

Remarks on Technology Transfer

Constance Lee Menefee/1999

DEFINING TECHNOLOGY TRANSFER

Technology transfer can refer to a formal process of transferring new discoveries and innovations, resulting from research in universities and other publicly funded research institutions, to the commercial sector. Or, it can describe a less formal process of diffusing technological innovation throughout the business community through a combination of formal and informal networks.

The speed and efficacy of either approach depends in part on the legislative climate, the sophistication of bankers and other lenders in the community, and the strength of business associations, alliances and networks throughout the academic, public, and private sectors.

Patenting and licensing of inventions is one of the key ways innovations succeed in the marketplace.

Examples of formal programs funded, at least in part, by public monies: the Advanced Technology Program(ATP), the Small Business Innovation Research (SBIR) program, Cooperative Research and Development Agreements (CRADAs), high-tech business incubators, agencies associated with state departments of development, and organizations such as the Great Lakes Industrial Technology Center, and the National Technology Transfer Center.

UNIVERSITIES AND TECHNOLOGY TRANSFER

The Association of University Technology Managers tracks indicators of technology transfer activity. According to their most recent figures (1996), university tech transfer adds more than \$21 billion dollars to the economy and supports 180,000 jobs each year.

The success of university tech transfer can be traced back to passage of the 1980 Bayh-Dole Act which enables universities, non-profit research institutes, and small business to own and patent inventions developed under federally-funded research programs.

Prior to 1980, fewer than 250 patents were issued to U.S. universities each year. In the late 1990's, the AUTM annual survey reported that universities average almost 1,500 patents each year. The level of activity is increasing, too. Between FY 1991 and FY 1995, invention disclosures increased by 29 percent and new patent applications increased by 53 percent.

The process is also becoming more cost-effective: in FY 1991, \$8.5 million in sponsored research expenditures were invested per new patent application; in FY 1995, this amount decreased by 18 percent to \$7.2 million.

The General Accounting Office (now the Government Accountability Office) reports that universities have one, or a combination, of four basic types of programs that administer inventions resulting from research: centralizing licensing office (for example, Massachusetts Institute of Technology), decentralized licensing office (for example, Johns Hopkins), independent foundation (for example, Wisconsin Alumni Research Foundation) and contractors (one of the largest such contractors is the Research Corporation Technologies in Tucson, Arizona.).

Some of the universities surveyed by the GAO assisted with raising capital, helped form start-up companies or took equity in lieu of royalties. Although none of the universities surveyed had specific policies in place to give preference to small companies when licensing inventions, most of the inventions were, in fact, licensed to small businesses.

SOURCES:

Association of Technology Managers,
[URL: http://nhse.cs.rice.edu/autm/](http://nhse.cs.rice.edu/autm/))

For a listing of programs nationally, see: *Partnerships: A Compendium of State and Federal Cooperative Technology Programs (1995)* Christopher Coburn and Dan Berglund. Battelle Memorial Institute.

Technology Transfer: Administration of the Bayh-Dole Act by Research Universities. General Accounting Office. GAO/RCED-98-126.