

Remarks by William C. Norris
Hubert H. Humphrey Institute of Public Affairs
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Thank you, Dean Schuh, for inviting me to come to the Hubert H. Humphrey Institute and talk about the newly-established William C. Norris Institute. This is the first time that I have spoken in public about the Norris Institute, and I am pleased to be here because it reminds me strongly of my friendship with, and respect for, the man for whom this Institute was named.

Hubert Humphrey was one of the truly great public servants of his time, a fact which has become even more evident in the ten years since his death. In that regard, I congratulate the Humphrey Institute for all that it has done, first under the leadership of my friend Harlan Cleveland, and now under Dean Schuh, to translate Hubert Humphrey's ideas and ideals into reality in our public life, and I wish you well as you continue this mission in the years ahead.

I am also reminded of what Senator Humphrey said late in his life as he looked back on all that he had accomplished. And I quote, "In my years of public service," he said, "I have tried to serve as a voice and worker for the cause of equal justice and equal opportunity, and for the common defense of our country. In all these years I have never felt truly alone. I have always been aware of the innate good sense and good will of the American people." End. I think those are good words for all of us who are working for the cause of equal justice and equal opportunity to remember.

My relationship with Hubert Humphrey began in 1975 because of my growing concern over maintaining adequate levels of employment and the relatively small degree of participation by business in addressing this serious problem. In fact, I was the only person from the big business sector to testify in Congress in support of the Humphrey/Hawkins Full Employment Act. Even though I noted the limitations of the act, I supported it because the legislation did provide a framework for supplementary legislation needed to establish a specific action program to create jobs.

At the same time, I began to discuss with Senator Humphrey a nationwide program for establishing small business innovation networks, operated by public-private partnerships, to create private sector jobs. He was keenly interested and assigned two members of the staff of the Joint Economic Committee, which he chaired, to work with me to formulate legislation.

Unfortunately, before this effort was very far along, he died. I couldn't identify another member of Congress to support it, then or since, who has his broad vision, deep concern for social justice and great leadership capabilities. Consequently, progress has been impaired.

However, fostering legislation for establishing innovation networks nationwide is one of the efforts being continued by the Norris Institute.

I will now briefly review the Institute. It was established early in January by a \$10 million dollar endowment from Control Data, along with the transfer of an urban technology data base business called "LOGIN," to the Institute. The Institute's annual expenditure rate is planned at \$2 million until additional funding is obtained.

The Norris Institute is a non-profit corporation, independent of Control Data. To a major extent its mission is to advocate and catalyze the expansion of innovation through increased public/private technological cooperation for improving competitiveness, creating jobs and better meeting other unmet or poorly-met social needs. Frequently, seed money is provided to catalyze the development of technologies essential to success of cooperative efforts. The Institute also addresses policies and infrastructure.

If all this sounds familiar to some of you, it should. For more than twenty years, I pursued a similar mission while Chairman and CEO of Control Data. A number of significant achievements have been recorded. Let me mention a few.

First is the formation in 1983 of the Microelectronics & Computer Technology Corporation (MCC) in Austin, Texas. MCC is the flagship for large scale technological cooperation. Initially, there were eleven participating companies in MCC, mainly from the semiconductor and computer industries. This number has grown to twenty. Success of MCC is evidenced in part by the fact that each dollar a participating company invests in MCC research programs produces research results costing five dollars.

A second achievement is the formation in 1985 of the Midwest Technology Development Institute (MTDI), a consortium of midwest states to advance technological cooperation. MTDI, which is headquartered in St. Paul, is still struggling with startup problems. One is that states find it much harder to cooperate than compete. However, MTDI is making progress and will prevail.

Third to mention is the accelerating use of computer technology-based education, which has been pioneered through public/private cooperation, stimulated, to a major extent, by Control Data. Many more cooperative programs could be mentioned which were catalyzed by Control Data.

In the public policy arena, Control Data has made significant contributions. One example is the substantial leadership provided in gaining the enactment of the National Cooperative Research Act of 1984. A second is assistance in passing legislation establishing the Small Business Innovation Research Program. Thirdly, I helped get congressional action to modify the Stevenson Wydler Act to facilitate the transfer of government laboratory technology for commercialization.

Mergers and takeovers is another major area of involvement. Control Data and I have been in the forefront of the movement to develop corporate policies and procedures to defend against hostile takeovers and to design and advocate legislation for constraining hostile takeovers. For instance, about 15 years ago, Control Data invented what is now called the Golden Parachute. We called it a management employment security agreement. Control Data also pioneered and put into effect by board of directors' action two other policies, which are being emulated by other corporations. One is the concept of requiring consideration of

non-financial factors by a board of directors in reviewing the merits of any proposed merger or acquisition. The second policy mandates that a business and social impact statement be prepared before any contemplated merger, acquisition, plant closing or major layoff can be implemented. In the event of major adverse effects, alternative methods of accomplishing objectives must be considered.

Rationale

The decision to sever the pursuit of the broadly-based mission of the Norris Institute from Control Data reflects the company's focus on a narrower set of business opportunities. At the same time, the Institute can pursue a comprehensive approach, which is necessary for effectively advancing innovation, on a cooperative basis, responsive to major societal needs.

Further, a non-profit status helps in gaining greater support for such programs in today's environment by government agencies, foundations and other corporations.

Federal agencies such as AID, The Economic Development Administration, and the Department of Education are reluctant to support cooperative programs on a profit-making basis such as those for job creation and improving education. These agencies are much more comfortable contracting with non-profit organizations. Furthermore, participation by a large company such as Control Data in a public/private partnership was viewed with suspicion, lest it make a profit. The latter, of course, was the major reason for Control Data's involvement, as it should be for any corporation. However, with seed money being provided by a non-profit institute, that constraint should disappear.

Many foundations and corporations are also reluctant participants in public/private partnerships. Foundations have much of the same concerns as federal agencies. On the other hand, most corporations won't participate in public/private partnerships addressing social needs on a profit-making basis, because these programs are too long term. Also, corporations hesitate to enter into cooperative relationships involving a number of different types of organizations, because a type of management process is required which is foreign to them.

Hopefully, the Institute can help change those views by demonstrating success with cooperative programs.

Programs

That's the rationale behind the Norris Institute. Now let me tell you what it will do. Current Institute programs include advanced manufacturing, rural development, computer technology-based education and training, urban technology transfer, economic and social improvement for developing countries and technology measuring and tracking.

Manufacturing: The program in manufacturing has the objective of rapidly expanding utilization of advanced manufacturing technology, especially by small companies, so they can compete worldwide on the basis of quality, cost and performance. This will be accomplished primarily by providing access to advanced manufacturing facilities on a services basis, i.e., companies won't have to make a large investment in a new facility which they can't afford.

Without such a program, many small manufacturing companies will go out of business and new innovative companies will find it increasingly difficult to be successful.

Rural Development: In the area of rural development, major objectives include new directions for agriculture and improving the profitability and number of family farms. The latter is to be accomplished primarily by developing the right kind of technology, which is less capital and fossil fuel-intensive and environmentally acceptable, and by optimizing its use through computer-based expert systems.

Projects are under way at the University of Illinois and at the University of Minnesota. Projects are being planned with South Dakota State University, North Dakota State University and the University of Nebraska.

Another objective is to increase off-farm employment by expanding and diversifying the business base in rural areas through public/private cooperation.

Important to the achievement of rural development objectives is the acquisition of European

agricultural technology which, in a number of areas, is more advanced than that in the United States. Also, the potential for cooperative R&D in agriculture with European countries will be investigated, and cooperative R&D joint ventures involving small businesses are being considered.

Education & Training: In education and training, the Institute is focusing on establishing new free-standing or new schools within existing schools which are based on the use of computer technology as the primary mode of delivery. This is opposed to the way it is currently being used, which is supplementary to traditional methods. Experience has shown that just adding on to or modifying the present system will not produce the desired results.

What is needed is a new comprehensive approach providing personalized learning for each student and the means to achieve full individual potential. It is based on computer-based technology as the primary method of delivery for primary, secondary and undergraduate education. In this mode, the computer is used to disseminate information and knowledge, serve as a laboratory device, manage instruction, conduct tests and generate reports. This frees teachers of inefficient, traditional lecturing, testing and record keeping; hence, they have more time to devote to meeting the needs of individual students.

Goals of a computer technology-based system include improved learning outcomes, leveling off the ever-rising cost of education and higher teacher salaries.

To see how effective computer-based technology can be in the teaching process, we need only look at the explosion in the rate of its use by industry and a number of government agencies. Across a wide spectrum of uses, such industries as textiles, transportation, health care and agriculture are applying it to improve learning outcomes and reduce costs. By far, the largest user in the government is the armed forces; however, the Federal Aviation Administration has utilized computer-based training for many years.

Implementation: How can a new comprehensive computer technology-based approach be implemented the soonest, considering institutional inertia to change?

The answer is to implement the approach in new schools within existing schools, thereby largely avoiding bureaucratic resistance to change. In other words, for undergraduate education, select a segment of a four-year college curriculum, preferably in a new field such as advanced materials in engineering. All courses for the entire four years would be delivered to the maximum extent feasible with computer-based technology.

Computer-based lesson materials, i.e., courseware, is available for most of the first two years of an engineering curriculum. However, virtually all of the courseware for the last two years has to be developed and is a large undertaking. Cooperation among a number of universities is required to assure that the courseware is prepared by the leading experts in each subject.

The approach is similar in K-12 schools in that either new free-standing schools, or separate schools within existing institutions, would be established for each level of K-12 education (elementary, middle and high school). Again, cooperation among a number of schools at each level is essential for assuring the development of the most effective courseware, as well as accelerating the transition to computer technology as the primary delivery method.

Urban Technology Computer Data Base: Urban Technology transfer is accomplished by the local government information network (LOGIN in short). It is operated by the National League of Cities and the Institute. Control Data started the network four years ago and transferred it to the Institute. LOGIN is a for-profit subsidiary of the Institute.

Through a computer terminal, LOGIN members can tap into over 20,000 units of information for dealing with the full range of problems faced daily by cities. There are in excess of 200 members, and usage is growing.

The data base is being expanded to include other items, such as CBE Education & Training and Professional Consulting.

Developing Countries: Next for comment is the economic and social improvement program for developing countries. It is a comprehensive approach embracing the expansion of small busi-

ness innovation, increasing efficiency of small farms and improving education and training. It draws heavily on the current institute programs in those areas.

Jamaica is likely to be the site of the first developing country program. It will focus on the establishment of an innovation network in Kingston.

Technology Measuring & Tracking: I'll include comments on technology measuring and tracking during my review of current Institute efforts in formulating and advocating public and corporate policies, which will be next.

Public Policies

One of those is in the area of hostile takeovers which is a continuation of the Control Data activities mentioned earlier. A second current effort is focused on gaining legislation to establish seed funding to stimulate the formation of large scale R&D cooperation and tax incentives to encourage continuing participation. Both are essential for obtaining a significant and urgently needed increase in the efficiency of R&D. Another policy has the objective of achieving equitable technology flows between the U.S. and Japan. The imbalance which has existed for many years is a major factor in providing Japan a competitive advantage over the U.S.

In order to implement such a policy, a system is needed for measuring and tracking technology flows. The Institute has done preliminary design work for a system and will be submitting a proposal for government funding to carry out its development.

Modus Operandi

As may be judged from the review of programs, the Institute will function as a conceptualizer, consensus builder, catalyst and provider of management guidance relying mainly on other organizations, either existing or established by the Institute, for implementation; however, it will also execute programs.

One of the implementing organizations will be the Midwest Technology Development Institute (MTDI). Where indicated, MTDI will establish cooperative programs with participation by

corporations, universities and government. Funding will be sought from federal and state governments, foundations and corporations.

Currently, MTDI has an implementing role in three of the large scale cooperative efforts: Advanced Integrated Manufacturing Services (AIMSC), The Rural Enterprise Partnership (REP) and Computer Technology in Education and Training. The Institute is providing seed funding to help underwrite the initial design effort of AIMSC. Thus far, the Institute funding has been partly matched by the State of Minnesota and two other corporations. Other funding is expected.

The Institute is also providing the initial funding for farm systems and expert systems projects under the Rural Enterprise Partnership. Institute funding has been matched by participating universities. In addition, a substantial foundation grant has been obtained and another is pending.

The program in computer-based technology has just commenced and the current planning effort is funded entirely by the Institute.

While MTDI is a primary implementor, the Institute is working cooperatively with many other organizations, and I hope areas of mutual interest can be found with the Humphrey Institute. One possibility comes to mind at this time in connection with advancing public understanding of the role of technology in our society. Most people have a very low awareness of its important implications. This is a serious barrier to developing optimum support for innovation. It is also a major reason for lagging interest by young people in science and math. The full potential of the newly-formed Greater Minnesota Corporation in expanding economic development in rural Minnesota won't be realized until there is a broader base of such understanding.

I would like to conclude with the thought that maybe there's some way the William C. Norris Institute, the Greater Minnesota Corporation and the Hubert Humphrey Institute could cooperatively address the technology literacy problem in Minnesota.