

Memorandum To: Esther Lee, Department of Commerce

From: Bob Litan and Lesa Mitchell, The Kauffman Foundation

Re: Accelerating the Commercialization of Government-Funded University-Based Research

Date: August 17, 2009

The United States now has almost three decades of experience with the Bayh-Dole Act of 1980 (BD), which expressly permitted universities to retain intellectual property rights (IP) to inventions developed with federal funding. The purpose of BD was to enable and encourage universities to thus commercialize these inventions – by licensing them to start-ups or existing companies – and thereby to diffuse their benefits widely throughout American society and to make U.S. firms more competitive in the global economy.

Although there is general consensus among the academic scholars who have studied BD that the Act has accelerated the commercialization of university-developed inventions (and indeed other countries have copied the BD approach), there is reason for believing that the pace and amount of commercialization is still sub-optimal. Our purpose in this memo is to explain why, and to propose ways in which Commerce Department regulations implementing BD might be changed to enhance commercialization of inventions made possible by federal funding.

This objective is especially important in light of current plans by the Administration to invest significantly more in federal R&D funding in a number of priority areas, such as clean energy and health care. Much of this funding will go through universities. But if universities are not optimally commercializing new technology, then the benefits of this increased R&D spending will more slowly diffuse throughout the economy and society than should be the case.

The Case For Doing Better

Universities have responded to BD in several ways.

First, universities now are much attentive to securing intellectual property protection for inventions by their faculty. As a corollary, the typical university faculty contract specifies how any royalties or other revenues earned from this IP are shared between the faculty-inventor and the university and often, the faculty member's department(though we understand that in many cases there is no clear accounting provided to the inventor).

Second, universities typically have established “technology licensing offices” (TLO) to coordinate their technology licensing activities and to assist faculty-inventors in commercializing their innovations. With few exceptions, faculty members are obligated not only to disclose their inventions to their university’s TLO and to give their university any IP associated with the inventions, *but also to use the TLO’s services in licensing inventions to existing companies or to start-ups* (founded by the inventor and/or other parties).

Third, universities have used licensing revenues from IP generated by their faculty in various ways – to support operations and/or to supplement endowments. Some universities in fact view their TLOs as profit centers; others view them more as service-providing entities to assist faculty-inventors.

TLOs vary widely in their effectiveness and in the experience of their staff. Some, such as the offices at MIT, Stanford, and the foundation affiliated with the University of Wisconsin (WARF), are widely recognized as leaders in the field, having developed expertise over many years and also having the advantage of working with especially entrepreneurial and inventive faculty members. In many other cases, however, the potential deal flow is slimmer and the TLO staff less experienced. In fact, the majority of university TLO’s actually lose money – that is, generate less licensing revenue for the university than the cost of their operations.

Although neither the BD Act nor the regulations of the Commerce Department implementing the Act specifically or explicitly require universities and/or their faculty-inventors to use the licensing services of their own university’s TLO, as a practical matter since faculty must disclose their inventions to the TLO virtually all universities only use their own TLO to pursue licensing opportunities.

This means that the market of technology licensing agents is highly fragmented and inefficiently organized. Outside of the top tier of commercializing universities, where the deal flow is significant and the TLO offices staffed by highly experienced personnel, TLOs at most universities do not have either the economies of scale or scope to optimally commercialize faculty innovations. Due to their employment contracts, federally-funded university inventors are not able to take advantage of the licensing services of *other university* TLOs or non-university-affiliated licensing agents who may have more and/or better experience in the relevant fields. Furthermore, because TLOs have limited resources, many faculty who believe they have commercially worthwhile inventions may be ignored or discouraged, while the TLO staff concentrate on the inventions *they* believe are most commercially viable. Inventors who experience such treatment cannot test their inventions in the marketplace by securing other more rapid and more efficient licensing services that could be available in a freer market. Society loses out as a result when otherwise commercially valuable technologies are put on the shelf, temporarily or

permanently, by often over-worked TLO staff who concentrate only on the inventions they (but not necessarily potential consumers) believe are the most viable.

Imagine, for example, you are a professor who has invented a breakthrough clean-tech technology or medical device but who is then obligated to deal only with the TLO at your university, even though there may be no individuals in that office who are as well equipped as you may be in developing the commercial potential of your invention. You would prefer to deal with a TLO that already has experience in the field of the invention. This may not necessarily be a Stanford or MIT, but could be a university such as UC Davis for wine-related inventions or a University of Michigan for inventions related to the auto industry. Given the way the law is interpreted today, this option is not available, because your university or university's TLO won't let you. Your only alternative, if you want more rapid commercialization, is to go through the "back door" and not tell the university about your invention – which a sizeable minority of faculty already do. But backdoor commercialization, too, may result in inefficient licensing, since you and your agent, if you have one, will try to stay under the radar, and thus clearly will not use another university's TLO.

In short, the TLO licensing market as it is currently structured – with faculty-inventors effectively restricted only to using their own university's TLO as a licensing agent -- produces a sub-optimal level and pace of commercialization. This costs inventors and universities money, hurts American consumers and businesses, and discourages entrepreneurship .

Solutions

As noted at the outset, the Commerce Department has issued rules implementing the BD Act (37 CFR 401 et seq). Commerce is thus in a position to reduce, if not eliminate, the current fragmentation and inefficiency of the university technology licensing market by amending these rules in ways that not only would be perfectly consistent with BD, but which would better achieve its objectives. This could be done either through a standard Notice of Proposed Rulemaking (NPR), if the Department is comfortable with a specific proposal or set of proposals; or through an Advance Notice of Proposed Rulemaking (ANPR), if the Department is less sure of the right answer and wants a broader set of comments. Our suggestion is that the Department proceed directly to an NPR since the basic "fix" seems readily apparent, although the Department clearly would benefit from having public comment on other ideas certain parties may advance.

The straightforward solution to inefficiency of the technology licensing market, in our view, is to give faculty inventors much greater say in who will be the licensing agent for their inventions. Arguably, inventors already have total freedom in this regard since the current regulations are silent on the subject. But

as with the BD Act itself, which some have argued merely clarified the IP rights universities already had, an explicit revision by Commerce of its BD rules could provide a significant nudge to universities and their faculty that would bring much greater and much-needed freedom and competition to the technology licensing market.

It bears emphasis that the right to choose an agent is and would remain independent of the ownership of the IP, which would remain with the university. In addition, the proposals here would not touch the royalty sharing arrangements faculty-inventors may have with their universities. Instead, the NPR would simply and solely grant faculty-inventors greater freedom to choose the licensing agent.

How much freedom is a matter of debate on which public comment should be sought:

--The most expansive option could make clear that the faculty-inventor has exclusive control over the choice of licensing agent once the invention is disclosed. The main argument for doing this is that inventors are often in the best position to know how to best commercialize and/or find the best agents. The chief argument against is that sometimes (universities may claim more frequently) this is not the case, and that universities' own TLOs (especially the good ones) are best positioned to commercialize the inventors' technology.

--An alternative approach could give the faculty-inventor and university joint control over the choice of licensing agent, with each having a veto over the other. When the two fail to agree over a certain period of time, the regulations could recommend or require the parties to use arbitration, or leave that issue to the parties themselves. This option would give both parties meaningful input into the choice of licensing agent, but it runs the risk of not effecting real change in the licensing market. Unless a faculty member is already a "star" and thus has some bargaining power vis-à-vis the university, the university will be able, if it wants, to impose a dispute resolution procedure in the standard faculty contract that works to its advantage rather than to the inventor's.

There may be other approaches or options that would take account of both the inventor's interest in maximizing the value of his/her invention and the speed of commercialization, and the university's desire to do the same without (in its view) being held hostage to the views/desires of the faculty inventors. The NPR should ask the commenters for such ideas.

In any event, any rule change that brings about more competition in the technology licensing market should generate a triple "win" outcome:

Universities will earn more revenue, more rapidly, from a faster pace of commercialization of inventions discovered by their faculty, and through more expert licensing.

Faculty inventors will be better off because they typically share in royalties or licensing revenues earned by universities.

Society will be better off by having access to new products and services more quickly than otherwise would be the case.

Entrepreneurship in the U.S. would be strengthened through more frequent and more rapid commercialization of cutting-edge technologies.

The Politics

Although we believe strongly that society as a whole, universities and faculty inventors all will be better off under such a reform – and that the public comments on a rule change of the kind we have suggested would reflect this view – certain TLOs and their staff will believe that they cannot survive in a more competitive environment thus will argue that they would be worse off. For that reason, it is likely that many TLOs and their trade organization, the Association of University Technology Managers (AUTM), will oppose rule changes aimed at generating more competition. Such opposition would just be a fact of life: productive policy changes that benefit society as a whole should not be stillborn because of opposition of small interest groups or self-interested parties.

It is also conceivable that some university presidents will oppose change, even though we believe that if they understood that their universities could only benefit they would welcome more competition in licensing functions. For this reason, it may be useful for the Department to discuss these ideas with such organizations as the AAU. . Other organizations it may be useful to consult include the National Venture Capital Association, NBIA, and the Angel Capital Association.

Inside Commerce, your General Counsel's office obviously will need to be involved in these issues. We also understand that NIST has played a role in BD policy and thus it, too, should be consulted.