Top-up fees

Trapped between constricting cash flows and stagnant research dollars, universities are aggressively seeking new ways to monetise innovations discovered through their research. **William P Farrell, Jr** explains

As engineers at Marvell Semiconductor raced to market with its new computer chips in the early 2000s, the company made no effort to conceal the source of their data-processing proficiency. Internally, the simulators in its new chips were called "Kavcic Viterbi" and "KavcicPP", a nod to Aleksandar Kavcic's pioneering work as a Carnegie Mellon University graduate student in the late 1990s.

Marvell eventually sold more than 2.3bn chips using Kavcic's invention. What it didn't do was license the technology from Kavcic who, along with his professor, renowned researcher José Moura, had patented his work. That mistake cost Marvell dearly – and helped Carnegie Mellon reinvigorate its research budget. Following a landmark patent lawsuit last year,[1] a jury ordered Marvell to pay the university $1.54bn. The company eventually settled for $750m.

Much of Carnegie Mellon's windfall went right back into the laboratories where Kavcic's inventions originated. A third of the settlement went to the college of engineering, where the research took place. Kavcic and Moura, who also received settlement funds, donated millions more to data science and engineering research at the school. University assets increased by $862.8m[2] in 2016, a 28.3% improvement on the previous year's performance. US financial services company Standard & Poor's raised its outlook on Carnegie Mellon's debt from stable to positive.

While it netted the school a record-setting sum, Carnegie Mellon's victory wasn't the only of its kind as universities across the country have begun to realise the potential value of protecting their patents. Trapped between constricting cash flows and stagnant research dollars, forward-thinking institutions are aggressively seeking new ways to monetise the innovative technology discovered through their research. That means licensing their technology to businesses and, increasingly, asking the courts to enforce their intellectual property rights.

Sensible solution to a significant problem

Educational institutions in the US now file between 45 and 50 patent-related suits each year,[3] according to data compiled by University of Alberta professor Tania Bubela. It's a sensible solution to a significant problem. Today's marketplace puts a massive premium on novel technologies, and finding those is what universities do. Why shouldn't they monetise their discoveries? Especially if it brings in more cash for further research and innovation.

For many universities, it's an urgent question. The funding that supports research at public universities – a driving force in US innovation for more than a century – is under assault from every direction.[4] In the last decade increases in federal grants for academic research have failed to keep pace with inflation.[5] President Trump's recently proposed budget would cut funding by up to 17%[6] for federal agencies that fund public research institutions.

Most dramatically, state spending on public research universities dropped by a third between 2000 and 2012.[7] For many public schools it's only been getting worse since then. In my home state of Illinois, funding for state universities has fallen by 54%[8] since the 2008 recession.

The reality for public universities today: schools that don't create independent revenue sources risk seeing their resource budgets swiftly, drastically slashed at the whim of state legislators or the federal government.

So, it's no wonder that the technology-transfer function is becoming as common as lab coats at US research institutions today; those offices have long since established processes for shepherding commercially viable technologies into the marketplace, whether by licensing the technologies to existing companies or to university-backed startups. Northwestern University, for example, generated over $1.3bn in IP licensing revenue from 2009 to 2015; New York University brought in $1.1bn in the same period. From 2010 to 2015, US universities generated over $15.5bn in licensing revenue, and significantly upped efforts to protect valuable IP. Nearly 7,000 patents were issued to universities in 2015, up from about 4,500 in 2010, with a roughly parallel increase in the number of patent licences executed.

But there is still a great deal of work to be done, and many universities continue to lag behind. My firm recently met with leaders of a top research institution who said the university spends $500m on research and development each year but only brings in $5m in licensing revenue, essentially recovering 1% of its investment. This would be disastrous for any business, regardless of the economic climate.

Universities are home to some of the brightest minds in the world. They are the source of many of our greatest ideas and advances. But there is a gap between their creative prowess and their ability to commercialise and monetise the resulting innovations. Universities must continue to press forward in exploring new avenues for monetising their research.

Enforcement of universities legal rights, in court if necessary, is

one such avenue. Carnegie Mellon's successful patent prosecution offers just one example of a university relying on the legal system to generate meaningful revenue from its valuable intellectual property rights. Earlier this year, the Wisconsin Alumni Research Foundation won a $234m verdict against Apple.[9] Harvard University also recently won a major (though undisclosed) settlement[10] from a pair of semiconductor manufacturers.

Unlike technology transfer, however, litigation has not gained widespread use among US universities, largely because of liquidity challenges on campus. Cash-strained, risk-averse universities often struggle to marshal the necessary resources to pursue patent cases; they also may struggle to afford outside counsel capable of doing battle with the seasoned, sophisticated defence counsel deployed by technology companies to defend such lawsuits. And their technology-transfer processes may not be properly calibrated to put them in position to successfully prosecute infringement cases.

A path to successful litigation

Fortunately, all of these obstacles can be overcome, as demonstrated by the growing body of successful university patent-litigation cases. In my firm's work with universities pursuing patent cases, we've observed first-hand the untapped potential in university patent portfolios.

While infringement cases can be terribly complex and expensive to litigate, universities can outsource much of the work – and nearly all of the associated costs. For universities new to patent litigation, preparing a monetisation campaign helps identify defensible patents with commercial value and lays the groundwork for successful licensing and monetisation campaigns if those patents are being violated.

The first step in this process is for university general counsel to obtain support from their institution's technology transfer office, research foundation, relevant department chairs and leadership team. After meeting with university faculty to identify the most attractive IP assets, it's time to bring in help. General counsels can invite outside counsel, industry experts and consultants to review patents, identify potential licensees, draft claims charts and finally develop a strategy and prepare a budget for the licensing and monetisation campaign.

During this process, there are a few basic questions that can help identify commercially valuable patents. Is the patented technology incorporated in widely used products like cars, smartphones or pharmaceuticals? Is it a "blocking patent" that covers future innovation? Is the technology a groundbreaking innovation or a significant improvement over existing technology? Does the patent have well-drafted claims and a clean prosecution history? Is there significant remaining life on the patent? Is it part of a larger family of patents?

If the answer is yes to one or more of these questions, the patent likely has commercial value. Carnegie Mellon's "read channel detector", for example, checked a number of these boxes. It was used in the hard-disk drives installed in billions of computers; it was patented years before tech companies deployed it; and it was a groundbreaking improvement on existing technology.

When a university discovers that some commercial enterprise is using its intellectual property without paying for it, it then faces the expensive prospect of litigating to recover the funds. Finding top-notch counsel with expertise in prosecuting infringement cases is often necessary to reach a successful outcome, particularly if you're taking on a large-cap firm. But universities are understandably hesitant to stake large amounts of cash pursuing unpredictable legal claims.

This is where we have seen great success using litigation financing. Some firms provide the funds to pay legal fees and other costs associated with the litigation – but only after thorough examination to assess the merits of the claim. In cases that meet the high standards for funding, the university advances no cash. Instead, it agrees to share an agreed-upon portion of the proceeds from a favorable outcome with the financier.

This arrangement allows universities to retain top-notch outside counsel without placing any added burden on academic budgets or making onerous demands for alternative fee arrangements that strain law firm finances. Once retained, outside counsel will be able to commit more time and manpower to matters. The risk associated with full-fee contingencies – wherein the law firm risks walking away with nothing – is borne by the financing firm.

Self-sustaining cycle

As illustrated by the Carnegie Mellon anecdote, a successful patent enforcement action can have a tremendous impact on the resources available for further research, innovation and strategic investment in the university. Empowering a technology transfer office to fully monetise the work being done by staff and students creates a self-sustaining cycle: there is more funding to support the sort of world-class facilities and personnel necessary to develop new innovations that, in turn, generate future revenue.

In the end, when universities are freed from the financial stresses that prevent them from capitalising on their brainpower, they are put in a stronger position to support work that drives advancements in our world. For the same reasons that research institutions have established technology transfer offices, they should also be prepared to move aggressively to protect the rights granted to them as inventors and innovators.

In the long run, if our universities aren't reaping the benefits of the research they produce, then none of us will.

Footnotes

1. *Carnegie Mellon University v Marvell Technology Group.* https://patentlyo.com/media/2015/11/CMUMarvellEnBanc.pdf
2. https://www.cmu.edu/finance/reporting-and-incoming-funds/financial-reporting/files/2016_annual-report.pdf
3. https://www.reuters.com/article/university-patents/schools-that-sue-why-more-universities-file-patent-lawsuits-idUSL1N11G2C820150915
4. https://www.theatlantic.com/business/archive/2017/10/midwestern-public-research-universities-funding/542889/
5. https://ncsesdata.nsf.gov/fedsupport/2015/html/FSS2015_DST_01.html
6. https://www.washingtonpost.com/graphics/politics/trump-presidential-budget-2018-proposal/
7. https://www.amacad.org/content/publications/pubContent.aspx?d=22071
8. https://www.nytimes.com/2016/11/06/education/edlife/college-budgets-affect-your-education-but-its-not-all-bad-news.html?_r=1
9. *Wisconsin Alumni Research Foundation v Apple, Inc.* http://www.analysisgroup.com/insights/cases/wisconsin-alumni-research-foundation-v--apple/
10. https://www.harvard.edu/media-relations/harvard-university-amicably-settles-patent-litigation-with-globalfoundries

Author

William P Farrell, Jr is managing director and general counsel at Longford Capital.