

Intellectual Property Bundling: An Opportunity for Academic Health Centers?

By Andrew Lyzenga, MPP

Collaborative research coupled with shortcomings in the patent system necessitate the pursuit of IP bundling



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A recurring issue in efforts to facilitate the sharing of research information and technology is intellectual property (IP) bundling, or the aggregation of intellectual property across multiple institutions for the purpose of licensing to outside parties. Bundling arrangements can be formed to address hold-ups resulting from patent-related problems or to combine complementary technologies in order to create new opportunities for commercialization. IP bundling is worth considering in light of the growing importance of collaborative research and the recognition of certain aspects of the patent system which can work at cross-purposes with collaborative research. This brief will describe some problems with the patent system that may be alleviated by patent pooling arrangements, examine the application of patent pools to the biomedical field, discuss some other instances of IP bundling, consider some anti-trust issues related to IP licensing arrangements, and present a number of issues that academic health centers may need to address when exploring patent pooling or IP bundling initiatives.

PATENT POOLS

Patents Promote Innovation

Scientific progress is, fundamentally, a collective and cumulative endeavor. It has always been thought that the successes of modern science are based to a great extent on “cumulative innovation.” That is, new discoveries are enabled by and built on the foundation of previous findings, which in turn were built on findings prior to those, and so on.¹ Accordingly, science depends vitally on information exchange. It is essential that new ideas and innovations are divulged and disseminated, rather than kept secret by their proprietors. The patent system exists, at least in part, in order to promote this process of cumulative innovation, providing incentives for scientists or inventors to develop new discoveries and then to publicly disseminate those discoveries so that

others can build on their developments.

Patents encourage this process by giving innovators ownership of their work—i.e., endowing them with intellectual property (IP) rights—thus assuring that these innovators will benefit from any commercialization of their discoveries and preventing the products of their labor and investment from being stolen by others. The Bayh-Dole Act of 1980 allowed universities, non-profit institutions, and small businesses to claim ownership of the results of federally-funded research. This legislation led to a dramatic increase in patent filings, and has been extremely successful in stimulating the commercialization of research and the promotion of innovation, particularly in the biomedical field.

Shortcomings of the Patent System

However, the patent system has its limitations, and can even work to stifle the sort of information exchange that it is intended to promote. The granting of ownership over technological developments can allow patent holders to block continued innovation by obstructing reasonable access to their patented developments. For example, patent holders may effectively stifle innovation by refusing to license their discoveries to others, licensing to only one user exclusively, or charging exorbitant licensing fees. Moreover, even when patent holders are behaving reasonably, problems can arise if a user seeking access to previous discoveries must deal with multiple different patent holders in order to develop a single useful product or tool. In such a case, the “downstream” researcher must negotiate licensing agreements with each of the different “upstream” patent holders, a process that may entail transaction costs so excessive that they become prohibitive.² This is known as “patent stacking,” or the creation of a “patent thicket.” Patent thickets can lead to underutilization of important discoveries and the stagnation of research if potential users determine that the costs of obtaining rights to the relevant technologies are greater than they are willing to bear.³

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Patent Pools May Help in Overcoming Patent Barriers

One proposed solution to the problem of patent thickets is the creation of patent pools or other kinds of cross-licensing agreements. The U.S. Department of Justice defines pooling arrangements as follows:

Cross-licensing and pooling arrangements are agreements of two or more owners of different items of intellectual property to license [to] one another or third parties. These arrangements may provide procompetitive benefits by integrating complementary technologies, reducing transaction costs, clearing blocking positions, and avoiding costly infringement litigation. By promoting the dissemination of technology, cross-licensing and pooling arrangements are often procompetitive.⁴

Pooling arrangements address the problem of patent thickets by bundling related patents together and placing them under the control of a single entity, thereby creating a “one-stop shop” for potential licensees. Rather than negotiating licensing agreements with each of the respective patent holders, a user can obtain access to a set of patents through a single transaction, most likely under pre-established terms and conditions. In addition to reducing transaction costs, patent pools also provide competitive benefits by reducing the probability of litigation for patent infringement, thus increasing the likelihood of continued innovation.

Patent pools have been utilized in many industries as a way to enable the development and production of goods that require the use of multiple patented technologies. The Sewing Machine Combination, covering a number of different sewing machine patents, was formed in 1856 and is generally thought to be the first instance of a patent pool.^{5,6} Patent pools were also created in the emerging automotive and aircraft industries in the early 20th century.⁷ More recently, patent pools have been formed around the basic elements of digital video compression and storage technologies.⁸

Patent Pools in Biomedicine

While there are currently no patent pools comprising biomedical innovations, a number of observers have warned of developing problems in the area of biotechnology licensing, including the formation of patent thickets and high licensing costs.^{2,9,10} Patent law experts Michael Heller and Rebecca Eisenberg provide an example of the

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problems that may arise from the proliferation of biotechnology patents:

To learn as much as possible about the therapeutic effects and side effects of potential [pharmaceutical] products at the preclinical stage, firms want to screen products against all known members of relevant receptor families. But if these receptors are patented and controlled by different owners, gathering the necessary licenses may be difficult or impossible. A recent search of the Lexis patent database disclosed more than 100 issued U.S. patents with the term “adrenergic receptor” in the claim language. Such a proliferation of claims presents a daunting bargaining challenge.¹¹

The National Academy of Sciences concluded that, to date, there is no evidence that patent thickets are a severe problem in the areas of genomics and proteomics in a report issued last year.¹² However, the authors suggested that this may be the result of a “general lack of awareness or concern among academic investigators about existing intellectual property,”¹³ and cautioned that licensing issues could become increasingly problematic as genomics and proteomics continue to develop and institutions become more aggressive in asserting their intellectual property rights.¹⁴

To avoid future problems, proactive efforts to reduce barriers to licensing and dissemination of research results are being considered by some experts as a preventive measure to ensure continued innovation and progress in biotechnology. Pooling arrangements, which can simplify the process of identifying patents and obtaining licensing rights, may be an appropriate response to potential problems in biomedical research.^{3,4,15}

OTHER IP BUNDLING EFFORTS: TECHNOLOGY TRANSFER

In addition to bundling arrangements that respond to patent thickets and other related issues, intellectual property can also be bundled in order to create new prospects for commercialization and to improve marketing opportunities.

Along these lines, the Larta Institute, a private firm specializing in technology transfer, and the Ewing Marion Kauffman Foundation, an organization based in Kansas City that is dedicated to advancing innovation and entrepreneurship, have collaborated on an initiative called the Technology Bundling Project.¹⁶ Recognizing that there is often a lack of coordination in university research and that many institutions do not have the resources to pursue tech transfer aggressively on their own, the Technology Bundling Project aims to identify complementary technologies at multiple institutions, bundle those technologies together, and market the bundles to industry.¹⁷ However, this project does not establish a single licensing entity. Rather, participants are encouraged to develop template agreements laying out licensing terms in advance, so that licensing agreements will not need to be negotiated on an *ad hoc* basis each time a company expresses interest in the bundled technologies.¹⁸

The Technology Bundling Project convened two expert panels to review university-submitted technologies and determine which of these technologies could be bundled together. As of October 2006, according to Larta, the panel has reviewed more than 1500 inventions from six submitting institutions. From these submissions, 41 bundles comprising 100 different technologies have been created.¹⁹ In connection with the Technology Bundling Project, the Kauffman Foundation has created a website (www.ibridgenetwork.org) where technology bundles may be posted and searched by potential industry users.

In addition, a variety of organizations in New Mexico, including the University of New Mexico, the National Center for Genome Resources, and other non-profit institutions active in biomedical research, joined together in 2003 to create the Technology Research Collaborative (TRC), a cooperative venture to promote technology commercialization and create economic benefits for the state of New Mexico.²⁰ In 2005, TRC members signed an Inter-Institutional Agreement establishing a framework for patents from the various organizations to be bundled together and licensed through a single entity.²¹ However, shortly thereafter, TRC shifted its focus from support for pre-commercial technologies to support for developing commercial ventures serving an already-established market or need. Ultimately, given this change in direction, there was never any activity by TRC in the area of IP bundling.²² Still, the initial

agreement to lay the groundwork for IP bundling, which was approved by a diverse array of research organizations, demonstrates the potential for aggregating intellectual property across multiple institutions.

ANTITRUST CONCERNS

Pooling and cross-licensing arrangements can raise anti-trust concerns in some cases. The Department of Justice (DOJ) and Federal Trade Commission (FTC) have outlined a number of circumstances in which patent pools can have anticompetitive consequences and thus may be deemed unlawful.²³ According to the agencies, pooling agreements are anticompetitive if they result in price-fixing, exclusion of competitors from the market, or the deterrence of innovation.²⁴ The DOJ and FTC have indicated that most intellectual property licensing arrangements will be evaluated under the “rule of reason”—that is, arrangements will be evaluated on a case-by-case basis, with the agencies making a judgment in each case as to whether the arrangement and resulting restraints on licensing are procompetitive or anticompetitive in their effects.²⁵

A series of hearings on antitrust enforcement and intellectual property resulted in a 2007 joint report from the DOJ and FTC that identified several specific issues of competitive concern with regard to patent pools.²⁶ Of note were the agencies’ findings that (1) pooling arrangements should be composed of complementary patents rather than substitute patents in order to reduce the risk of price-fixing;²⁷ and (2) in most cases, participants should retain the right to license their patents outside of the pool to encourage continued innovation.²⁸

ISSUES FOR ACADEMIC HEALTH CENTERS: FINDING ECONOMIC VALUE

The main question facing academic health centers with regard to intellectual property bundling is whether institutions will find enough economic value in a pooling or bundling arrangement to participate. Such an arrangement will require participants to cede some control over the IP they choose to contribute to the pool in exchange for the potential for greater marketability, more equal

distribution of risks and benefits among participating institutions, and less time and effort devoted to negotiating licensing agreements.

A sticking point may be in the pre-valuation of patents in the bundle. Participants will need to determine the relative value of each contributed patent and negotiate in advance the distribution of royalty revenues that would result from any licensing agreement. It is typical of pooling arrangements to retain an independent expert or board to evaluate patents, in order to eliminate the tendency of participants to over-value their respective contributions. Furthermore, in the case of patent pools, an entity is typically designated to execute licensing transactions involving the bundled IP.

Additional questions that will need to be addressed include the following:

- Do the academic health centers have IP that is suitable for pooling or bundling with IP from other academic health centers?
- What rates will licensees pay for access to the pool?
- Should licensing of bundled patents be compulsory?
- Should members retain individual licensing rights?
- Should free use of bundled IP among members of the pool be allowed?

As collaborative research continues to grow in importance and the biomedical field expands, concerns surrounding patents and licensing will come increasingly to the forefront. Academic health centers should remain aware of these emerging issues and pursue creative ways of sustaining the innovation and information exchange that are so vital to scientific progress. Intellectual property bundling is one strategy that may be worth exploring to address problems in this area.

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- ¹⁹ Ibid.
- ²⁰ <http://www.nm-trc.org/>
- ²¹ <http://www.sandia.gov/news-center/news-releases/2005/all/inter-inst.html>
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