Online Ethics Center
FOR ENGINEERING AND SCIENCE

Who Owns My Invention? A Look at University Researchers and Technology Transfer

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Description

This student project includes a scenario that looks at internet search engines and the ethical questions raised about technological transfer and research.

Body

Scenario

Mike, a professor at Frankfurter University is a computer scientist by training. His particular area of interest is Internet search engines. Mike has recently made several novel advances including a good estimate to measure the usefulness of a web page given a query, and how to search efficiently for pertinent data in large files. Individually, each of his advances are not valuable. However, when put together, Mike's discoveries form effective pieces of a search engine. He knows the immense value of his algorithms and wants to start his own business. What should Mike do?

Questions

1. How should Mike handle the patenting questions so as to be fair to others and further his own best interests?
2. Who should Mike approach first?
3. How does funding affect how Mike can proceed?
4. Does the Bayh-Dole Act of 1980 change the way faculty members or universities patent their works?
5. If Mike does create his own business, and another infringes upon his patent, should Frankfurter's Technology Transfer Office (TTO) or Technology Licensing Office (TLO) feel obliged to help Mike prosecute infringements upon his license, assuming he is still an employee of the institution?

Interviews

I interviewed three people experienced with Technology Transfer at research universities. They were, in order interviewed, Mr. T, Mr. L, and Mr. O.

Mr. T has been an administrator in technology transfer for a few years. During our meeting, I asked Mr. T specifically the questions above and spoke with him at length about the ethics surrounding intellectual property (IP) at a university.

Mr. L works in licensing at a research university. Prior to this, he was in technology transfer partnership development.

Mr. O was an excellent person to interview. He was involved in a life sciences startup company before working in a university setting and had an interesting vantage from which to answer my questions.

I asked each interviewee question 1, "How should Mike handle the patenting questions...?" and question 2, "Who should Mike approach first?" at the same time. First and foremost Mr. T believes that Mike should, in a timely manner, approach his university's Technology Transfer Office (TTO), or Technology Licensing Office (TLO) if applicable. Then, Mike should officially disclose his invention and/or discoveries to the university by submitting an Invention Disclosure Form (IDF). It is ethically important that Mike does notify the university because he has most likely made an agreement in good faith to disclose his findings.

Mr. O and Mr. L both strongly agree with this course of action. Mr. L notes that, "The vast majority of the time, if research is carried out using the university's resources, then the university owns it." Mr. O adds that when submitting the IDF Mike would have the opportunity to list contributors to the research. If Mike were working with others, as most researchers do, then Mike should appropriately credit any other contributors to the work. Also on the IDF is a section describing how the research was funded. Here too Mike should appropriately give credit.

Question 3, "How does funding affect how Mike can proceed?" elicited great responses. According to Mr. T , there are two general types of funding, private and public. If Mike was using private funding, depending upon previous agreements, the private source may have a claim of ownership of the patent. The contingencies concerning any patent ownership for the research, Mr. T says, is usually handled in the agreements prior to starting the research. By doing this, all parties are made aware of their legal and ethical obligations. Therefore, if Mike was funded with private grants, Mike should follow the actions prescribed in his agreements with the source of the funding.

With public funding however, the three interviewees agree that Mike should proceed by approaching his university's TTO/TLO. From there, it would be up to the university to decide whether or not to elect title. If the university does decide to elect title, then Mike can start his own business and license the technology from his university. However, provisions in the Bayh-Dole Act imply that the university is obligated legally and ethically to give the government royalty free licenses if they

request them. Mr. L gives an interesting example of how Mike could doubly benefit from licensing his own technologies. Legally, the university is obligated to compensate Mike, the inventor, based on revenues received from the product. Then by licensing the product from the university he is in effect increasing the revenue generated by his discoveries, and therefore increasing the compensation he receives for them from the university.

However, if the university decides to not elect title, then the government has a chance to decide whether or not to elect title of ownership. Again, Mike must wait. It may seem that this process is unfair to Mike, because after all Mike did create the technology. However, Mr. O tells me from his experience at a startup that it is easy to forget that the research that is carried out is only made possible by some source funding it. Therefore it would be ethically unjustifiable to deny those sources the chance to own what they paid for.

In the scenario it is clear that Mike would like to start his own business using the technologies that he created. If both the university and the government decide to not elect title, the university could release the technology to Mike. Mr. T tells me that there are very few releases performed in a given year (in 2004 there was one at his research university). Mr. O says that he often offers to perform releases, but more often than not the inventor does not want to pursue that. This is because in Mr. O's area of expertise, the life sciences, the research material is cost prohibitive. If a researcher wants to work in these areas, they must use the university's special equipment. Once again, when a researcher uses his university's resources, that vast majority of the time the university owns it. So as Mr. O mentions, unless the researcher works on it in his garage after the release, the ownership will most likely be transferred back to the university. However, Mr. L states that in Mike's case a release is very practical. This is because an Internet search engine requires only affordable computer equipment. Further research could be carried out at Mike's own home if he was granted a release. Here again, Mike could start his own business.

Question 4, " Does the Bayh-Dole Act change the way faculty members or universities patent their works?" elicited a different response than I had anticipated. The respondents all agreed that the Bayh-Dole Act has created huge incentives for universities to patent their works. Every year a research university sees on the order of hundreds of IDFs, chooses to pursue about a third of those and licenses half of these. Out of the hundreds of IDFs, only about 10% break even, 5% make some

money and .01% generate a million dollars of revenue. For each dollar of revenue for a particular patent, the inventor is entitled to 50%, according to university policy. Mr. T informs me that other institutions offer a 70/30 split of the revenue. Mr. L points out that this incentive vastly dwarfs those offered for researchers in the private sector who receive little or no compensation for the IP they help discover. These incentives Mr. O argues helps stimulate technological advances. These advances help stimulate more advances by generating revenue for a university to invest further in the research.

Question 5, "If Mike does create his own business, and another infringes upon his patent, should Frankfurter's TTO/TLO feel obliged to help Mike prosecute infringements upon Mike's license? Assuming he is still an employee of the institution." Mr. T , Mr. O and Mr. L were all very quick to point out their research university's policy, which is that each licensee is responsible for protecting the IP they buy. Mr. O envisions that the university would only prosecute if the TTO could show that the infringer was costing the university millions of dollars. Mr. L says that typically it is not an ethical obligation for the university to prosecute infringements.

Conclusions

I found this exercise to be very thought-provoking. Mr. T told me that the reason why TTOs were started, in his opinion, was that, the government is really good at buying stuff, but horrible at selling it. Currently, the government is allowing universities the chance to license the research they carry out in the hopes that it gets put to use quickly. This reflects, for me, a great ethical question for the future, namely how ought we ensure that technological advances are put into use in our society? I have come away from this project believing that TTOs are part of the answer.

If I were ever involved in a situation like this it is clear to me that there are well defined procedures that I should follow. Talking with the TTO would only benefit me. Because the TTO's expressed purpose is to get technology to market, it would be in my own best interest to allow them to sell it. However, if all other parties decline, I would patent my discoveries. Then I would be very careful to not use the university's resources to further the work, because by doing so I would be unethically denying them their right to ownership of the work. Mr. T made it painfully clear the potential damage that misconduct could cause in this scenario

for the inventor.

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