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The National Interest

THE U.S. EDGE OVER JAPAN

Japan has earned a reputation for swiftly and effectively carrying ideas from the laboratory to the market. Japanese companies are often said to be better organized, better motivated, and better financed than their competitors in the United States. It seems to me, however, that the U.S. system of innovation has some clear advantages over the Japanese one.

The United States is still much more capable than Japan of making big technical leaps. The Japanese style of technological innovation focuses on incremental improvement based on a carefully thought out technical plan, with attention to quality, manufacturing, and cost. But this process does not allow for the unexpected. That's why the Japanese may beat the United States in cameras and color copiers but they will notÄat least in the beginningÄdominate opportunities that require novel combinations of technologies, such as multimedia computing. Nor will Japan excel in rapidly moving fields of science. For example, the revolution brought about by molecular biology, where laboratory advances become initial public stock offerings in the wink of an eye, is unimaginable in Japan.

Many complain that Japanese industries receive an unfair competitive advantage because of government support for technology development; this backing has been particularly visible in supercomputers, ceramics, and semiconductor manufacturing. Actually, Japanese firms compete ferociously among themselves, in both international and domestic markets; this competition may account for superior Japanese performance in manufacturing. But in any case, I don't view Japanese government support for cooperative technology development as unfairÄI just wish the United States could do it better.

Japan's Ministry of International Trade and Industry (MITI) achieves cooperative technology development by catalyzing efforts among many firms in fields judged to be strategic. The United States, on the other hand, finds it difficult to agree on the appropriate role of the federal government in the development of civilian technologies. Many U.S. policy makers are skeptical about the government's ability to choose technology winners and losers. The United States also has an unfortunate history of political influence in federally sponsored efforts to develop civilian technology.

But our inability to agree on effective mechanisms for cooperation should not lead us to condemn the Japanese approach. Rather, we should try to make better use of the considerable skills that exist in our universities, industries, and national laboratoriesÄskills that add up to, in effect, a "creative edge" over Japan.

Japanese universities, for example, still trail their U.S. counterparts in science and engineering research. Few faculty members have active research programs. Although we hear much about the extreme competition in the Japanese primary and secondary school system for entry into the best universities, Japanese youth do not view their university experience as a demanding time. In fact, the Japanese continue to rely on work experience in the industrial laboratoryÄoften after a postgraduate period in a U.S. universityÄto instill the craft of research.

Moreover, the infrastructure of Japanese universitiesÄtheir libraries, laboratories, and computersÄdoes not compare to that of U.S. universities. And Japan has virtually no activity comparable to the resurgence in the United States of cooperative research between universities and industry in areas ranging from biotechnology to microelectronics. Much to the dismay of Japanese university officials, Japanese corporations are more interested in dealing with U.S. universities than with Japanese ones.

Because the Japanese depend on access to U.S. technology in general and U.S. universities in particular to maintain their pace of innovation, some have proposed that the United States insist on reciprocityÄthat is, that U.S. companies be granted similar access to Japanese technology. But such reciprocity is unlikely to work. The Japanese want access to U.S. universities, but there is no equivalent interest among U.S. researchers in Japanese universities. U.S. interest centers on Japan's industrial design and manufacturing expertise, which Japanese companies have little incentive to share.

Rather than seeking reciprocity, the United States should focus on assuring that U.S. companies have access to the considerable Japanese market and on doing better at home. More federal R&D dollars should flow into civilian technology development. U.S. companies can no longer expect to find comfortable market niches where mass production is assured without competition. And greater priority should be given to collaborative relationshipsÄbetween universities, industry, and national laboratoriesÄthat address the key issue of making things well.

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