

Financing University Technology Transfer Offices

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Just as there are many different models for transferring university research and Intellectual Property Rights (IPR) to commercial application, there are many different models for funding the Technology Transfer Offices (TTOs) responsible for managing an institution's technology transfer process. This briefing illustrates several alternative models for funding TTO operations, by examining practices from several different countries, presented in alphabetical order.

AUSTRALIA

In Australia, there is no specific Government funding for TTOs, and each university is responsible for financing its own technology transfer activities. While Government funding for research requires universities to have IPR policies, there is no equivalent to the U.S. Bayh-Dole Act to mandate how IPR is commercialized. Most universities claim ownership of IPR and share benefits with inventors; most have recognized their obligation to commercialize IPR. In this relatively unregulated environment, various models have emerged in Australia. The two main models are (a) the formation of a separate company, and (b) the establishment of a university TTO.

In the company model, the company generates cash flow through a variety of related business activities such as consulting, conference management and professional development courses, with the proceeds enabling the company to support the university's technology transfer function. In other cases, the university may provide seed funding to support company operations.

In the university office model, the university provides funding directly to the TTO, which is then regarded as one of the central administrative functions of the university. The adequacy of the funding is very much dependent upon the support of the university's central administration and the ability of the TTO to demonstrate the benefits that it brings to the institution.

FRANCE

TTOs in France often are more focused upon Collaborative Research Agreements ("CRA") than in IPR licensing. In fact, IPR licensing and commercialization are for most universities new activities added following the "Law on Innovation" of July 12, 1999, and the "Recommendations for IP Policy" issued by of the French Ministry of Research in 2001.

Most French universities are public institutions. Therefore, a TTO receives funding by the dedication of a portion of the funding provided to the university by the French Government. These dedicated funds are largely symbolic (€15.000 to €40.000). However, the autonomy of each university gives it the authority to allocate its budget at the sole discretion of its governing board. Therefore, current practice for supporting TTOs have evolved into two basic models:

- If the TTO is part of the university, its budget is determined by the university's board, and may be supported in part from (1) a percentage of the amounts received

from CRAs, and (2) a percentage of revenues received from IPR licensing, if any.

- If the TTO is operated as an affiliated subsidiary of the university, support is solely provided from a percentage of all incoming revenues, from either CRAs or IPR licenses.

INDIA

There is no formal legislation for organizing and financing TTOs in India. However, in the last 10 years, most technical universities and research institutes in India independently have established organizations for industry-academia interface. Such organizations perform many of the technology transfer and IPR commercialization activities typically assigned to TTOs in other countries. Some of these autonomous entities were initiated with seed funding provided from State Governments or the Central Government. For instance, the Indian Institute of Technology Delhi has established a "Foundation for Innovation and Technology Transfer (FITT)," with a corpus grant equivalent to \$400,000USD from the Indian Ministry of Human Resource Development. In other cases, the organizations were formed by funds appropriated by the governing board of the autonomous university or research institute.

In all cases, such support is provided for a limited time only as these organizations are expected to attain self-sufficiency, working as "profit centers" with a well-managed business plan. Income may be derived from service charges levied for industrial consultancies and other related business-development activities, as well as from an allocation of a percentage of the royalty income for technology transfer transactions.

Recent attention has sought to link research institutions with Small and Medium Enterprises (SMEs). The Government has funded Science and Technology Entrepreneurship Parks (STEPs), "Industry Interaction Cells," and Technology Business Incubators (TBIs), major conduits for transfer of technology from academic institutions to SMEs. In all cases, the organizations are expected to achieve self-sufficiency after initial seed funding from the Government.

JAPAN

In 1998, the Japanese Government enacted legislation for creation of government-approved university TTOs. Once a TTO is approved, the Japanese Government provides two-thirds (2/3) funding for its operating cost (without the remuneration of patent attorney expenses) to the equivalent of \$300,000USD per year for a period of five (5) years. At the end of the five-year period, the TTOs are expected to be self-sufficient from the income streams resulting from commercialization. Upon realization that the expectation of self-sufficiency in five years cannot be achieved, the Japanese Government currently is considering a new funding system for government-approved TTOs. Furthermore, in 2004, Japanese law will give all national universities independent legal status so that they may participate in TTO initiatives. There are 27 approved TTOs in Japan.

Finally, some Japanese TTOs found that the funding provided by the Government was not sufficient to support their operations. These institutions created associated for-

profit companies to assist in start-up companies for the commercialization of university R&D results, and asked faculty members to invest in the company. Thus, several faculty-owned companies associated with university TTOs assist in commercialization through the start-up companies. This step also provides incentive for faculty members to disclose their inventions, as they have a personal stake in the commercialization company.

PEOPLE'S REPUBLIC OF CHINA (PRC)

In 1998, only Tsinghua University and Peking University in Beijing operated TTOs. Today, each of the major research universities operates a TTO, originally supported by the PRC Government from a portion of the general Government appropriation to the institution. However, as China moves from a state-planned economy to more of a market-based economy, this TTO funding model is changing. Most of the TTOs today are operated as associated private companies, solely owned by the university, and initially supported with university funds. As private companies, these TTOs are very active in business development services, such as incubators, assistance in preparing business plans, assisting in start-up company requirements, investing in new spin-off companies with university-based venture funds, and so on. Most often, the TTOs negotiate for significant equity shares in new university start-up companies, and may wholly own some start-up companies. Eventually, the TTOs are expected to become self-sufficient from the equity holdings, as well as from income received from licensing and other related technology transfer activities.

SOUTH AFRICA

South Africa has identified government support for research & innovation as a key part of the national economic development strategy. In August 2002, the government approved a new national R&D strategy; discussions currently are in progress to develop plans for implementing the new strategy, including national funding for technology transfer. Although funding for commercialization activities and patents is critical, a major capacity-building and development effort is also underway. This effort will build upon embryonic capabilities that exist in a few universities and public research councils.

South Africa is seeking to build strong linkages between its emerging technology transfer system and its research system, to build a new culture of innovation in the research community and to ensure that all benefits of research (including the non-commercial or social benefits) are also understood and exploited. To support this integrated approach, the Southern African Research & Innovation Management Association (SARIMA) was formed in 2002 to assume the lead role in national efforts to build the research & innovation capability. SARIMA is supported by the Government, participating academic institutions, and U.S. and European philanthropic donors.

UNITED KINGDOM (UK)

Following the UK government's "White Paper on the UK's Competitiveness" in 1998, many policy initiatives and government funding streams to stimulate the links between the science base in universities and UK industry were established, significantly

changing the way in which UK universities organize their technology transfer activities. While in the past many of the large universities created separate business units to manage and commercialize IP (University Companies or "UNICOs") the majority now have integrated offices within the university. A common model emerging is one where the technology transfer office and the sponsored research office are combined. The growth and development of such offices has been stimulated by direct government funding to universities for this "third stream" activity, through the Higher Education Innovation Fund in England and the Knowledge Transfer Grant in Scotland. While these development funds have been subject to competitive bids in the past, they are now distributed through "formula funding" primarily based upon research capacity and earnings.

UNITED STATES OF AMERICA (U.S.)

No government funding for TTOs is provided in the U.S., and there are no national universities. However, the Bayh-Dole Act of 1980 provides the legal basis for TTO funding. The Act states that income recorded from commercialization of government-funded research results can be utilized for only three purposes: (1) to fund the administration of the technology transfer function (TTO); (2) to provide a share of income to the inventor as an incentive to participate in technology transfer; and (3) to support education and further R&D in the institution.

The Act did not specify the percentages to be allocated for these three purposes; each university can determine how to allocate its commercialization income. In implementing the Act, most institutions set aside a percentage of the income stream to fund a TTO; in general, allocations for TTO operations range from 10% to 25% in U.S. universities.

Typically, after adopting a university policy to allocate a percentage of commercialization income to support the TTO, the university directly subsidizes the TTO from its internal sources during the first years of operation. Then, as income is realized from license agreements, the subsidy required from the university for TTO operations is reduced over time. Eventually, the institution expects that the allocation of income to the TTO will eliminate the need for direct university subsidy. It is often stated in the U.S. that 8-10 years are required for a TTO to become self-supportive from the allocated income. In a few rare cases, a TTO became self-sufficient early in its history from a project that immediately generated a large stream of income.

These examples demonstrate that TTO funding models vary from country to country, and are developed to fit the cultural, political and financial situation in each country. One theme is present in all models: the funding scheme is targeted to provide support to TTOs at the level of the individual research institute. Two additional themes occur in most but not all of these examples: (1) the TTO is allocated some portion of the income stream from commercialization of the university IPR for its operations, and (2) eventually, the TTO is expected to become self-supportive from this allocation of income and/or from other related income-generating services.