REMARKS

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AND WORLD TRADE

WASHINGTON, D. C.

NOVEMBER 16, 1966

Mr. Secretary, you have an imposing list of participants in this conference. By the time it is done, I am sure that just about every conceivable aspect of technology and trade ... technology and competition... technology and investment... technology and growth will have been examined and discussed.

I am also aware that the so-called "technological gap" between the United States and other nations -- even particularly our Western European friends --- can hardly be escaped these days. Each day there seems to be a new proposal -- and some of them have been good ones --- toward closing that gap. If there is a technological gap, there is no gap in the information about it.

Therefore, rather than enter into any technical discussion this evening, I would simply like to leave behind a few general observations and ideas.

First, although some people deny it, I do not dispute the fact of a technological gap.

I know that all the statistics indicate that we in the United States have commanding leads over Western European nations in many fields -- especially in computer technology and utilization.

But, we have advanced technology in large part simply because our industry, which exists in many cases on a far larger scale than European industry, has had the need for it. Supply does follow demand.

I think by far the most promising proposals for closing the American-European technological gap have been those such as Prime Minister Wilson's on Monday for a European Technological Community.

If Europe -- which has already seen the benefits of a European Economic Community, a Coal and Steel Community, and an Atomic Energy Community -- were to pool her technology in a similar way, I have no doubt that the gap would already be a long way toward being closed.

Of course, the ~~very fact of~~ possible entry into the European Communities by Britain and her EFTA partners --- and eventually perhaps by others --- would help create an even larger European market and larger industry able to finance and sustain advanced technology, along with the necessary research and development.

And from the general need for such technology, I feel sure it would follow.

#2

This leads me to my second observation: Namely, that economic integration and the creation of larger, continental markets --- all over the world --- can be a powerful force for closing any technology gaps.

It seems obvious, but too often overlooked, that small and poor nations stand little chance for economic sustenance if they do not seek economic integration --- or at least, close economic cooperation --- with their neighbors. This is beginning to happen in Latin America, Asia and Africa, but not nearly rapidly enough.

I am pleased to see that "Technology and the Developing Countries" will be one of your subjects to morrow.

Long after any North Atlantic technology gap is closed, it will be the business of the Atlantic nations to try to close the far more dangerous rich-poor nation gap. We in the rich nations must begin taking more active steps now to help the poorer nations build their economies, create broader markets, and develop their own technologies.

I do not mean that each developing nation, and its economic partners, will need the capacity to produce and market sophisticated IBM systems.

But I do mean that, without trained manpower and the ability to enter the technological age, the developing nations will not only be unable to compete in world markets but that the resulting political and social unrest in these nations will be a threat both to their own security and ours.

#3

And this leads me to my third general observation: That we all ought to do a little more thinking about what technology is for.

If technology is used just to construct more impressive pieces of hardware -- without resulting human benefit -- then it will be wasted.

I believe that today we have the technological capacity already at hand: To rebuild the decaying central cores of large cities all over the world; to provide decent and reasonable housing on a wide scale; to lift primitive agriculture into the modern day; to compress the time scale for nations with catching up to do; to master our physical environment before it masters us; to end the coexistence of starvation and abundance on the same planet.

In my view, the real "technological gap" is between our technological capacity and our application of it to social needs.

These needs -- such as education, public health, recreation and transportation -- exist in every part of the world. Meeting these group needs, however, is quite different from meeting individual needs such as for automobiles, clothing, or electrical appliances.

Old ways of doing things simply won't do the job. We need new mechanisms, new ways and means for bringing technology into the market place of public needs.

Here in our country the model may lie in the constructive partnership of government, industry, labor, and the university that has been so successful in our space program.

The talent and resources of all these elements in American society, brought to bear in an efficient and coordinated fashion, have moved us forward in space far more rapidly than we would have hoped even a few years ago.

We have seen, too, what government research and development contracts --- given to the university and to private corporations --- have produced in overcoming scientific and technological obstacles in a remarkably short time.

The same partnership concept ... the same "systems approach" ... the same investment in research and development, applied to other public needs, may prove to be the way in which ~~our nation~~ we may finally be able to overcome economic and social problems which have been generations in the making. In all of this, Management — Management Competence, is the essential ingredient. ① Capital, Skills & Management —

I believe, too, that private industry, acting on its own, can be a powerful force in overcoming these problems.

Here In the United States, ~~a good deal~~ most of our technological capacity lies in private industry. In other countries, this situation often differs.

~~I know from personal experience that~~ American business today is demonstrating a social conscience. This has been shown again and again in such areas as equal employment opportunity, retraining of workers, and hiring the handicapped. and Often as not, public service has also turned out to be profitable.

~~I think that~~ American private industry -- operating in a competitive environment which promotes efficiency -- can profitably enter other areas of public need, providing educational services, slum rehabilitation, build cities and ~~such things~~ establishing as information systems.

Where these things may not be profitable, I believe we in government should do what we can to be of help until they become so. (But I have the feeling many of these things can be profitable from the start.)

Today we are putting to use in government many of the modern management techniques already used in American industry.

In formulating federal programs and in organizing ourselves -- such as in the new Department of Housing and Urban Development, and of Transportation --- we are increasingly concerned today with attacking our national problems with the highest degree of coordination and cost-effectiveness.

We have finally, for example, with creation of the new Department, begun to consider transportation as the problem of how to move men and materials most effectively, rather than solely in terms of the particular problems of railways, airlines and highways.

The new Demonstration Cities Act, passed in the last Congress, is our first legislation which attempts to pull together all programs for the city -- programs for economic opportunity, for housing, for clean air and water, for social welfare, for highway construction, for neighborhood renewal, and so on -- and bring them to bear together in the right mix, in the right

place, at the right time to best improve the urban environment. Up until now these programs have too often been administered without regard to their relation to each other, or to their order of priority.

And both the partnership concept and systems approach have been put to work in the war on poverty --- part of which is managed under contract by private American corporations.

In California my friend Governor Pat Brown -- working with aerospace companies -- has made a promising beginning at the state level in applying these approaches to problems of transportation, garbage disposal, crime, and paperwork.

We are just beginning to utilize our technological capacity for human benefit here in the United States. We are learning.

But, during the learning process, we [redacted] --- as the world's most technologically-advanced society --- have a responsibility to help create human benefits in other places by making our knowledge more widely-shared.

Technology moves in the form of products and services that nations exchange. It moves through patent royalties and licensing arrangements. It also moves in textbooks.

I have noticed that while a breakthrough in science flashes quickly around the world, a breakthrough in technology may take years to find its way to a place of need. What we should seek, therefore, are rules and practices to help speed the flow of technology, not slow it down or stop it.

I know the argument that technology carefully gained should not be easily shared, lest hard-earned competitive advantage be lost.

The argument against sharing of technology, it seems to me, is not unlike the argument against liberalized trade.

But in technology, as in trade, the benefits of openness and free exchange would seem to outweigh any loss of temporary, protective advantage.

I should think that an international patent system, for instance, would go a long way toward safeguarding ownership of valuable technological processes without burying each nation under paper.

And it seems clear to me that the United States' own long-term economic interest dictates that our trading partners should develop strong, technologically-based competitive economies.

Technology also moves in the minds of people who travel from one country to another.

Some travel to teach, and some travel to learn.

When students have been trained in another country and then remain there to fashion their careers, we are faced with one element of what is the now-famous "brain drain."

There are thousands of young scientists and engineers working in the United States who came here to learn, but have stayed to earn.

If it is any comfort to those nations which have lost the services of their talented citizens, they should know that we have experienced a comparable situation in the United States.

Some of our states and regions graduate more PH.D.s each year than they employ. There is a "brain drain" from our Midwest to our East and West Coasts. We deplore this. But from a broad, national point of view, we can at least take some comfort from the fact that the United States as a whole is richer for this new talent.

But there is no comfort at all for the developing country desperate for trained manpower when that manpower is swallowed up here.

These are precious human resources they cannot afford to lose.

So, How do we reverse this flow?

First of all, I take it for granted that good, technically-trained people do not turn away from their homelands for money alone, or for better living conditions alone.

Any good man wants to be where the problems are and where he has a fair chance of solving them. He also wants to utilize the most modern equipment and facilities.

There are some things we can do.

I believe a great part of the problem lies in the educational systems of the industrialized countries. Too often, we offer discipline-oriented -- rather than problem-oriented -- education and training.

Quite properly we emphasize the "ics" -- physics, optics, nucleonics. I believe we must emphasize too the "tions" --- education, transportation, nutrition, communication, irrigation -- the things needed in developing countries --- so that both our own citizens and those of developing nations can acquire the useful skills of nation-building.

I think, too, that we can help draw these valuable people homeward by making available to their own nations equipment and facilities that they have become accustomed to here. Our government agencies, our universities, and private industry are all topheavy with equipment which is perfectly satisfactory for skilled use, but which has been superseded by the next-generation model.

As chairman of the Aeronautics and Space Council, I have made it my particular business, for instance, to urge that equipment which has served its purpose in our advanced research and application in space be put to good use elsewhere.

We can help by working with the developing countries to insure that too high a percentage of their students do not come to the United States to acquire skills which have no relation to the priorities at home.

We can also, quite practically, do what we can to help establish institutions in their home countries which will give these young people the skills they need without leaving home in the first place.

And, then, there is the across-the-board need to help build the technologies of the have-not nations so that their talented people will have sufficient daily challenge. It is clear that unemployed or underemployed scientists, even if they do not leave their country, pose political and social problems.

In all we do to raise technological capabilities around the world, and to use those capabilities for human benefit, I am convinced that we should not become bound by doctrine, dogma, or ideology.

In the United States there were any number of people who argued that there was no way to undertake a major effort in space except under complete government auspices. Yet, as I have related, we have been successful with another approach.

I am equally sure that the approach we took would be a dismal failure in many other countries, because of the varying strengths and relationships in their societies.

I think we need to find out what works, and use it. I can think of a number of opportunities, not tried or barely tried.

For the business executives here tonight: I believe private corporations should think about establishment, with other corporations -- regardless of their nationality -- of joint training institutes in talent-short parts of the world.

I don't mean that you should establish your own private foreign aid programs (although I'd be in favor of that too.)

What I see are cooperative arrangements which meet the intellectual needs of the people being trained ... which help meet the national goals of the country in which the institute is located ... and the legitimate financial objectives of the private or public enterprise company which sponsors it.

To those of you from universities: I would like to see schools established by you, on your own initiative, devoted to city-building, to agricultural development, to modern management. Why can't we export the essence of the Harvard or Stanford Business Schools?

I believe that American and European universities --- increasingly breaking out of isolation from their own societies -- should try to meet as well the human needs of the people living in the forgotten two-thirds

of the world.

To those of you from private organizations and foundations: What opportunities do you see? Here in the United States we have a National Academy of Engineering. It took us a long while to get it, but now we have it.

I see no reason why the Academy could not serve as a clearinghouse in helping to set up similar engineering institutions in other countries, working on public problems.

To those of us in government: I think each of us, in our respective governments, must seek new ways to use technology constructively.

The United States government, in this past year, has embarked on new international programs using technology in the fields of health, of education, and of agriculture. We mean to expand those programs. We have taken steps to remove barriers to the flow

of scientific and technical information and instruments to and from our country. We have increased our programs of international exchange.

But we must do much more, as other governments must do much more.

I believe that we should be particularly receptive to proposals from other governments, from international organizations, from private companies or groups of companies, from any source in fact which wants to put technology to wider and better international use.

The least we can do is to reward initiative by others, and to remove unnecessary obstacles, when a good idea turns up. (And if the Americans in the audience have any doubt about where to submit their good ideas, I would refer them to Vice President Humphrey.)

Finally, may I make this observation:

We can perceive today the general need for ... and the genuine benefit from the building of technological strength in every country of the world.

We can also begin to perceive the ways in which this can be done -- a number of them have been discussed at this conference.

What remains to be done is for all of us to act on our knowledge.

As Thomas Huxley once said: "The great end of life is not knowledge, but action."

It seems to me an abysmal waste of time, of resources, and of energy whenever men build barriers between themselves or when they miss the opportunity to improve mankind's general lot on earth.

Today we have the chance -- through technology -- to remove those barriers, and to lift all our nations together by our action.

I think we should get on with it.

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