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EDITORIAL

America's Challenge

From my perspective as the U.S. ambassador to Japan, I would like to share a few thoughts about the direction in which I see U.S. science and technology (S&T) going and contrast it with what I see happening in Japan. Japan is often portrayed as being proficient at commercializing technologies, whereas the United States is seen as leading in research and development (R&D). This statement may be historically accurate, but today's reality is different. A consensus has emerged among Japan's Executive, Parliament, businesses, and academic institutions that Japan "must stop being a nation of technology followers and become a nation of technology innovators" in order to ensure its future economic well-being.

One clear indicator of the seriousness of Japan's R&D efforts is the level of spending. For several years, Japan has invested a larger percentage of its gross domestic product in R&D than has the United States. In July 1996, the Japanese cabinet approved a proposal to spend $155 billion on government S&T programs over the next 5 years, of which 95 percent is targeted at civilian technologies. As a result, Japanese government expenditures on civilian R&D have caught up with and will soon exceed U.S. funding in absolute terms.

We should welcome Japan's increased efforts. The United States has long encouraged Japan to invest more in its indigenous science capabilities, because Japan shares a responsibility to contribute to the world community's intellectual reserve, particularly in areas such as health, disaster prevention, the environment, and energy. As Japan's abilities increase, opportunities also increase for the United States to benefit from Japanese research in much the same way that Japan has gained from U.S. accomplishments.

At the same time, however, as Japan addresses its relative weakness in basic research, the United States is on a path that will diminish our lead in S&T and constrict economic growth. Science in America today faces decreased federal support, the declining quality of our K-12 educational system, the inability of our budget process to deal with long-range international research projects, and declining interest on the part of our brightest young people in pursuing scientific careers.

Will America respond to this challenge to its technological leadership with complacency or with greater efforts? Last year, I held a series of panel discussions at the U.S. embassy in Tokyo to review the S&T strategies of the United States and Japan. Among our conclusions was the not-so-startling fact that the primary advantage of the United States—the core of our economic competitiveness—is the unparalleled excellence of U.S. scientific research, undergirded by our entrepreneurial system. We as a country, and Congress in particular, must understand that R&D expenditures are an investment in the future and not a form of short-term consumption. We must recognize that the U.S. university research system is a technology generator for our entire country, creating new technologies that lead to new industries and good new jobs. Reduced funding for our research institutions undercuts our technological and economic leadership abroad and diminishes opportunities for Americans at home.

Similarly, in the private sector, we must be careful not to squander our technological leadership. The Japanese are noted for their patience in the long-term development of markets and technological interests, but U.S. corporate traditions often favor short-term financial gain. We must keep our eyes on the long road ahead. We also must ensure that the process of commercial technology development and transfer proceeds fairly and honestly. Japanese firms are adept at acquiring our commercial technology, but we need a more symmetrical two-way technology flow.

Finally, we must balance the flow of technology between the United States and Japan not by restricting the free flow of information in the United States, but by fostering a greater presence of our students, researchers, and industries in Japan in order to benefit from Japanese research accomplishments. America's challenge is to welcome and respond to Japan's S&T initiative. The two countries should not behave as adversaries but, like the Olympic athletes in Atlanta, as competitors who drive each other to higher levels of achievement for the benefit of all the world.

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