

## IP/Technology Transfer

Published online: 25 July 2005, doi:10.1038/bioent869

### ▼ Utopia, karma, and reality: three views on sharing resources among multiple institutions

**Michael J Pratt<sup>1</sup>, Christopher M Harris<sup>2</sup>, Abigail A Barrow<sup>3</sup> & Michael Villalobos<sup>4</sup>**

Michael J. Pratt is at Boston University, 108 Bay State Road, Boston, Massachusetts, 02215, USA. e-mail: [mpratt@bu.edu](mailto:mpratt@bu.edu)

Christopher M. Harris is at the University of Virginia Patent Foundation, 250 West Main St., Suite 300, Charlottesville, Virginia 22902. e-mail: [cmh7k@virginia.edu](mailto:cmh7k@virginia.edu)

Abigail A. Barrow is at the Massachusetts Technology Transfer Center, One Beacon Street, 28th Floor, Boston, Massachusetts, 02108, USA. e-mail: [abarrow@umassp.edu](mailto:abarrow@umassp.edu)

Michael Villalobos is at Purdue University, 401 N. Grant Street, Lafayette, Indiana, 47907, USA. e-mail: [mjvillalobos@purdueresearchfoundation.org](mailto:mjvillalobos@purdueresearchfoundation.org)

**Startup managers often find themselves interacting in parallel with multiple technology transfer officers. Organizing these collaborations is easier said than done, so we asked four leading authorities how to go about it to enhance the chances of turning a licensed invention into a commercial success.**

The Technology Transfer Office (TTO) at a research institution is charged with protecting, assessing the market and market value of and licensing inventions to corporate entities. All of these activities require a substantial investment of time and money that must be recovered by the TTO. No matter the size of a given TTO, all offices must perform essentially the same administrative functions, and regularly market technologies to the same companies and industries. Market analysis and commercial intelligence research is often duplicated.

If TTOs could work together proactively, and share resources and knowledge, then technology transfer could be more efficient for everyone. There are varying views on the effectiveness of a collaborative approach: a utopian view that hails the positive outcomes of collaboration, reality that informs us that collaborations require hours of work and the requisite funding, and a karmic view that reminds us that sharing information has both positive and negative consequences depending upon the manner in which it is shared and how it is eventually used. Here we describe several ways in which collaborative efforts can be organized to help TTOs more effectively commercialize their technologies.

### Collaboration models

In the field of technology transfer there are several forms of collaboration among nonprofit research institutions. The inter-institutional agreement (IIA) is a reactive agreement that is implemented subsequent to the creation of an invention when institutions realize that there are inventors from each institution involved. These are effective in managing inventions, but in most cases they are not used as collaborative mechanisms to proactively share resources and accelerate commercialization.

A collaboration agreement is usually associated with a large federal grant shared among multiple institutions. These agreements anticipate jointly owned inventions and function much like an IIA, dictating the terms of invention management. These are both very formal and reactive relationships as they are the result of established research collaborations.

Proactive relationships are scarce, and can be grouped in three categories: critical mass, regional and topical. Critical mass relationships are driven by the need for technology transfer resources at an institution that either has no technology transfer office, or has one that is understaffed. Regional partnerships are usually less formal and are driven by local technology-based economic development. Topical partnerships group inventions by technology area in hopes of creating a better package of technology, and making better use of established corporate contacts.

Critical mass relationships are typically formed between an underserved institution and a well-developed and well-staffed TTO at another

institution. The well-staffed TTO outsources its services to the underserved institution in return for either revenue sharing or fee for service (such relationships include MIT-Whitehead Institute, UVA Patent Foundation-College of William & Mary).

Regional partnerships are usually informational in nature, focusing on professional development or responding to legislative inquiries rather than performing technology transfer in a communal fashion. Examples of regional partnerships include the Massachusetts Association of Technology Transfer Offices (MATTO), Massachusetts Technology Transfer Center (MTTC) and The Academic Licensing Community of Virginia (ALCOVe).

Topical partnerships hold the most potential for commercial impact, but they are the most labor intensive to organize. Compiling a searchable database of all 16,000 inventions made each year at US nonprofit institutions would be quite an undertaking, but would also be very useful to a corporate technology scout.

To some degree, this database already exists at the US Patent & Trademark Office; the pursuit of a patent application is publicized 18 months after its filing. However, the drawback to this mechanism is that not all technologies are patented. In many cases the technology has been licensed or pursuit of commercialization by the TTO has been abandoned within 18 months of its creation. Commercial web portals exist to showcase technologies, but the databases are not comprehensive. Unfortunately, nonprofit research institutions are less active in the area of proactive topical partnerships. An exception is the Public Intellectual Property Resource for Agriculture (PIPRA), an initiative devoted to making agricultural technologies available to the developing world, but these goals are more humanitarian than commercial.

### **Making partnerships work**

So where do we go from here? The reality is that collaboration requires financial resources and stakeholders to initiate and maintain activity. Critical mass partnerships require financial incentives, but perhaps more importantly, require an overriding natural synergy between the two organizations (close proximity, shared faculty appointments, shared facilities).

Unfortunately, there are many research institutions that could benefit from a technology transfer operation, but do not have such services available or the benefit of a larger neighbor that is willing to take on the responsibility.

Regional partnerships require little overhead and can be very effective at organizing technology transfer services for local industry. Massachusetts is a good example of a state that has done much to enhance technology transfer in its region. MATTO is an informal gathering of 33 technology transfer offices within the state. The organization meets regularly, holds professional development seminars and maintains a modest website. It has even spawned the creation of a very informal networking group—the Intellectual Property Underlings of Boston that enables early career technology transfer professionals to share experiences. MATTO is organizational and informational in nature, and minimal costs, such as the website, are borne by a couple of member institutions.

In 2004 the Commonwealth also launched MTTC, a state funded effort to enhance technology transfer. This has enhanced MATTO's efforts and enabled it to transform itself from an informational organization to one that is activity based. MTTC has resources for organizing various regional events around selected emerging technology fields, as well as commercialization education programs for researchers and networking events with local companies. It has furthered the causes of MATTO and enhanced the offering to local industry without disrupting the informal and informational spirit that created MATTO.

In the long run these organizations will benefit the region as the nonprofit research institutions will be more accessible to local industry, interactions between local industry and academia and between the various technology transfer offices will increase, hopefully resulting in some strategic information sharing. MTTC's initial programs have been well attended and there is considerable corporate and private investor interest in using MTTC to increase their links to a wider variety of Massachusetts-based institutions.

### **An idea before its time?**

The financial drivers and stakeholders for topical partnerships are less clear. Individual corporations are not likely funding sources for these activities, for obvious competitive reasons. As such they are reticent to share strategic technology scouting initiatives and would hesitate to fund an effort that could benefit their competitors.

Industry councils such as the Biotechnology Industry Organization (BIO) are neutral parties and do perform this aggregating role to some extent, but these types of organizations do not exist in every emerging field. The Association of University Technology Managers (AUTM) or the Licensing Executives Society are two organizations involved in this field that could provide guidance and forums for topical partnerships, perhaps partnering with foundations for financial support and access to a community of stakeholders.

Imagine a portal devoted to breast cancer technologies organized by AUTM and funded by a breast cancer foundation that not only contained updates on research initiatives, but provided collective analysis on markets, investors and new technologies available for license. Significant efficiencies

could be achieved if technology transfer professionals donated market research reports to these sites for the benefit of the community, a self-assembling encyclopedia (like Wikipedia) of sorts for technology transfer, but maybe TTOs aren't ready for Utopia yet?

### **Take-away messages**

In conclusion, multi-institutional partnerships in technology transfer have already proven useful in some cases and hold considerable promise. They have the potential of enhancing technology transfer and accelerating the introduction of new technologies. For this to happen there must be an explicit acknowledgment by administrators at nonprofit research institutions that technology transfer is an important component of economic well-being.

Institutions must be motivated to work across institutional barriers towards the greater good of commercialization, funding organizations (foundations, industry councils) must recognize the benefit of stimulating these partnerships and someone has to step forward and invest time to do the work.

Investment by a specific health agency in the development of a publicly searchable database of all inventions related to their disease could set an example many others would follow. The adoption by AUTM of standard database fields to make it easier to exchange or merge the existing databases of individual institutions could also spur the creation of larger and more useful technology portal sites. AUTM could also be a more active promoter of local continuing education and networking for professionals in the field alongside its annual conference and basic training programs.

Finally, if programs such as MATTO and the MTTC are seen to be successful, then it is also likely that other regional or state economic development agencies will decide to promote and, more importantly, fund similar activities.

**SPRINGER NATURE**

© 2019 Nature is part of Springer Nature. All Rights Reserved.

partner of AGORA, HINARI, OARE, INASP, ORCID, CrossRef, COUNTER and COPE