standards for measurements, measurement techniques, hardware, software, and data interfaces.

The **Chemical Science and Technology Laboratory (CSTL)** maintains the national system of chemical measurement and coordinates the system with those of other nations. CSTL also develops the calibration and measurement standards for a wide range of instruments and processes important to the chemical-

manufacturing, energy, health-care, biotechnology, food-processing, and materials-processing industries.

The **Physics Laboratory (PL)** attends to the long-term needs of many U.S. high-technology industries. PL conducts basic research in the areas of quantum, electron, optical, atomic, molecular, and radiation physics. This research includes, for example, efforts to improve the accuracy and precision of time and frequency standards. Much of the laboratory's research is devoted to overcoming the measurement barriers to the next technological revolution, in which individual atoms and molecules will serve as the fundamental building blocks of electronic and optical devices.

Programs in the **Materials Science and Engineering Laboratory (MSEL)** cover the full range of materials issues, from design, to processing, to performance. The unifying aim is to acquire the knowledge and tools needed for intelligent manufacturing methods with real-time, automated process controls. Special research initiatives address ceramics, metals, polymers, composites, and superconductors. This research supports efforts by U.S. industry to develop reliable, low-cost manufacturing methods for producing tailor-made materials and products with superior properties.

The major goals of the **Building and Fire Research Laboratory (BFRL)** are to improve the productivity of the U.S. construction industry. Through performance prediction and measurement technologies, as well as technical advances, the laboratory works to improve the life-cycle quality of constructed facilities. The laboratory studies building materials; computer-integrated construction practices; structural, mechanical, and environmental engineering; and fire science and fire safety engineering. Products of the laboratory's research include measurements and test methods, performance criteria, and technical data that are incorporated into building and fire standards and codes.

The **Computer Systems Laboratory (CSL)** benefits both users and manufacturers of computer and telecommunications technology. Its research and testing programs foster the orderly development of an "open systems" environment intended to make all forms of information technology compatible and interoperable. For manufacturers of hardware and software, industry-wide adoption of standards expands marketing opportunities, and users are freed of the constraints and frustrations of incompatible proprietary systems. Much of CSL's work consists of advising and assisting industry in developing standards that satisfy user needs and yet accommodate innovations that differentiate the products of competing vendors.

The **Computing and Applied Mathematics Laboratory (CAML)** develops mathematical, statistical, and state-of-the-art scientific computing tools that help NIST researchers and their

collaborators in U.S. industry accomplish their research and measurement objectives. NIST mathematicians and statisticians also support U.S. industry through computer-aided modeling of complex manufacturing processes and statistical methods for improving the quality of products and processes. Other research programs focus on advanced computer graphics programs that produce two- and three-dimensional visualizations of complex problems; new methods for displaying, manipulating, analyzing, and transmitting large volumes of data; and software applications for harnessing the problem-solving power of parallel processors.

Through **Technology Services (TS)**, NIST provides a conduit to a wide variety of services and programs to help U.S. industry improve its international competitiveness, commercialize new technologies, and achieve total quality in all facets of business operations. Companies spanning all industrial sectors depend on the precision and reliability of NIST measurement services and products to keep their production processing smoothly, efficiently, and safely. NIST reference materials, data, and calibrations help industry maintain quality control in the production of everything from aerospace alloys, to voltmeters, to breakfast cereals. Responding to increased emphasis on quality standards in international markets, NIST provides information and assistance to about 20,000 organizations and individuals every year concerning national and international voluntary and regulatory product standards and certification systems.

**Setting Priorities.** NIST programs are guided by measurement and evaluation systems which are used to set priorities, evaluate operational performance, and assess near- and long-term returns on investments and activities. Priorities are set, and results measured, on the basis of benefits realized by U.S. industry. Priorities in NIST's laboratory are set in consultation with industry and in accordance with several guiding criteria including the magnitude and immediacy of industrial need; the degree of correspondence between particular industrial need and NIST's mission to develop and support infrastructural technologies; opportunity for NIST participation to make a major difference; nature and size of the anticipated impact; NIST's capability to respond in a timely fashion and with a high-quality solution; and the nature of opportunities afforded by recent advances in science and technology.

**Measuring Results.** NIST laboratories use a variety of measures to track and evaluate performance, including the value and utility of research deliverables and services. Customer feedback, gathered through many mechanisms, is the principal source of evaluative information. NIST's primary "deliverables" - measurements, standards, evaluated data, process models, etc. - are made widely available to U.S. industry, usually in the form of technical information or publications. Measures of the relevance and value of this information include

industry attendance and level of participation at NIST's technical workshops; commercialization of products incorporating results of NIST R&D; application of NIST R&D results to industrial processes; level of industry commitment to NIST projects and consortia; number of guest researchers from industry; and repeat customers.

Developing methods for measuring and quantifying the impact of tax payers' investment of resources in NIST's laboratories has very high priority. NIST has been at the forefront of efforts to develop methodologies for assessing the economic impact of laboratory research and has undertaken a series of assessments to determine the economic impact of selected laboratory programs and services. Using a method based on internal rate of return calculations used in industry, these impact studies, conducted by third parties, are used to assess the value of U.S. tax payers' investments in those programs. Since only measurable benefits are included, the studies provide conservative estimates of impact. Nevertheless, these studies indicate that the aggregate return from investment in NIST laboratory research programs is twice the return for private-sector innovations and ten times the average return on capital investment in the U.S.

*Areas of Increasing Emphasis.* In anticipation of an information revolution expected to rival industrial revolution in social impact, NIST is planning the establishment of a new Information Technology Laboratory whose mission is to develop and support measurement technologies, standards of interoperability, etc., in support of the National - and Global - Information Infrastructure.

A major component of the information revolution will be the continued evolution of semiconductor and magnetic storage devices. Existing technologies for production and characterization of these devices are approaching ultimate limits imposed by material properties and physical laws. NIST has established the National Semiconductor Metrology Program to address problems of fundamental metrology which must be solved in order for semiconductor industries to meet the demands of the 21st century.

As device miniaturization progresses toward 2015, we will soon need to build and characterize devices whose typical size is just a few atomic diameters. There currently are profound limitations to our ability to measure, fabricate, characterize, and understand atomic scale devices. NIST has begun a new nanotechnology initiative specifically to enhance our current capabilities to make and study nano-structured materials.

Because of very rapid advances in the field of biotechnology, the real industrial need for critical new measurements and standards is growing faster than are the underlying measurement

technologies. To provide the infrastructural support to enable these technologies to grow, we have initiated a program in Biotechnology.

As social pressures increase to monitor or mediate the long term effects resulting from increasing environmental stress of the growing human population, it is essential to provide substantially improved measurement technologies with sufficient sensitivity, accuracy, and reliability that definitive studies can be performed. Long-reaching policy decisions concerning use of precious resources must not be made on the basis of conflicting and inadequate experimental data. To address these crucial measurement needs, we have initiated a program in Environmental Technology.

#### Manufacturing Extension Partnership (MEP).

The MEP helps small and medium-sized companies succeed in the marketplace by helping them to improve their operations by adopting new technologies. These businesses typically lack the ability to absorb new manufacturing technologies straight from the lab into their operations.

There are more than 370,000 U.S. companies with fewer than 500 employees, accounting for about 95 percent of all U.S. manufacturing plants. These companies are assisted through MEP's growing nationwide network of affiliated manufacturing extension centers run by and built on local, state and non-profit groups that provide hands-on technical assistance to small manufacturers.

The MEP takes maximum advantage of programs already in place, avoiding duplication of efforts among existing technology assistance organizations; it concentrates on matching company needs to the best available help from the private sector, state, local or federal government, regardless of source. Company benefits from formal technical assistance from MEP extension centers totalled \$320 million between 1989 and 1992 - a return of over \$7 on each federal dollar invested.

#### Advanced Technology Program (ATP).

It is a rigorously competitive program which invests in cost-shared research by individual companies or industry-led joint ventures. The sole aim is to develop high-risk, potentially high-payoff enabling technologies that otherwise would not be pursued because of technical risks and other obstacles that discourage private investment. These obstacles to private-sector investment include high technical risk, prohibitive cost, long pay-back horizons, or anticipated returns not specific to individual firms or distinct industrial sectors. The ATP is market-oriented. While government provides the catalyst -- and

in many cases, critical technical support -- industry conceives, manages, and executes ATP projects. ATP support is strictly limited to pre-product development that is high risk, and ATP will not support any product development. Because of the risk involved, some projects will fail. Others may proceed faster than anticipated, and intermediate products may appear even before the project ends. But NIST only cost-shares on the R&D tasks. Whether the commercialization begins to take place before the ATP project ends or long after, the company must pay 100% for designing specific products incorporating the technology and any costs associated with commercialization.

Commercial firms know best how to commercialize a promising new technology. With this in mind, the ATP funds for-profit companies. Small, medium, and large companies, and joint ventures led by two or more companies, are eligible for direct funding. Successful ATP project sponsors range in size from start-up companies with a handful of employees to major industrial firms with international scope. Universities, federal laboratories, and non-profit independent research organizations participate in many ATP projects, but as subcontractors or as members of joint ventures (non-profit independent research organizations may administer joint ventures). The ATP has a comprehensive plan for monitoring and evaluating its performance.

ATP project goals are clear: they are expected to result in U.S. companies developing new product lines, hiring new employees, capturing more world market share, and prospering so that our economy grows faster, resulting in increased tax revenues.

#### NIST Quality Outreach Program.

By the 1980s, it was clear to many industry and government leaders that a renewed emphasis on quality was no longer an option for American companies but a necessity for doing business in an ever growing world market. As a result, the Malcolm Baldrige National Quality Award was established by Congress in 1987 to promote quality awareness, to recognize quality achievements of U.S. companies, and to publicize successful quality strategies. The award is not for specific products or services. Two awards may be given annually in each of three categories: manufacturing, service, and small business. In conjunction with the private sector, the National Institute of Standards and Technology developed and manages the award program.

Businesses located in the United States may apply for the award. Those that do must undergo a rigorous evaluation by an independent board of examiners composed of private- and public-sector experts in quality. The examination includes onsite visits for those passing an initial screening. Each applicant receives a written summary of strengths and areas for improvement in quality management.

Seven broad categories make up the criteria: leadership, information and analysis, strategic planning, human resource development and management, process management, business results, and customer focus and satisfaction. Applicants for the award must provide data to show quality achievement and quality improvement in each area.

A General Accounting Office report calls the award criteria "the most widely accepted formal definition of what constitutes a total quality management company." Almost 1 million copies of the criteria have been distributed. Thousands of organizations use the criteria as a quality improvement "road map." In addition, about 30 states have established—or will establish soon—state quality awards programs, most of which are modeled after the Baldrige Award.

While quality management cannot guarantee success, the Baldrige award winning companies and many others believe that investing in quality can lead to outstanding returns, both for individual companies and the country. According to a recent report by the Conference Board, a private business membership organization, "A majority of large U.S. firms have used the criteria of the Malcolm Baldrige National Quality Award for self-improvement, and the evidence suggests a long-term link between use of the Baldrige criteria and improved business performance."

## NATIONAL TECHNICAL INFORMATION SERVICE

### Introduction.

The National Technical Information Service (NTIS) is a self-funded government agency under the Department of Commerce. For nearly 50 years, all of our costs associated with collecting and disseminating the Nation's collection of scientific, technical, engineering and business information are paid for by the sale of our products and services.

NTIS offers customers a broad range of information in different formats that is available no place else. Over 200 U.S. government agencies contribute about 12,000 documents per month to the NTIS collection. NTIS currently holds over 2.5 million documents in the collection. In 1992 Congress passed the American Technology Preeminence Act (ATPA) which mandates that all Federal agencies submit their public scientific, technical, engineering and related business information to NTIS. This has significantly increased the breadth and depth of our information products.

### FedWorld.

FedWorld is an on-line information service established by NTIS in 1992 to provide the general public with a user-friendly, central resource for government information. FedWorld provides both

dial-up and Internet access. Today, there are over 120,000 registered users that access everything from White House press releases to the Security and Exchange Commissions' investment advisory's to the National Cancer Institute's Cancer research or treatment information.

In addition to the databases described above, FedWorld also allows users to "gateway" through the system to over 130 other publicly available government information systems. This effectively provides for a "one-stop" electronic shopping mall of numerous types of government information.

Automated Document Storage and Retrieval System (ADSTAR).

NTIS has moved into the electronic input, storage, and retrieval environment. Automated Document Storage and Retrieval (ADSTAR) is the information management system that will tie together the optical character readers and scanners with the full-text database systems, optical disk library system, CD-ROM production system with the FedWorld data link and the remote printing capabilities.

At the present time, we have successfully implemented the concept to scan documents into the image storage system and retrieve them on demand. These documents can then be printed in paper, microfiche, or converted to character read material and formatted to meet customer needs -- even custom CD-ROM's. This new system will be integrated order processing and billing systems and significantly improve our ability to satisfy customers and reduce costs.

Other NTIS Services.

Fax Management (both inbound transmissions and outbound transmissions); Freedom of Information Act (FOIA) fulfillment; production services, patent licensing services, business partnerships and joint ventures are other services NTIS offers other government agencies. For nearly 50 years, NTIS has been the cost effective alternative to help federal agencies improve their own information activities.

#### THE BUREAU OF EXPORT ADMINISTRATION

Critical Technology Assessments.

BXA is the departmental lead for conducting in-depth assessments on the financial status and production capabilities of industries and technologies critical to current and future defense systems. These assessments provide industry and government with comprehensive information and analysis on the performance and competitiveness of critical technology firms, an important

function in light of declining defense budgets. While these technologies are essential to developing next generation defense systems, they are also dual-use in nature and crucial to our ability to compete in the global economy. Examples of recent assessments include artificial intelligence, advanced ceramics, advanced composites, superconductivity, and optoelectronics. Additional assessments are underway in semiconductors and software.

#### Competitive Enhancement Program.

BXA is leading a unique interagency effort to enhance the competitiveness of specific subsectors that have been hurt by imports but are nonetheless vital to our economy. This program evaluates the strengths and weaknesses of targeted subsectors, introduces potential customers to manufacturers, and provides a comprehensive response to the specific needs of that subsector. BXA assembles teams of government experts and end-users to visit manufacturers and then to apply the expertise and resources of the team members to help the manufacturers facing competitive challenges.

To date, this interagency effort has addressed the competitive concerns of three electronics subsectors: semiconductor brazed pins, copper tungsten heat sinks, and aluminum silicon carbide. In the first two cases, domestic firms are facing foreign competitors with advantages in price, technology, or manufacturing capabilities. In the last case, the United States is in a position to take a leadership role in this emerging technology. BXA is reviewing additional subsectors.

#### Fostering Joint Technology Ventures with the Former Soviet Union.

The Department of Commerce is also a catalyst in spurring technology relationships between U.S. industry and defense establishments in the former Soviet Union (FSU) that will both enhance our competitiveness and assist economic conversion in those states.

The lack of market driven cost restraints has resulted in FSU research programs pursuing many technological paths of that were prohibitively expensive to western market-based economies. The results and knowledge base now provide the opportunity for exploring new commercial applications for this base of research and "know how."

The Bureau of Export Administration as Vice-Chair of the Defense Conversion Commissions with Russia, Ukraine, Kazakhstan, and Belarus, has taken a lead role in researching and disseminating to U.S. industry information on FSU technology. In addition, BXA provides information on how to develop joint research

relationships and referrals to appropriate U.S. agency programs for assistance in financing these ventures.

#### Economic Impact Analyses.

Export controls on technologies that have both military and commercial applications can adversely affect U.S. industry, particularly high technology sectors, by excluding U.S. firms from certain markets. In response to the mandate of the Trade Policy Coordinating Committee, the Bureau of Export Administration developed a new initiative in October 1994 to analyze the impact of export controls on U.S. industry and to ensure that economic factors are considered in export control decisions. The goal of this program is to remove export controls that are not serving their intended security purposes and are hindering our competitiveness in world markets.

### THE NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION

#### National Information Infrastructure and Global Information Infrastructure.

The Federal Government is acting as a catalyst to promote the private sector development of the NII and GII. The NII and GII will directly contribute to a stronger economy, more competitive business, more effective government, and better educational and technological leadership. NTIA is the agency within the Department of Commerce that supports the Secretary of Commerce as the principal telecommunications policy adviser to the President, and Vice President. In this capacity, DoC/NTIA provides administrative support on the planning and implementation of the Administration's NII/GII initiative. DoC/NTIA efforts are focused on:

- The Telecommunications and Information Infrastructure Assistance Program (TIIAP), a competitive, merit-based program which provides matching grants to state and local governments, health care providers, schools and universities, libraries, community groups and other non-profit entities to access new telecommunications and information technologies. TIIAP, which is administered by DoC/NTIA, received requests for more than \$560 million in 1994. Secretary Brown announced 92 TIIAP grants totalling \$24.4 million in government funding in October 1994. The TIIAP projects will demonstrate how NII can be used to create a technology-literate and creative work force ready to compete successfully in the 21st century.
- The Information Infrastructure Task Force (IITF), formed by the White House and chaired by Secretary Brown, consists of

high-level representatives of the Federal agencies that play a major role in the development and application of information and telecommunications technologies. The IITF articulates and implements the Administration's vision for the NII. NTIA provides administrative support and staff assistance for much of the work of the task force.

- The U.S. Advisory Council on the NII (NIIAC), established by the President through Executive Order No. 12864, consists of thirty-seven members appointed by Secretary Brown to provide private and public sector consensus advice to the Secretary on the development of the NII. The Council members represent many different stakeholders in the NII, including industry, labor, academic, public interest groups, and state and local government. NTIA provides administrative support for the Council.
- The G-7 Telecommunications Ministerial in Brussels in February 1995 will advance the development of the GII as the foundation of the information society and provide an opportunity for private sector as well as governmental exchanges. The GII holds significant economic and social promise for all nations and, although the private sector will lead the development and implementation of the GII, such cooperation and collaboration among nations is essential. NTIA has the prime responsibility within the Department for the preparations for the G-7.

#### Telecommunications Legislation.

The Administration supports passage of telecommunications reform legislation that will open markets to competition while including safeguards as necessary to protect the public interest. Successful legislation should promote competition, provide open access, ensure regulatory flexibility and preserve and enhance universal service to ensure that all Americans have access to the benefits of the NII. NTIA expects to work closely with Congress during the next session to develop a bipartisan bill to accomplish these goals.

#### Telecommunications Research.

NTIA's Institute for Telecommunication Sciences (ITS) is the Nation's premier Federal telecommunications research facility. ITS is performing state-of-the-art telecommunications research and engineering to improve telecommunications system planning, design, and evaluation. Current efforts focus on personal communication services; broadband radio; and related wireless and wireline communication technologies. A key aspect of ITS agenda is centered on research and engineering studies to further applied knowledge of the radio frequency spectrum. The resulting

spectrum use concepts and models will lead to more efficient industry and Government use of the radio frequency spectrum.

#### Radio Frequency Spectrum Analysis.

NTIA manages the Federal government's use of the radio frequency spectrum. Program activities broadly address every aspect of radio frequency spectrum management, including authorizing government frequency assignments, providing in-depth technical engineering analyses of spectrum use to promote increased sharing of spectrum resources and spectrum efficiency, supporting domestic and international policy development and long-range planning, establishing plans and policies that ensure the efficient, effective and equitable use of the spectrum, and representing the U.S. government position at international conferences, technical study groups, and standards bodies.

#### THE PATENT AND TRADEMARK OFFICE

##### Administration of the Patent and Trademark Laws.

The PTO has been at the forefront of the Administration's efforts to improve U.S. competitiveness in the international marketplace by stimulating the technological capabilities that bear on economic growth. At the heart of technological-based economic growth are America's innovators. The PTO provides an invaluable link between America's innovators and a technology-based economy. The PTO serves America's inventors and entrepreneurs by providing them with the protection and encouragement they need to turn their inventive ideas into marketplace realities. The PTO accomplishes this by administering the laws relating to patents and trademarks, which includes issuing patents, registering trademarks and disseminating patent and trademark information to the public. Innovative activities appear to be at an all time high. This is evidenced by the record number of patent and trademark applications filed and the record number of patents issued this past fiscal year.

##### Dissemination of Technology to Stimulate Innovation.

At the root of innovation is information dissemination. The PTO promotes innovation by widely disseminating patent and trademark information throughout the world. Not only does the PTO publish patent and trademark information weekly, but it also supplies the public with patent and trademark information through its 78 depository libraries located throughout the country and its automated systems in its Public Search Rooms located in Arlington, VA.

The PTO also relies on the private sector to disseminate patent and trademark information. The PTO "wholesales" data on a

marginal cost basis in the form of our data base tapes to private sector firms. This allows private sector companies to provide value-added services to the public by enhancing and repackaging the data and making search systems available through commercial networks.

The PTO has made the full text and images of about 1,500 AIDS-related patents available to the public. This AIDS-related patents data base represent a huge leap in making patented technology available to the public. It not only spurs the research community to create methods of curing and controlling AIDS, but also demonstrates the potential of the use of patents as a tool for promoting technology and education.

#### New Examination Guidelines.

The PTO is taking aggressive steps to address the concerns of one of the most important patent user communities -- the biotechnology industry. One of the recent significant steps taken by the PTO is the proposal of new guidelines for examiners to follow when reviewing patent applications for compliance with the utility requirement of 35 U.S.C. § 101. The proposed guidelines should prevent the "catch-22" complained of by many biotechnology companies, whereby a company is required by the PTO to provide human clinical data to support therapeutic utility while at the same time that company is unable to raise funds to perform the trials that generate the clinical data because the status of the patent application is unclear. The proposed guidelines will also address several other problems identified by the biotechnology industry.

#### Future Patent Reforms.

The PTO will continue its efforts to improve domestic and international levels of intellectual property protection and promote industrial and technological progress in the United States. The PTO will work with Congress to implement legislative reforms that will make the patent and trademark systems work better and provide more effective rights. Such legislation would speed innovation by making technology, especially foreign technology, available to the public at an earlier date. In addition to Congressional initiatives to reform patent and trademark practices, the PTO, with assistance from the public through public hearings, will continue to review its operating procedures and change any procedures that prove to be burdensome, inefficient or outmoded. Doing so will enable the PTO to provide U.S. businesses with one of the most important competitive tools they need to compete in today's market -- adequate and effective intellectual property rights.

## The Office of Air & Space Commercialization

### Introduction.

The Office of Air & Space Commercialization (OASC) advises the Secretary and Deputy Secretary in the formulation and implementation of policies which foster the growth and international competitiveness of the U.S. commercial space sector, and which promote the commercial use of space by U.S. private industry.

### Remote Sensing.

In March Deputy Secretary Barram, on behalf of the Administration, announced a major policy change in the treatment of commercial remote sensing imagery and systems. The U.S. Policy on Foreign Access to Remote Sensing Space Capabilities (PDD NSC-23) anticipates expanded sales of commercial images from space and a new market for the export of remote sensing systems themselves.

This policy represents a major milestone in the commercialization of space-based imagery and unleashes the potential of a critical 21st century information technology at a time when the international market for space-based imagery appears poised for significant expansion. It should open the way for U.S. aerospace firms to aggressively compete in a \$400 million market worldwide, a market which could grow to more than \$2 billion by the year 2000. The geographic information systems market (which is the market for images incorporating demographic or technical data with digital maps) could be in the range of \$5 to \$15 billion by the turn of the century.

The commercial remote sensing policy also aids the defense industry in its efforts to find new commercial applications for defense technologies. Moreover, the data produced by this technology will include environmental and geographic information that will greatly advance emergency management and rescue, disaster relief, mineral exploration, crop management, cartography, real estate and a variety of other commercial endeavors and become an important product to be delivered over this country's National Information Infrastructure.

OASC will continue to foster the U.S. technological lead in this area into the 21st century, encouraging the worldwide exploitation of 1-meter imagery by aiding in the implementation and refinement of this policy in the coming years. It will be responsible for representing private sector interests while considering national security and foreign policy concerns in interagency and intergovernmental policy discussions.

## Space Launch Trade Agreements.

OASC, on behalf of the Department, has worked with the rest of the U.S. government and other nations to help increase the size of the world market for space launch without jeopardizing economic advantages that the United States has gained.

Launch-service trade agreements developed with the governments of Russia and China strive for an environment under which introduction of launch vehicles from economies in transition will cause minimal economic disruption. These agreements will allow U.S. launch service providers to compete fairly with foreign providers for international business, and aid the transition of formerly non-market economies to economies based on fair and even trade.

As we reach the turn of the century, OASC will be involved in the maintenance of the agreements already signed, as well as in negotiating possible new agreements with other non-market foreign launch providers. The office views these agreements as an integral part of the Administration's plan to develop low-cost, dual use, reliable access to space and foster fair competition in the international launch market.

## National Space Launch Policy.

OASC has begun exploring new and innovative relationships between government and the private sector in the area of space launch.

A new Presidential policy on space transportation (U.S. National Space Transportation Policy, NSTC-4) recognizes the importance of private sector input into government space launch policies and activities. This policy reflects a paradigm shift toward supporting increased commercial activity in space, therefore encouraging growth in satellite manufacturing, launch services, and space applications, and reducing the cost of access to space.

In response to this policy, OASC organized a Government-Industry Roundtable of 25 CEO's from the launch, satellite manufacturing and satellite operating community. The intent of the meeting was to listen to private-sector concerns and suggestions for developing an overall strategy on how to help make this industry more internationally competitive.

As a result of this meeting, OASC and the Department of Transportation's Office of Commercial Space Transportation are developing a policy implementation plan that spells out specific means of promoting the international competitiveness of our space transportation sector. With industry, NASA, the Department of Defense, and the Congress, the two offices will examine the role of the private sector in the design, financing and development of U.S. next generation launch systems. They will also explore

innovative industry-government arrangements for new space transportation systems (Ex., risk sharing, tax incentives, equity participation).

#### Emerging Space Applications.

OASC is keeping an eye on the future of space by supporting the development of unique and innovative commercial activities in space. OASC's plans include investigating ways to remove impediments to a privately-financed, next generation commercial space-based production facility. The office is consulting with private Global Positioning System equipment manufacturers to examine the application of GPS technology to the National and Global Information Infrastructure and the every day utility of accurate, world-wide position information. OASC is also examining the role of satellites and wireless communication in the GII.