

**MANAGING INTELLECTUAL PROPERTY FROM
MULTIPLE FOREIGN UNIVERSITIES**

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University Technology Licensing is an Engine for Innovation

There has been close collaboration between the federal government and U.S. research universities since state universities began. They focused on agricultural research. During World War II universities such as MIT played a role in defense research. The University of Michigan conducted research on radar. The U.S. Defense Department stills use university research.

In the 1980's, U.S. law changed and allowed universities to take title to research performed in their laboratories sponsored in whole or part with government money to allow universities to license their technology to industry.

Universities Create Breakthrough Technology

U.S. universities became a source of new drugs and medical devices. Approximately 40% of all new drugs and medical devices came from research done at universities and licensed to the company.

Drugs and Pharmaceuticals represent the largest technology licensed to industry. Most all major pharmaceutical companies have university licensed technology. It is very common for the pharmaceutical industry to recruit university scientists to work for the licensed company.

The high tech industry is licensing more university technology. At Stanford, it is common for the professor or grad student to join a company that licenses their inventions – professors take a sabbatical. Many major high tech companies also sponsor university research.

University and Industry Technology Partnerships are Good for Society

U.S. universities contribute \$50 Billion to the U.S. economy by creating jobs based on its research. New medicines, communications, foods, and entertainment are the results. For instance, Yamaha licenses the basic technology for its music synthesizers from Stanford.

Universities are a good place to create new ideas and industry has the business skills and resources to bring products to market. The most important business skill is management.

Technology Licensing Produces 125+ Billions Annually Worldwide

Technology licensing is a big business. It is estimated by the Licensing Executive Society that annual licensing revenues are at least \$125+ Billion and growing. University licensing is approximately \$2 Billion and growing. Part of the growth is from foreign university licensing programs. Universities give the inventors a portion of the royalties (25% - 33%) and use the other portion to support department research and the school. Some funds are retained for licensing operations.

Very few inventions make a lot of money. The exceptions are the genomic mouse (Stanford) and music synthesizers (Stanford). Besides royalties to the university, the main value is having industry make the technology available to the public.

U.S. University Technology Licensing Contributes to the U.S. Gross National Product

The Association of University Technology Managers estimated that technology license by universities to industry accounts for 300 plus new products every year.

More importantly, university research is the spark for new industries. The telecom revolution was sparked by research funded by the Defense Department much of which was performed at universities. Modern genomic medicine came from university labs as have many

vaccines and drugs. The Archimedes project is yet another example of creation of a new industry to serve the public with intent based devices to give easy access to technology.

Here are examples of some successful licenses resulting in new products.

- **StormVision™** - improve airport safety.

It is a commercially available tool based on FAA funded research at M.I.T. Lincoln Laboratory which predicts the motion of storms. It is licensed to weather services, TV stations for local storm broadcasts.

- **Taxol – Cancer Therapy.**

The synthesized molecule was invented at Florida State University and Virginia Tech University and licensed to Bristol Meyers for the treatment of ovarian and metastatic breast cancer.

- **Lycos® - Search Engine.**

It is an early search engine developed by Carnegie Mellon University and formed the basis for the Lycos® Network.

- **Google – Internet search engine.**

It was invented by two Stanford University graduate students in computers science doctoral programs.

Foreign Universities Are Also Creating Valuable Technology

The Archimedes Project is a great example of the collaborative research being performed at foreign universities. Foreign universities are increasing commercializing their technology and will increase in importance to their countries economy as experience is gained in technology transfer.

How Can Universities Jointly Commercialize Research?

When U.S. universities first began to recognize that they had competing technology, they fought over rights. Stanford and the University of California (Berkeley) claimed to be the first to invent the genetic mouse. They fought in the U.S. Patent and Trademark Office over who was the first to invent it and therefore who owned the patent. They settled the dispute and jointly licensed the technology. The royalties to Stanford were approximately \$25M per year. If they had continued to fight, it would have cost million of dollars and neither one could license the technology.

The best way for universities to license competing or complementary inventions is to do so jointly. Universities should assemble all of the rights needed to practice the technology and provide either a single or packaged license with one royalty structure.

Industry Licensees Want to Negotiate with a Single Licensor (Owner)

If it is too difficult to license an invention, industry will not. The difficulties include negotiating with several licensors (owners) with separate patents having to negotiate royalty stacking provisions to cap overall royalties, financially supporting multiples patent procurements and maintenance with multiple law firms and dealing with multiple inventors.

It is the KISS principal as we say in the U.S. – **“Keep It Simple Stupid”!**

Patent Pools Are One Way to Jointly License Technology

Patent pools collected patents under single management. In the case of universities, they must maintain ownership. The pool is the right to grant licenses. It is a one stop licensing source.

One example of an existing patent pool is the MPEG LA patents for digital video, set-top boxes, DVD, TV receiver/decoder, personal computers, etc.

Patent Pools Require U.S. Government Approval to Avoid Antitrust Charges

Patent pools can be illegal in the U.S. if they block competition. They can be pre-approved by the Department of Justice if they meet certain conditions. One is open licensing.

Licensing Agent May Act As Single Source for Multiple Licensors

A single licensing agent is another way for multiple licensors to offer a single licensing source. The agent could be the licensing office of one of the universities, such as Stanford or a commercial licensing agent. It is important to use an agent that will devote the necessary resource to market the licenses.

Typically, each licensor agrees upon a single license format, same license terms, a royalty rate and a stacking cap (maximum total royalties).

Licensing Issues

Strategy

There are multiple considerations in a licensing strategy. It is an exercise in creating a business model. Licensees need to be identified and the licensing marketing program established.

Part of creating a licensing model is to determine the main license points such as whether the license is exclusive (to one party), non-exclusive (more than one party), field of use (specific products) and geographic limitations (where). The more that a license is made specific, the more potential licensees and possibly more royalties.

Licensing Issues

Inventorship

The U.S. grants patents **only** to inventors. Inventors may assign (transfer) those rights. Corporate and universities inventors assign those rights to their employer. If a person who is not an inventor applies for a patent and receives it and he knowingly claimed to be an inventor, the patent can be invalid. This is very important in universities because there is confusion between who made an invention and who contributed to research papers. The standards are different. A person may be listed as a contributor to a research paper, but not be an inventor of the same technology. An inventor must make an “inventive step” as claimed in the patent. That means create something “new” and “useful”. Other countries are not as stringent

on correctly identifying inventors. If inventions are made at foreign universities and U.S. patents are applied for, correct inventors must be named.

Licensing Issues

Ownership

Inventors own their inventions in the U.S. As previously stated, they can be assigned to their company or university.

It is a common mistake in U.S. licenses to decide that joint inventors jointly own a patent. U.S. patent owners may do anything that they wish with a patent without accounting to other joint owners including licensing for royalties or even sale of their interest. It is critical that if there are joint inventors from different universities, the ownership of resulting patents be decided by contract before hand. Each party can then equitably share in royalties.

Countries differ in standards on ownership. Germany requires that inventors share in royalties even if they have assigned their ownership rights to their company.

Licensing Issues

Royalties

Only your imagination limits the way to charge royalties. Some ways include charging an upfront fee, a percentage of sales (increasing or decreasing) and/or milestones for achieving goals such as clearing a phase of clinical trials for a drug or delivering a section of code.

When licensed companies are sold, the purchaser frequently wants to buy out the royalties due. When the license is created, a formula for buying out the royalties should be set.

When there are several separate owners licensing their patents as a single licensor, the question of royalty sharing is important. A sharing formula should be established taking into account the number of patents each party licenses, the number of claims in each patent, whether

the patents are enabling (dominate the field) or improvements (products of features) and the remaining patent term.

Licensing Issues

Equity

It is common for U.S. universities to take equity in start-ups licensees. When a group of universities receive equity as part compensation for their license, they should each decide if they want to directly own the equity or share it as a pool. Pooled equity creates responsibility on the manager as when to sell, vote the equity and participate as a shareholder in the company. The owners of pooled equity should decide on how to make their decisions, such as by majority vote of the equity owned.

Patent Filings

Joint research projects may have joint inventions. If they do, they should decide on which inventions to file patents, in which country and who bears the costs. Normally patent costs are paid out of royalties and are frequently paid for by the licensees.

Suggestions

To be successful, assemble the Archimedes technology under one management so that licensors have one party to negotiate licenses.

Agree upon royalty and equity sharing.

Use a single licensing agent such as a technology licensing office or private agent. Make sure that the agent commits the resources.

Have a dispute resolution mechanism such as a panel of experts to arbitrate.