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Competitiveness: A Long-Enduring Problem

A gradual decay of our position of world leadership in manufacturing technology was apparent more than two decades ago when our annual rate of increase of labor productivity fell far behind those of Japan and West Germany. By 1980 these two countries were already competitive with the United States in many areas of manufacturing. When a team of Xerox engineers visited Japan in 1979, they discovered that competitors were manufacturing copiers at half of Xerox's production costs and with parts whose freedom from defects was better by a factor of 30.

Thus the United States was already in a weak position when the Federal Reserve initiated tight money policies to fight inflation. By early 1985 the value of the dollar had doubled against the deutsche mark. There was also a major increase against the yen. Between 1979 and 1985, unit labor costs in manufacturing in dollars increased 24 percent in the United States while decreasing 14 percent in Japan and 27 percent in West Germany. Between 1980 and 1985, U.S. exports of manufactures declined 19 percent, while those of Japan, Europe, and less developed countries increased 42 percent, 22 percent, and 88 percent, respectively. Simultaneously, U.S. imports increased, with a consequent manufactures trade deficit.

Since February 1985, the dollar has declined against the deutsche mark and the yen. Its value relative to those currencies in early 1988 was somewhat less than it was in 1980. However, the trade balance that existed in 1980 has not been restored. Among the reasons cited are the emergence of newly industrialized nations as competitors. In many items their technology and labor productivity is comparable to that of the United States, while wage rates are 10 to 20 percent of those here. Also, in 1980 the Latin American countries were borrowing in the United States and importing from it. Now they are trying to expand exports chiefly in U.S. markets to pay interest on their debts. A further drop in the dollar is widely considered to be inevitable, but that may not be enough.

There are indications that necessity awakened some companies to the desirability of learning lessons from the Japanese. For example, in 1981 Xerox announced a people-oriented strategy that included emphasis on quality, employee involvement, and decentralization of decision-making. By 1986 Xerox had achieved a great improvement in quality and had cut costs by a factor of 2. Using a similar approach and the just-in-time technique for parts, Harley-Davidson achieved a 45 percent increase in productivity, a reduction in inventory, lower absenteeism, and a 50 percent increase in market share.

Ralph Gomory, a senior vice president of IBM has written*

> Our most effective foreign competition to date has been characterized by
> - Tight ties between manufacturing and development;
> - An emphasis on quality;
> - The rapid introduction of incremental improvements . . . of a preexisting product; and
> - A tremendous effort, by those actually in the product cycle, to be educated on the relevant technologies, on the competition's products, and on what is going on in the world.

IBM has implemented those principles and has managed to be among the leaders in a series of cyclic incremental improvements that include going from memories of one bit per chip to a million bits per chip in 20 years. That kind of dramatic improvement is not potentially available in many industries. However, if the competitiveness of the United States is to increase in the near and intermediate term, there must be a never-ending search for incremental improvements in the procedures for producing existing products.

The federal government cannot successfully order industry to be more competitive. On the other hand, the government has long operated in a confrontational mode, with spotty exceptions. As the report of the National Academy of Engineering† has conveyed: ". . . government policies [should] be constantly reviewed to ensure that they not only achieve the desired social, political, and national security purposes, but also support—or at least not impair—our international competitiveness."—PHILIP H. ABELSON

*R. E. Gomory, *Bridge* **18**, 13 (Spring 1988). †"The technological dimensions of international competitiveness," a report to the Council of the National Academy of Engineering (Washington, DC, 1988), p. 8.