

Software is an important positive part of America's position in international trade. A study by the United States International Trade Commission (ITC) estimates that in 1987 almost 40 percent of U.S. software developers' revenues came from foreign sales.¹ Indirectly, computer software contributes to the efficiency of other businesses and manufacturers competing in international commerce.²

The global nature of the software industry must be recognized when considering domestic intellectual property protection. For example, U.S. treaty obligations under the Berne Convention, Universal Copyright Convention, and Paris Convention mean that domestic laws will protect foreign firms, along with domestic firms, in the U.S. markets. If U.S. law differs substantially from international norms of copyright and patent protection, U.S. software producers may find it difficult to have their claims for intellectual property protection recognized in foreign countries.

Intellectual property law is important to encourage and to protect U.S. works and inventions internationally. The United States is attempting to include intellectual property in the General Agreement on Tariffs and Trade (GATT) treaty and is engaged in bilateral negotiations as well. (App. B reviews mechanisms for international intellectual-property protection and looks at some issues concerning international competition and trade.)

As the software industry evolves on an international scale, intellectual-property issues will continue to grow in importance. Currently, the United States is in the forefront of software development. However, we must be sensitive to shifts in the world economy, such as the changes in the European Economic Community proposed for 1992. As global networks develop, hardware and software standards will also become more important.

Piracy abroad can reduce the economic incentives to invest in software development and can give rise to diplomatic and trade problems.⁴ Lack of adequate intellectual-property protection abroad makes it more difficult to protect U.S. works and inventions in foreign markets, while strong software protection in the United States benefits both foreign and domestic producers. Lack of protection might also complicate North-South technology transfer to less-developed countries (LDCs) and East-West transfer to Eastern Europe and the People's Republic of China. In some of these countries, commercial software piracy has become ingrained, making software companies less willing to make state-of-the-art software available.⁵ Many of the nations where commercial piracy is widespread are Third World countries, who may be trying to develop a computer industry of their own or who cannot afford to pay full price for software. U.S. producers, however, lose revenues through this piracy, and may be unable to develop legitimate markets in these countries.

¹U.S. International Trade Commission, "The Effects of Greater Economic Integration Within the European Community on the United States," July 1989, ch. 4, p. 39.

²As one commentator notes, "Information technologies are fast becoming the raw material of the global economy. . . [n]ew information technologies are changing the way the manufacturing sector conducts business just as radically as they are changing the character of the service industries. The manufacturing sector is relying more and more on services as inputs, including R&D, engineering, sales, accounting, finance, and even management." (Clarence J. Brown, "The Globalization of Information Technologies," *The Washington Quarterly*, winter 1988, pp. 90, 95.)

³Thus, strong U.S. laws benefit foreign competitors; as foreign software suppliers grow stronger, this may become more important. For further discussions of international conventions and a lengthier treatment of other international issues, see app. B.

⁴Worldwide, piracy for computer software and hardware is estimated to have cost producers \$4 billion in 1986 (this figure is based primarily on firms' own estimates of losses). (Estimate based on a study performed by the U.S. International Trade Commission, *Foreign Protection of Intellectual Property Rights and the Effect on U.S. Industry and Trade*, February 1988, table 4-1, p. 4-3.)

The International Intellectual Property Alliance estimated that software piracy in 11 "problem" countries amounted to \$547 million in 1988. (International Intellectual Property Alliance, "Trade Losses Due to Piracy and Other Market Access Barriers Affecting the U.S. Copyright Industries: A Report to the United States Trade Representative on 12 'Problem Countries,'" April 1989, p. viii.)

⁵For example, the People's Republic of China has no copyright law of its own (although it is currently drafting one with provisions for software) and is not a member of international conventions. One study sponsored by several industry groups has estimated that software piracy in the People's Republic of China cost U.S. developers some \$300 million in 1988. (International Intellectual Property Alliance, op. cit., footnote 4.)