editorial

Perspective on government-funded innovations

Imagine the following comment evoked by an historical event: Samuel B. Morse had just demonstrated his new discovery, the telegraph. Among the enthusiastic observers is an executive from the Government agency that partially supported the experiment with $30 000. "Mr Morse, thank you for showing us the utility of your marvelous invention! Uh—if you wish, we'll be glad to grant you a non-exclusive license to use your discovery."

Were Mr Morse a contemporary inventor, the comment would not be improbable. There are some two dozen policies in force regulating the rights to inventions developed with even partial federal funding, as in the Morse case.

Congressman Ray Thornton has introduced legislation that would establish a uniform federal patent policy leaving rights with the inventor, contrary to the intent of most of the current policies.

Another person with a firm opinion about who should own federally funded inventions is Senator Gaylord Nelson, chairman of the Small Business Subcommittee and champion of antitrust legislation. With a keen eye for the opportunities that reduced competition can bring, the Senator made a classic bid for media coverage by convening his committee during the recent Christmas recess to "resolve" this issue. The topic of conversation—announced with colorful headline-hunting references to Santa Claus and the Tooth Fairy—was whether it is better to allow avaricious inventors to retain any rights in their government-funded discoveries or, by damning the rascals, to polish one's public image as a trust-busting defender of the abused consumer. As befits such an orchestrated event, the witness list was tightly controlled. The National Small Business Association, and the universities, and the research community can all be heard later. What we need now is impact! Who's going to produce media coverage to our liking if one of those X!%*$ universities is in here saying the government ought to be giving away invention rights!

Inventions that can and should be used, but are not used, are worse than useless; the costs associated with their discovery are wasted assets, and the consequences of their non-use are wasted opportunities. There are several reasons for non-use. One is that businessmen are reluctant to invest risk capital in the commercial development of unproven technologies unless, having won their gamble, they are assured of a reasonable measure of exclusivity in the marketplace. To take an analogy from the trademark field, who would spend millions of dollars promoting the mark "Coca-Cola" if *anyone* could market a soft drink under that name?

Universities are not unlike the US Government in the sense that they have no control over manufacturing facilities. Like the Government, they must transfer their inventions to the commercial sector if the inventions are to be used. Here the similarity ends, for universities are 600 percent more efficient than the Government in commercializing their inventions, principally because of their ability to grant exclusive licenses.

No one is suggesting that taxpayers do not have a right to own inventions produced at their expense. What is being suggested is that informed taxpayers would gladly exchange those stagnant assets for the new products, new jobs and increased tax revenues which private patent-based enterprises have traditionally lavished on our economy.

To give the gentleman his due, Senator Nelson is probably no less interested in new jobs, new products and new tax revenues than you or I. Unfortunately, he is mesmerized by the notion that patents as monopolies lead to that greatest of evils: industrial concentration (much worse, mind you, than tens of thousands of unused inventions).

Okay, we agree that concentration can be a problem, but we should be able to meet it, not even by relying on the anti-trust laws alone, but by tying a string onto every right that the inventing institution is allowed to retain. One false move and zap! The string has many strands, each one of which is known as a "march-in right." This idea is not new; the government has had this option for years on a limited scale. Senator Nelson claims, however, that these strings have rarely been pulled, and he's probably right. The question remains, can the Senator, or anyone, point out cases where the strings should have been pulled and weren't?

Next we suggest that he explain his philosophy more clearly. Recently he voted to permit the Government to acquire ownership of inventions made by private companies, whether large or small, during the course of a government-guaranteed *loan*, even if the loan is fully repaid to the lending bank, on time and with interest. If Senator Nelson's sense of equity dictates that the Government should own what the Government has paid for, however counterproductive to public interest, surely private industry should own what private industry has paid for, and invented besides.

This bill was passed before the conclusion of Senator Nelson's hearings, and before either hearings on Congressman Thornton's bill or the appearance of a long-awaited policy statement by the Administration on this very issue.

It would be in the best interests of the country if no more precipitous action were taken until all interested parties have been heard.

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Technology transfer

Dr. Nolan B. Sommer, senior vice president of American Cyanamid, spoke late last month at Georgetown University in Washington, D.C., on some of the problems facing multinational companies today. Here, verbatim, is part of what he had to say.

A major issue of broad importance to the international community concerns the transfer of technology across national boundaries. It has become a controversial subject largely because of its effect on a variety of special interests. For example, the Third World and the industrialized countries take differing views within the context of the North-South dialogue; U.S. multinational companies—who develop and apply a tremendous amount of technology—and the host governments debate about the conditions under which innovation is to be rewarded, safeguarded, and exported; and U.S. labor and certain academic critics question the benefits to the U.S. economy of the flow of technology to other lands.

Quite a few charges and misunderstandings have been generated over the years, essentially over the question of who is helped or harmed by technology transfers.

It is well to remember that technology transfer is not a new phenomenon. We have been engaged in sending and receiving foreign investment and the scientific advances tied to it for generations. And through those years the world has benefited—including the United States. The process is inexorable and will continue as long as both the sender and receiver profit or benefit.

The developing countries recognize that the technology developed by western industries can speed their economic and social development. Consequently, they have pushed for rules that would accelerate that flow, rules designed to "liberate" technology from the multinational companies who develop and implement it, making it available worldwide. Unfortunately, such an approach can be destructive to the aspiration of the less developed countries for greater industrial and social development and dangerous to the continued growth of all nations.

First and foremost, technology transfer is a voluntary process; it cannot be compelled, although it can be retarded or halted. Second, to the extent that the less developed countries try to devise shortcuts to the acquisition of high technology, there is the danger that traditional protections afforded to research and development, namely, patents and trademarks, will be weakened. And finally, technology transfer involves much more than the mere passing of research results and sophisticated equipment from a multinational company to a host country. Rather, it encompasses the overall package of management skills, investment and innovative techniques, as well as access to developed markets that are necessary to fully exploit technology. The host country must be ready to accept it.

Based on these considerations, therefore, I would make the following observations; the first to domestic critics, the second to the developing nations.

To those in the United States who argue that the transfer of U.S. technology abroad is inimical to the domestic economy, I would point out that receipts by U.S. companies from royalties and fees are at a level of about $4 billion a year—more than nine times the amount paid out in royalties and fees by U.S. firms. A U.S. Chamber of Commerce estimate of the total value of production associated with these receipts is close to $85 billion. This translates into jobs and economic growth. In fact, all of the available evidence we have shows that the export of technology generates more employment in the U.S. than is lost as a result of production abroad that uses U.S. technology.

To those in the less developed countries who want to appropriate the technology of the multinational companies I would argue that technology transfer must be a voluntary act, one which is mutually profitable to both the transferor and the transferee. If forthcoming guides for technology transfer no longer safeguard such "intellectual property" nor make it profitable to export it, corporations will neither develop nor transfer the fruits of their research. What happens then to economic development and the quality of life in the Third World? □