



# **Patent Donations and the Problem of Orphan Technologies**

**A Policy Forum on *The Intangible Economy* with**

**David Martin, CEO, M-CAM  
Peter Bloch, COO, Light Years IP**

hosted by  
Athena Alliance and  
the Project on America and the Global Economy of the Woodrow Wilson Center

Held at the Woodrow Wilson International Center for Scholars, Washington, DC  
April 14, 2004

## *Summary*

*Dr. David E. Martin, President and CEO of M-Cam, and Mr. Peter Bloch, COO of Light Years IP, explored different aspects of the orphan patent question. Orphan patents are those that are no longer used by their inventors or owners and are often donated to other institutions in exchange for tax deductions. Dr. Martin opened the discussion by noting that his company has developed intellectual property auditing systems to identify the commercial validity and value of patents. He noted that 30 percent of current patents are “functional forgeries” because they are issued based on the uniqueness of the words used to describe the invention not on the uniqueness of the invention itself. In addition, he contended that 90 percent of the patents granted in the United States, Europe and Japan were defensive in nature. As fee-based organizations, the patent offices depend on the volume of patents and thus have incentives to grant patents regardless of their ultimate validity.*

*Dr. Martin noted that private consulting firms were counseling companies to adopt an “abandon or donate” strategy for unused intellectual property for tax savings. He noted that universities have used these donations of intellectual property (IP) (rather than cash) as private-sector matching funds often required for federal research grants. In some cases, the universities would abandon patents rather than pay the \$3,000 fee for each needed to maintain them.*

*Dr. Martin contrasted the \$1.4 billion budget for the U.S. Patent and Trademark Office (PTO) with the \$3.8 billion dollar cost to the U.S. taxpayer from tax deductible donations of patents. The valuation of donated patents is based on the methodology used to determine damages from a infringing patent. Yet, in the case of donated patents, none have had any commercial value. He concluded his opening remarks with a call for the PTO to do a much better job of determining what is really a new invention that deserves the temporary monopoly conferred by the law.*

*Mr. Bloch elaborated on the history of patent donations. While allowed since 1954, in the 1990's corporations became more aware of the value of their patent holdings and of the tax benefits of donating unused patents. In response to a growing concern about abuse or even outright fraud, Congress began tightening provisions of the tax code for deduction of donated patents. This has caused concern, as proponents of patent donation believe that donated patents lead to new areas of research and have helped universities bring their research closer to market.*

*After reviewing the current system of patent donations, Mr. Bloch concluded that it did not work. He pointed to a limited number of successes but did not feel that they offset the costs. Most of the incentives provided by tax deductions are for technologies that are already closest to market and easiest to commercialize. However, ending the program completely could also prove to be a mistake. Instead, a broader look at the entire national innovation system is needed to return the focus to technologies that are more difficult to commercialize, where incentives for further development may produce more public benefit.*

- - -

The speakers for this policy forum were **Dr. David Martin and Mr. Peter Bloch**. Dr. Martin is CEO and founder of M-CAM, a Charlottesville, Virginia corporation that developed and commercialized the world's first international intellectual property auditing systems to identify the commercial validity and value of patents. He has been at the forefront of IP management system development for over a decade. Formerly an Assistant Professor at the University of Virginia's School of Medicine, he has worked with numerous governments on technology transfer policies and intellectual property protection.

Mr. Bloch is the Chief Operating Officer of Light Years IP, a not-for-profit association focused on adapting modern IP marketing, asset management and licensing techniques to help developing countries earn export income. He is a business strategist and multimedia developer with over twenty-five years of experience in all aspects of startup, management and strategic planning for media companies. For the last fifteen years, he has specialized in working with media technology companies as a strategic planning consultant. As a consultant to the International Intellectual Property Institute, he co-authored a recently published research paper, *IP Donations: A Policy Review*.

Dr. Martin and Mr. Bloch were asked to explore different aspects of the orphan patent question. Orphan patents are those that are no longer used by their inventors or owners and are often donated to other institutions in exchange for tax deductions.

They were introduced by **Dr. Kent Hughes**, Director of the Project on America and the Global Economy at the Woodrow Wilson Center.

**Dr. Martin** began his presentation by describing the work of M-CAM on validating patents.

Based on this work, he believes that over 30 percent of the United States patents currently in circulation are “functional forgeries”— they have no uniqueness other than the use of a thesaurus, not necessarily a novel and unique product or process. He gave the example of a patent for toast issued in July of 2001 where toast is called “the thermal refreshing and remediation of a bread product.”

According to Dr. Martin, the U.S Patent and Trademark Office (PTO) is not fulfilling its constitutional charter. The U.S. Constitution says that in exchange for the disclosure of an invention or discovery that advances “science and useful arts,” the inventor may get a limited monopoly. Over 90 percent of the patents in circulation in the United States, Japan and Europe are “defensive” patents. These patents are in stark violation of the Constitution; grant of a public monopoly was not for protectionist self-interest. The grant of a monopoly was in exchange for the disclosure of something that promoted science, technology and industry.

The problem is that the PTO—and the patent offices of Japan and Europe—are fee-based organizations. Thus, their incentive is to grant more and more patents. If they reject a patent, they obviate any annuity value of the maintenance fees—and reduce their funding.

In 1983, the decision was made to go for quantity over quality and the PTO became a “customer-service organization.” But who’s the customer and what’s the service? The customer should not be the applicant. The customer should be the public whom, in that exchange of sovereign grant, there has been an advancement of public interest.

Dr. Martin pointed out that the term “orphan patent” is a bit oxymoronic. If it’s disclosed, it is no longer an “orphan”— the public can access it at no cost. If it’s disclosed, the public has no limitation on what it can do with it, save it can’t specifically commercially exploit that particular thing that is embodied in that particular patent.

The term “orphan technology” has a more legitimate historical basis in the economic dialogue. It comes out of the era that followed the liberation of defense technologies, where Congress decided that it would be a good idea to try to make those technologies available for commercial exploitation if they no longer had a defense application. For example, the under-40 female population was able to get gamma-emission detection of breast cancer. Certain optics and certain telecommunications also came out of this switch from defense to commercial technologies.

But orphan technologies were, at the time the term was coined, specifically those technologies that the public had paid for, the public had already invested a monopoly interest in. The U.S. government because of its holding rights on that intellectual property was not doing anything with them.

But, the term orphan technology now implies that there is another use, or a better use, of an invention. Implicit in this concept of technology transfer is the notion that somewhere along the line you’re introducing an economic theory called the “secondary market”— the ability to

put a piece of technology, a property interest, what have you, into the hands of parties who can do something with it.

Dr. Martin believes that we pay a lot of money for R&D but don't get much for that R&D dollar. Most technology transfer dollars actually are trying to offset this funding inefficiency—with the exception of viewing technology transfer programs as a jobs program or alternative means of funding higher education.

He referred to a study his company did for the Small Business Administration (SBA) on the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) grants. It found that 40 percent of grant applications coming through SBIR and STTR actually were soliciting funds to pursue an investigation into something that had already been patented.

It was in that investigation that patent donation came to their attention. These, and other federal granting mechanisms, are required to show commercial utility and partnerships with industry in the development phase of funding. The partnership requirement often takes the form of private industry matching grants. They found that often these donations were intellectual property, not cash. At the same time, it became clear that the major accounting firms were hawking an “abandon or donate” strategy as an ideal way to generate phenomenal tax savings.

In one interesting case, the Internal Revenue Service got an information disclosure statement from a taxpayer that listed a number of donated patents that the company never owned. The company who did own some of these “donated” patents never even knew of the company that had been so kind as to donate them.

From Dr. Martin's perspective, all of this began to look like a situation where companies no longer wanted to pay maintenance fees on those questionable patents acquired for defense reasons (often by copying competitor patents to build a protective hedge around their ideas). Rather than pay to maintain those patents, it became both easier and more lucrative to donate them to universities as match grants.

It has become clear that post-donation, patents aren't being maintained. Universities are willing to walk away from patent portfolio valued for tax donation purposes at millions of dollars for the sake of saving a few thousand dollars in fees.

The result is a system that generates \$1.4 billion a year in fees to support a patent office and loses \$3.8 billion a year in tax revenues on patent donations.

Part of this rush for patents has been deliberate. From 1980 to 1985 we began to copy the Japanese system of defense patents. So Now, when Japanese company comes into a technology negotiation with their stack of patents, the U.S. company can counter with their own stack. And then the two companies agree to non-revenue-bearing cross licenses.

Another problem with the process is how we calculate value. The current patent-valuation methodology is drawn from infringement damages. Yet, at the time of donation, none of the patents actually has a commercial value. To have infringement damage, you have to have commercial consequences; if you don't have commercial consequences, there is no damage. And if you have no damage, there is no economic consequence. So, Dr. Martin wondered, why are we using such a methodology to arrive at economic value?

He offered the analogy of a patent as a "No Trespassing" sign. There's no affirmative value in either; it conveys no affirmative right. It simply enables you to keep someone else from doing something. And a "No Trespassing" sign is worth exactly what you pay for it. Put the "No Trespassing" sign on two different "mines": a minefield and a platinum mine. The sign is still worth only what you paid for it. The "No Trespassing" sign on the minefield is worth liability avoidance. The minefield owner is doing that more than anything else just to put you on notice. The "No Trespassing" sign on the platinum mine is only worth how much the owner is willing to enforce that admonition. In either case, the sign itself has no intrinsic value other than the intrinsic value it had when you bought it.

Both the "No Trespassing" sign and the patent are not an asset; they are a contingent liability. There is a burden to do something with that sign to actually achieve what it says. They cost you money to get; they cost you money to enforce; they cost you money to maintain. Where's the asset side so far? Some will argue that not having an enforcement action brought against you must have value, and that we need to find a GAAP accounting means of putting that on a balance sheet. Dr. Martin is not advocating for or against putting it on the balance sheet. He is pointing out that current regulations don't have a mechanism to address the point. Hence, we have a policy problem.

Dr. Martin closed with the observation that American policy is based on the mistaken belief that we are the only creative economy, that we are *the* source of innovation. In all the debate about outsourcing and where jobs are going, the underlying response is to assert that Americans are still the people who invent stuff.

That assumption may get us in trouble in the future. He posed the following scenario: Hoover Dam was constructed with concrete that was calculated to fatigue next year. We have 9 million people living in a desert whose water supply is exclusively from that location. The intellectual property rights (IPR) for water desalinization—which is the only way you can save the 9 million people in the desert from a water catastrophe—are not U.S. owned. They're owned by foreign interests.

This scenario would end up reversing role in the AIDS-drug debate in South Africa, where the U.S. is pushing for strong enforcement of drug companies' IPR. IPR is great, until it's our 9 million people who have to deal with a major problem.

He noted that the rest of the world is now using technologies like M-CAM's forensic analysis of patent enforceability to detect, as he puts it, the patent frauds that are issued every day out of patent offices.

He closed by emphasizing that it is absolutely essential that we wake up to the fact that we need to do a much better job of accounting. We need to better define what invention is, what innovation is and what a monopoly is worth. After we answer these questions, we must build systems and standards to enforce it. This will require halting abuse of the ambiguity that has surrounded intellectual property.

The next speaker was **Mr. Bloch**, who gave an overview of the recently published report by the International Intellectual Property Institute (IPI), *IP Donations: A Policy Review*. Whereas Dr. Martin looked at the detailed foundations of this issue concerning validity of the patents, the policy review looked at the broad macro level.

The issue first came up in 1954 when the IRS clarified certain rulings to allow for the donation of intellectual property. This opportunity was never really used until the mid to late nineties. At that point, corporations began to realize that their intellectual property was becoming increasingly valuable—in some cases even more valuable than their physical plant. Companies and accountants discovered that maintenance fees on used patents were becoming large costs; it was better to either abandon the patent or donate it. Donation was seen as the preferred option, since companies take tax deductions of up to 37% of the value of the patent as valued by an appraiser. Patent donations began gaining momentum in 1996, reaching a peak around 2001. Write-offs for these donations of patent portfolios have reached up into the \$10 to \$20 million range, with numerous large companies now routinely donating patents.

As a result, some people began looking closely at these donations and found cases of abuse, if not outright fraud. The outcome of that debate is a provision in the current tax bill—S. 1637—that would effectively eliminate tax deductions for patent donations. Many corporate donors claim that this will result in elimination of patent donations altogether.

This concerns the recipient community and others who believe that there is value in the program. The recipients of many of these patents claim that the mechanism has been immensely valuable in bringing technologies closer to market. According to them, it has enabled universities to do research in areas that they may not have been able to before.

Most patent donations are going to the second-tier research universities. These institutions don't have their own well-funded endowments and research programs. Nor do they have a great number of their own patents. Therefore they wouldn't have licensing and technology transfer programs if not for the donated patents.

The debate has come down to the intellectual property owners and some in the educational community against the Senate Finance Committee and others who are interested in curbing tax abuse.

It was in this environment that IPI commissioned the policy review. One of the insights of the policy review was that there was no explicit policy on patent donations as a tool of technology transfer. It was a de facto policy resulting from the IRS's interpretations of the rules and

regulations. No one has taken a look at the overall picture and the benefit to the taxpayer. This is a subsidy to corporations but no one had asked the question of what the public was getting in exchange for the subsidy.

One of the problems is finding out how much the program costs. Discussions with the IRS, the Treasury Department and donors have led Mr. Bloch to conclude that it is almost impossible to come up with any reliable data on the value of the donated patents. It is in tens or hundreds of millions of dollars but we have trouble calculating the exact cost.

The first reason is that most of the patents were not donated until the late mid to late 1990s. However, it may take anywhere between four to 10 years to actually commercialize the technology. Companies have been set up as spin-offs of universities specifically to exploit the technology developed as a result of the donated patent but they haven't been in business long enough to deliver any commercial results. And the vast majority of donated patents have not even gotten to the point where there is a technology developed.

The second reason is that there is no measurement system. There is no government agency, no national innovation policy czar who tracks this. There is no data on who is giving what patents to whom, on the progress of the patents, whether or not they are ever commercialized and on what economic activity is generated. The mission of the PTO is job creation and innovation but that is not tied to any national innovation policy whatsoever.

As an aside, Mr. Bloch noted that there are other consequences of not having a national innovation policy. For example, government funding of basic research has been declining steadily since 1982. And the private funding of basic research is moving offshore, away from U.S. universities.

A third problem is the process itself. It's the technology that is closest to a commercial application that collects the highest valuations and gets the highest tax donations. Yet, this same technology, because it is closest to market, should be the easiest to license through traditional arrangements and thereby be less in need of the donation process for commercialization.

Mr. Bloch noted that a large company with a new product that is not going to create a billion-dollar market has two choices. They can give it to a research institution that will take it through a little bit more research and then sell it. As a result, the company gets a subsidy in the form of a tax deduction. The alternative would be to license the technology to another company that doesn't need a billion-dollar market.

Why donate rather than license? According to Mr. Bloch, the answer that normally comes back from business executives varies: we couldn't find anybody who is interested; we didn't have the time; it was too complicated; it was easier to donate. He suspects in some cases that it was simply more profitable to donate the patent for the tax deduction than it was to seek a partner to develop the technology.

Mr. Bloch believes that that if the taxpayer is going to subsidize technology commercialization, the subsidy should go to technologies which are promising but more difficult to commercialize. But it's the more difficult technologies which, under the rules for appraisal, will be given lower values, get lower tax deductions, and therefore are less likely to be donated.

The conclusion of the policy review: the program doesn't work. This conclusion holds despite the fact that there have been some notable successes. There are some technologies that probably wouldn't have gotten to market without this program. This may be a suitable mechanism for subsidizing technology development in the case of orphan drugs— there's limited demand for the drug and the big pharmaceutical companies don't see the return on their investment. In this area, donations or enlightened licensing to research institutions has had positive results.

However, certain proposed changes to the tax code would throw out the program entirely. Rather, we should look at criteria for designing new mechanisms to make promising technologies in early-stage development available to research institutions and to small businesses. Right now, only a 501(c)3 can receive donations for donors to get write offs. Thus, the program locks out small businesses as a recipient.

The entire complex needs to be looked at carefully: owners of a technology that for one reason or another didn't pursue it, universities which are seen as engines of economic growth through their research activities and small business innovations programs and other government programs to foster commercialization.

Before considering subsidies and tax write-offs, Mr. Bloch stressed that we need to look broadly at what elements should be built into a new program. We also need to determine exactly where the market failures are, and to tie it to a national innovation policy.

*[Summary of discussion to be added]*

---