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BOOK NOTE

TECHNOLOGY TRANSFER IN INTERNATIONAL BUSINESS

Ed. by Tamir Agmon[1] and Mary Ann Von Glinow.[2]
New York, New York: Oxford University Press. 1991.
Pp. 304. $34.95 (hard).

In recent years the emergence of the newly industrialized countries ("NICs") of Southeast Asia as well as the expanding economic reach of Japan have altered significantly the terrain of international business. Because of the increased competition from both the NICs and Japan, U.S. companies have been forced to re-evaluate their marketing strategies and to devise new business alliances in order to compete internationally. For the most part, these new strategies and alliances have involved the transfer of technology into foreign markets in which the U.S. companies are competing.[3] Technology transfer, thus, has become an important part of international business transactions. Indeed, *Technology Transfer and International Business* suggests that international business in this era is *about* technology transfer. This theme is advanced by the different contributors to the book, each of whom focuses on a particular industry or aspect of international technology transfer.

The book is divided into three parts. Part One explains the reasons for the recent increase in technology transfer in international business. In particular, foreign competition, together with increasing trade restrictions, have forced U.S. firms to manufacture their products in the foreign markets in which they seek to compete (pp. 8-14). Because these markets have increasingly included lesser developed countries ("LDCs") whose technological infrastructure is under-developed, technology transfer has become more necessary to bridge the gap (p. 91). Moreover, because these LDCs also allow other firms, namely those from Japan and the NICs, to compete in their markets, the U.S. firms, as well as their

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3. *See* DENIS GOULET, THE UNCERTAIN PROMISE: VALUE CONFLICTS IN TECHNOLOGY TRANSFER 7 (1989).

foreign competitors, are forced to transfer their domestic technologies to their foreign operations in order to help them remain competitive.

A second reason for the increase in technology transfer is that the pressures of international business force both U.S. and foreign companies to manufacture their products in locations offering the greatest competitive advantages, which in many instances are beyond domestic boundaries (pp. 70-74). For this reason, U.S. and Japanese firms have established subsidiaries and joint ventures in countries such as India, Brazil, Malaysia, and China to manufacture goods for global export.[4] Establishing such operations necessarily requires technologies to flow across countries.

Part Two examines the macro-organizational channels through which technology transfer is effected. As U.S. firms have become increasingly innovative and less risk-averse in their managerial strategies, there has been a trend towards international inter-firm cooperation (p. 121) One example that is discussed is the strategic alliances formed between firms of different nationalities engaged in the production of similar or even wholly diverse goods. In this type of "competitive collaboration" each company's participation spreads the costs and risks both of developing new technologies and of combining existing technologies to develop new products (pp. 123-25). These strategic alliances emphasize technology transfer, often in response to the severe competition present in today's global market.[5]

Moreover, both Parts One and Two discuss U.S. policy regarding technology transfer. In particular, U.S. policies have been restrictive with respect to allowing domestic companies to transfer their technology abroad (pp. 48-53). The general view of the book is that such restrictive policies are likely harm U.S. competitiveness. This is because such restrictive policies limit the ability of U.S. companies to compete against their foreign competitors, which are allowed to utilize more completely their domestic technologies in their foreign operations. Indeed, the editors suggest that government attempts to block technology transfer might not have any real effect, except of raising the costs of acquisition, because alternative technologies likely would be purchased from other foreign suppliers.

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4. *See* Brian O' Reilly, *Your New Global Work Force*, FORTUNE, Dec. 14, 1992, at 52.

5. *See* Howard V. Perlmutter & David A. Heenan, *Thinking Ahead: Cooperate To Compete Globally*, HARV. BUS. REV., Mar.-Apr. 1986, at 136 (describing importance of cooperative alliances in international business).

Different perspectives on technology and what constitutes its transfer have polarized the discourse on technology transfer for decades. The phrase "technology transfer" itself was coined by economists who, in seeking ways to bridge the gap in levels of development between the developed and under-developed countries, prescribed the acquisition by the latter of technology developed in the former.[6] Nevertheless, the term "technology transfer" has now come to embrace far more than that. "Technology" itself may be embodied in manufacturing processes and managerial know-how, and is not embodied in products only (p. 7). This broader definition recognizes the central role of education in technology transfer. A nation's or firm's ability to receive technology is dependent on its level of basic knowledge, which then determines its ability to put the technology to use and to develop new uses. The role of education in the process of technology transfer is particularly relevant for developing countries, since their pre-transfer knowledge base is usually insufficient for receiving and utilizing effectively the transferred technology (pp. 79-88).

Part Three of the book examines the practice of international technology transfer in the Pacific Rim. Seven independent studies examine the institutional and social environments in which technology transfer occurs in this region. Firm specific case studies demonstrate particular problems confronting U.S. firms in this region and offer practical suggestions to help firms compete more effectively in a different business culture. In examining the process of technology transfer in the Pacific Rim, it is clear that the process is defined mainly in terms of the goals that the firms or countries seek to achieve, as well as in the broader contexts of the economic and political alliances sought for strategic reasons.

In essence, technology transfer is an inexhaustible subject matter, whose complexity makes it difficult to neatly package for discussion. Indeed, there is an overwhelming amount of literature on technology transfer, ranging from purely academic research to market oriented studies focusing on the microeconomic aspects of technology transfer.[7] *Technology Transfer in International Business* integrates these perspectives, in a comprehensive and useful manner.

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6. *See generally* FRANCES STEWART, TECHNOLOGY AND DEVELOPMENT (1980).

7. *See* Howard V. Perlmutter & Tagi Sagafi-nejad, INTERNATIONAL TECHNOLOGY TRANSFERS GUIDELINES, CODES AND A MUFFLED QUADRILOGUE (1981).

One problem with the book, however, is the lack of clarity with which it defines the terms *technology* and *transfer*. *Technology* is defined by one contributor as being comprised of commodities, such as computer equipment and industrial goods (p. 8). Another contributor, however, defines technology more broadly as being the sum of knowledge, experience, and skill required to establish an enterprise that can manufacture and market a product economically (p. 132). Similarly, there is some ambiguity over the definition of *transfer*. *Transfer* in the legal context often implies the relinquishing of title to property by an act of the parties or by law. Accordingly, technology transfer would denote the relinquishing of title to technology through sale or other means. Nevertheless, within the context of international business, sale is the least used method of technology transfer. In the context of inter-firm alliances, for example, technology is sold rarely. While several contributors to the book do note that various macroeconomic factors, such as policy objectives, corporate laws, international regulatory systems, affect the choice of transfer, the actual types of *transfer* are not described clearly.

A few points are clear in the continuing discourse about the transfer of technology in international business. First, corporate globalization will continue to provide an impetus for technology transfer. With the growing importance of international trade to domestic economies and with the need to maintain a competitive edge in a global economy, technology will continue to play a major and indispensable role in international business transactions. The editors of *Technology Transfer and International Business* are correct in their assessment that the two processes, technology transfer and international business, operate for the same purpose, namely, securing economic advantage.

Second, the recent changes in international political relations have lessened the strategic-defense imperatives for restricting the transfer of technology. As the deregulation of technology transfer continues, technology as a factor in international business will be an increasingly prominent issue in academic, business, and government circles. Similarly, government investment in global research and development projects, concerns over environmental protection, and the rise of regional economic units will keep the subject matter of technology transfer at the forefront of economic, political, and social interactions for the foreseeable future.

Technology Transfer and International Business contributes to the collaborative efforts by private sector and academic institutions to

examine the nature of technology in defining commercial structures, particularly in the international economic sphere. It is indeed ironic that the publication of the book is itself a form of technology transfer, as it provides information that may be used to enhance the competitive abilities of firms engaged in international business.

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