Technology: Watchword for the Economy in the 1990s

C. William Verity*

The international marketplace has changed dramatically during the 1980s. The United States no longer has an unquestioned lead in the development and sales of high-technology products. We have seen not just the Japanese, but the Koreans and other nations as well, come to the forefront in turning our technologies to their benefit. Perhaps even more importantly, we now see some of these countries aggressively attacking and developing new, emerging technologies on their own. A newly unified European economy which builds upon sophisticated technical capabilities promises additional challenges for American industry.

What will the future bring? If technology has become much more of a factor in the world trading picture during the present decade, I think it is just an indicator of things to come in the years leading into the 21st century. Technology will be the watchword for the 1990s.

That is why it is so important that we all do a better job of pulling together the resources in industry, government and academia — the pool of talent and facilities that can revitalize this country's civilian technologies. We no longer can afford the luxury of each sector doing its best on its own.

With this in mind, I worked with Congress and received legislative approval for a new position of Under Secretary for Technology and for a Technology Administration in the Commerce Department. This means that for the first time we can bring together the remarkable scientific and technological resources of the Commerce Department.

This is important because today's global market realities demand not only the creation of new technologies — at which America continues to excel — but the rapid and continuous transfer of these technologies to new products. In speeding technology transfer and clearing the path for commercialization of new technologies by industry, this new organization can serve both the science and business communities, and thus the nation at large.

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With a central focus on technology, the Under Secretary will be in a better position to work with other parts of the Department of Commerce that aim to remove barriers to the rapid deployment of technology in the United States — including restrictive trade policies in foreign markets, inadequate laws protecting intellectual property rights, and international coordination of information technologies. That means with the establishment of this new position, the Federal agency that deals most directly with business and industry has a broad — and coordinated — range of programs to help improve U.S. technological and business competitiveness.

The new Under Secretary for Technology will serve as a strategic catalyst to promote the use of science and technology by industry and entrepreneurs — and government — and be both a listening post and a new voice for business in Washington on technology issues.

The new organization will provide a focal point for those in academia, business and government who share a common goal: the creation, production, and marketing of new materials and products. The new arrangement will help ensure that science and technology advocates get the attention they deserve and have the clout to get the job done.

The new Under Secretary will work closely with the President's science adviser and will help coordinate strategies and programs with the appropriate executives in other government agencies, including the Departments of Defense, Energy, State, Agriculture, and Treasury, along with the National Security Council.

We did not develop this new organization in isolation. It reflects the strong support of key private sector policy leaders. Among those who assisted me in formulating this office were Thomas Murrin, recently retired from the Westinghouse Corporation and a leader on several key government advisory committees; Simon Ramo, cofounder of TRW, Inc.; Roland Schmitt, president of Rennselaer Polytechnic Institute; and Lewis Branscomb, formerly of IBM and now director of the Science, Technology and Public Policy Program at Harvard University.

I appointed Ernest Ambler as Acting Under Secretary in early December in order to help lay the foundation for this new organization without delay. Having served as director of the National Institute of Standards and Technol-

*Until January 20, 1989, Mr. Verity served as U.S. Secretary of Commerce in the Reagan Administration.

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ogy—formerly the National Bureau of Standards—and having made industry-government-university cooperation an important way of doing business at that federal laboratory, Dr. Ambler comes well equipped to the job.

The new Technology Administration reporting to the Under Secretary consists of the National Telecommunications and Information Administration, National Technical Information Service, National Institute of Standards and Technology, and offices dealing with technology policy and commercial affairs. An Assistant Secretary for Technology Policy now reports to the new Under Secretary.

This technology team has a variety of responsibilities that can make a difference in America's ability to compete. In addition to carrying out the important missions of the individual agencies in the Technology Administration, the new group's assignments include:

- Identifying opportunities or barriers affecting U.S. commercial innovation, quality, productivity and manufacturing.
- Advocating federal policies and programs to eliminate—across the government—statutory, regulatory, or other barriers to the rapid U.S. commercialization of science and technology.
- Consulting and collaborating with U.S. industrial and nonprofit sectors to periodically identify priority technologies.
- Chartering an advisory committee on the commercialization of technology to provide a platform for industry to discuss technology and competitiveness issues and to counsel the Secretary of Commerce.
- Advising the Secretary and President's science adviser regarding the commercial relevance of federal R&D missions and programs.
- Fostering and promoting federal investment in R&D, technical standards, and intellectual property protection necessary for optimal U.S. commercial development of new products and processes.
- Representing U.S. commercial interests in international science and technology agreements and forums.
- Promoting joint state efforts with business, industry, and academia to encourage technology commercialization.

There is not a single U.S. industry that is not affected by technology advances being made here and abroad. If we do not work hard at making the advances work for us, our competitors will have the upper hand.

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Materials science and technology is a case in point. Advanced ceramics, for instance, represent a new generation of high-performance materials based on the most abundant minerals on Earth. Their high-strength and stability, wear resistance, and other characteristics make them well suited for use in applications as diverse as cutting tools, biomedical devices, electronic packaging and advanced heat engines. That means that how this country fares in commercializing advanced ceramics will affect these other important sectors of the economy.

Yet our performance leaves something to be desired. Worldwide production of advanced ceramics is growing rapidly, providing stiff competition for U.S. industry. Japan already controls 50% of the $30 billion world market for advanced ceramic materials. A number of countries in Europe also are moving quickly to market advanced ceramic components. The implications of foreign dominance in this market are awesome for the U.S. economy.

High-temperature superconductors are a ceramic application which have received instant world attention. This country has some of the world's top researchers working to understand this phenomenon of high-temperature superconductivity, and to put the newly discovered materials to practical use. But Japan and others once again are showing their aggressiveness and ability to stick to the problem. Unless we see more cooperation, more combining of talent in this country, we may see the rest of the world pull out front of us in exploiting what could be the single most important of a group of emerging technologies.

There are no easy solutions to the variety of problems we face in trying to match and surpass the competition's technology efforts. These are difficult challenges for this country, requiring attention to government policies, industry strategies, and academic abilities. The new attention being given to civilian technology in the economy, and the establishment of a single point in the Commerce Department to focus on this national challenge are good signs for the next decade.

C. William Verity *retired in 1982 as chairman of the board of Armco, Inc., Middletown, Ohio. He joined the company in 1940 and was elected president and chief executive officer in 1965 and chairman of the board in 1971. In 1981 Verity was appointed chairman of the President's Task Force on Private Sector Initiatives. Since 1983 he has served on the Board of Advisers to the President on Private Sector Initiatives. Verity served as chairman of the U.S. Chamber of Commerce from 1980 to 1981, and served from 1977 to 1984 as co-chairman of the US-USSR Trade and Economic Council, a private organization of business executives which promotes nonstrategic trade between the two nations.*

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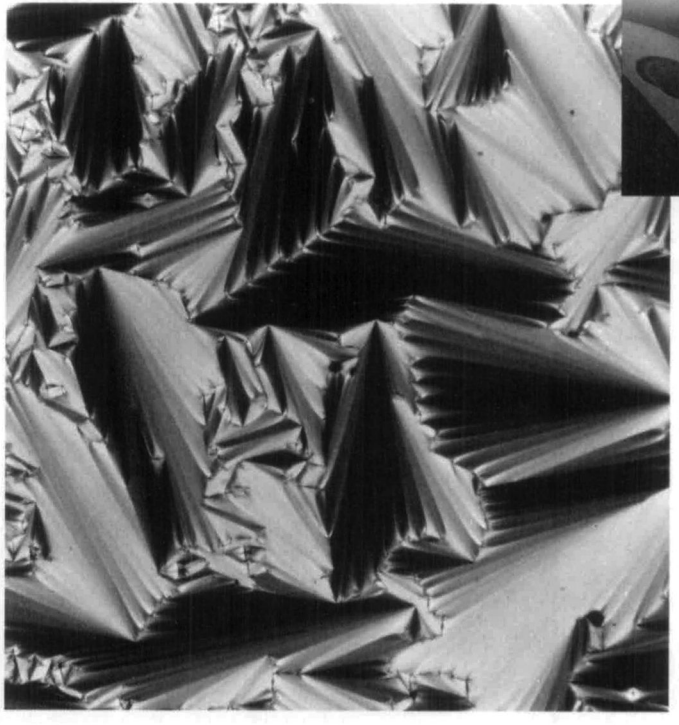

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