

The Bayh-Dole Act: A guide to the law

The transfer of new technology from university laboratories to the private sector has a long history and has taken many different forms. The current national emphasis on this activity, however, can be dated to the 1980 enactment of P.L. 96-517, The Patent and Trademark Law Amendments Act, more commonly known as the Bayh-Dole Act, and amendments included in P.L. 98-620, enacted into law in 1984.

Background

Technology transfer--the transfer of research results from universities to the commercial marketplace for the public benefit--is closely linked to fundamental research activities in universities. Although a handful of U.S. universities were moving science from the laboratory to industrial commercialization as early as the 1920s, academic technology transfer as a formal concept, did not originate until 1945, based on the report of Dr. Vannevar Bush, Director of the Office of Scientific Research and Development. It was at this time that the National Institutes of Health (NIH), the National Science Foundation (NSF), and the Office of Naval Research (ONR) were created to fund basic research vital to the national interest.

In the 1960s and 1970s, there was much study and debate surrounding federal patent policies. A major concern was the lack of success by the federal government in promoting the adoption of new technologies by industry. There was no government-wide policy regarding ownership of inventions made by government contractors and grantees under federal funding. Inconsistencies in policies and practices among the various funding agencies resulted in a very limited flow of government-funded inventions to the private sector. In 1980, the federal government held title to approximately 28,000 patents. Fewer than 5% of these were licensed to industry for development of commercial products.

This problem was due, in part, to restrictions imposed on the licensing of new technologies and reluctance on the part of the agencies to permit ownership of inventions to vest in universities and other grantees. The government would not relinquish ownership of federally funded inventions to the inventing organization except in rare cases after petitions had moved through a lengthy and difficult waiver process. Instead, the government retained title and made these inventions available through non-exclusive licenses to anyone who wanted to practice them.

As a result, companies did not have exclusive rights under government patents to manufacture and sell resulting products. Understandably, companies were reluctant to invest in and develop new products if competitors could also acquire licenses and then manufacture and sell the same products. Accordingly, the government remained unsuccessful in attracting private industry to license government-owned patents. Although taxpayers were supporting the federal research enterprise, they were not benefiting from useful products or the economic development that would have occurred with the manufacture and sale of those products.

In 1980, however, legislators and the administration concluded that the public would benefit from a policy that permitted universities and small businesses to elect ownership of inventions made under federal funding and to become directly involved in the commercialization process. This new policy would also permit exclusive licensing when combined with diligent development and transfer of an invention to the marketplace for the public good. It was understood that stimulation of the U.S. economy would occur through the licensing of new inventions from universities to businesses that would, in turn, manufacture the resulting products in the U.S.

Conclusions

On a nation-wide basis, the results support the conclusion that the Bayh-Dole Act has promoted a substantial increase in technology transfer from universities to industry, and ultimately to the public. Certainty of title to inventions made under federal funding is perhaps the most important incentive for commercialization. Implementation of uniform patenting and licensing procedures, however, combined with the ability of universities to grant exclusive licenses, are also significant ingredients for success. This combination of factors led to a tremendous acceleration in the introduction of new products through university technology transfer activities.

Certainty of title to inventions made under Federal funding has one other significant benefit—it protects the right of scientists to continue to use and to build on a specific line of inquiry. This is fundamentally important to research-intensive institutions because of the complex way in which research is typically funded, with multiple funding sources. The retention of title to inventions by the institution is the only way of ensuring that the institution will be able to accept funding from interested research partners in the future. This is a critically important benefit of the Bayh-Dole Act that is not widely understood.

As Vannevar Bush foresaw, enormous benefits to the U.S. economy have occurred because of Federal funding of research. These benefits have been significantly enhanced by the adoption of federal policies encouraging technology transfer. Such policies have led to breathtaking advances in the medical, engineering, chemical, computing and software industries, among others. The licensing of new technologies has led to the creation of new companies, thousands of jobs, cutting-edge educational opportunities and the development of entirely new industries. Thus, the Bayh-Dole Act continues to be a national success story, representing the foundation of a successful union among government, universities, and industry.