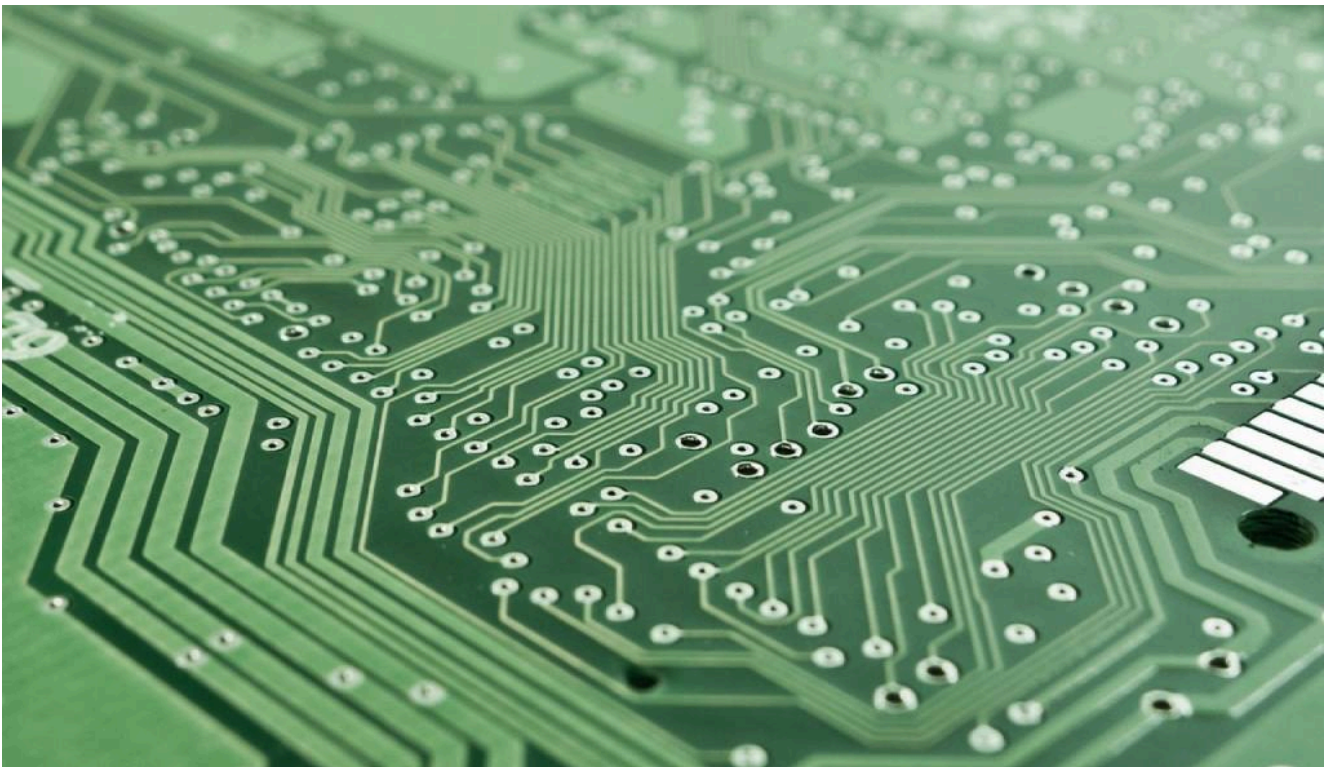


Trading technology: multinationals lead the way

How is technology transferred from a multinational's headquarters to its subsidiaries? "Contracting for the Transfer of Technology within Multinational Corporations: Empirical Evidence from Spain," sheds light on important considerations such as contracts, methods of payment and royalty rates.



September 1, 2005

The global spread of technology can ultimately improve nations' productivity and growth. Oftentimes, multinational companies are the ones that trade or carry technology across

national borders. And it's a big business.

According to the U.S. Bureau of Economic Analysis, in 2003, U.S. receipts related to international trade in disembodied technology amounted to \$48 billion. U.S. payments reached \$20 billion. Of these transactions, 75 percent of all technology exports and 80 percent of all technology imports took place between affiliated parties (i.e., a parent firm and its foreign subsidiaries).

To better understand exactly how multinationals trade technology with their affiliates, University of Navarra business administration professor Pedro Mendi, in collaboration with the IESE Anselmo Rubiralta Center for Globalization and Strategy, studied contractual arrangements between Spanish companies and their foreign parent firms. His research sheds light on specific considerations of the contracts, such as types of technology, methods of payment and royalty rates. Called "[Contracting for the Transfer of Technology Within Multinational Corporations: Empirical Evidence From Spain](#)," Mendi's paper demonstrates that multinationals play a critical role in the "international transmission of tacit knowledge."

The main findings of the paper can be classified into three parts. First, Mendi asks if affiliated companies are more likely than unaffiliated ones to trade know-how. The answer is yes: Affiliated parties — multinationals — are more likely to share "tacit knowledge" through internal transactions than unrelated companies. This conclusion, however, does not apply to codified knowledge, such as patents.

Indeed, Mendi's paper is the first on the subject to treat the differences between affiliated and unaffiliated companies. Generally speaking, affiliated transactions occur when the foreign licensor is either the parent firm of the affiliate, or when the licensor is a foreign affiliate whose parent firm is the same as that of the affiliate.

Mendi's second conclusion describes what determines the type of payment in technology transfers. He finds that multinationals typically schedule variable payments and rarely include fixed payments. Also, contracts that stipulate a longer duration are more likely to include variable payments than shorter contracts. This effect of contract duration on payments was also found within unaffiliated contracts, as shown in a previous work by the same author, published in the *Journal of Economics and Management Strategy*.

Another discovery is that multinationals adjust scheduled payments depending on the differences in corporate taxes between the source and the host countries. Tax considerations are especially relevant for multinationals, which have potentially more freedom and greater

incentives than unrelated firms to manipulate the parent and subsidiary's profits in order to minimize their taxes.

"Asymmetric information" is another factor that influences scheduled payments. What the term means is that one of the parties has better transaction-specific information than the other. For example, the licensor, who knows more about the technology to be transferred, might benefit from asymmetric information, while the licensee knows less. The closer the commercial ties are between the mother company and the affiliate, the more balanced the information tends to be.

The third and final conclusion of the paper determines the royalty rate of affiliated contracts. On one hand, Mendi finds that contracts with a longer duration can positively impact the royalty rate. On the other hand, higher corporate taxes in the licensor's country and more intense commercial ties between the source and host countries can reduce the royalty rate.

The study, which links multinationals to the spreading of technology, has an implication for public policy. Writes Mendi, "In industries whose technology has a significant tacit component, policies aimed at fostering direct investment from abroad will have a positive effect on productivity in the host country, via increased competition of local incumbent firms with subsidiaries of foreign firms, simply through knowledge spillovers."

www.iese.edu/insight