

# Proposal for Fostering Commercialization of Patents

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The premise for patents in Article I, Section 8 of the U.S. Constitution says that patents and copyrights exist to “Promote the Progress of Science and useful Arts.” The patent system is intended to promote development of inventions by granting exclusive rights to the inventor for a limited time period. However, by many estimates over ninety percent of patents are never commercialized. Reducing the percentage of total patents that are never commercialized is not the objective of my proposal. Rather, the solution proposed here is designed to encourage inventors to patent inventions expeditiously and proceed to promptly commercially develop them.

One of the reasons I think many patents are never commercialized is because they serve another purpose, which is to abstract innovative ideas into analyzable form, much like writing does for words. Writing is a method for abstracting oral discourse into static, visual form, freeing one’s mind from memorization to think about new ideas. Indeed, patents themselves rely on writing to describe inventions and keep records of them. Similarly, patents serve to abstract inventive ideas. By the exclusionary rights patents provide, they disclose the details of the invention publicly, and free the inventor or researcher from having to keep the invention secret. My proposal will protect this use of patents, promote patenting, and foster prompt commercialization.

The first dimension of my proposal to accomplish this is to create a U.S. Commercialization Classification system (USCC) that would make the USPTO a crossroads for communication between inventors, companies, and entrepreneurs. The USPTO would become a center for commercial and intellectual collaboration. The USCC system would classify commercialized patents under their areas of commercial use, and classify non-commercialized patents and applications under their prospective areas of commercialization. The USCC structure would consist of a tree of classes and subclasses

similar to the U.S. Patent Classification system (USPC), and would be part of The Office of Patent Classification.<sup>1</sup> Each subclass would be subordinate to the subclass directly above it. Thus, the classes would partition the entire scope of commercial industries into separate categories. They would be inclusive of everything deemed to constitute commercialization.

The classes would consist of all industries in useful commercial areas. An example of a class would include the cell phone industry. The subclasses would divide the entire industry into product categories. For the above example, the first level of the tree would classify cell phones based on their communication protocol, such as CDMA, TDMA, or any other cellular protocol. The next level of the tree, under each of these subclasses, would divide phones based on their type of electronic design or microprocessor family, such as PXA27x processors, RISC processors, or non-processor based phones. Any product would reside in a branch of the tree alongside its similar products. Moreover, it would be possible for any patent to be classified as belonging to any number of these classes. A patent could be classified under disparate product subclasses that technologically had little in common as long as the patent had been commercialized in those areas. The result of such a system is that all patents that have been commercialized in a given product subclass are returned when that commercial category is queried.

A list of the commercial classes which a patent belongs to would be shown under the heading Current Commercial Class in the patent text. This list would be updated once information had been obtained by the USPTO that a patent was being commercialized or had ceased to be commercialized in a particular area. Within this heading, the complete history of the USCC status of the patent would be stored. Any subclasses that the patent

previously resided in, but had since been removed from, would also be shown. Stored with each USCC subclass listing would be the date the patent was added to the subclass, the date it was removed, the name of the company or licensee, and a method for contacting that company.

The implementation of this system therefore requires companies to fully disclose and prove the commercial status of every one of their patents. Under the current patent system, I think companies often use patents defensively to strengthen their company in a commercial area. They hide behind a wall of patents, many of which they are not actually using. They also obtain patents because they think there is a slight chance they might need them in the future. The USCC, however, would force the inventor to open up to the public the details of how the patent is being used. Companies may still try to lie about the use of their patents. In cases where lying is suspected, USPTO inspectors would need to be shown by the company how their patent is being used.

The USCC groups together patents which are used by a particular industrial process, commercial product, scientific procedure, etc. Thus, this system would promote and expedite the forming of patent pools. A patent pool is an agreement between patent holders to license their patents to each other or to third parties.<sup>2</sup> Cross-licensing of groups of patents between patent owners and others allows access to the technologies needed by researchers and companies to perform innovation and research. In biotechnology and biological sciences, especially genetics and stem cell research, patent pools are important in allowing researchers to use patented basic methods and processes, enabling more research to be continued. Patent pools could more easily be created and used if the USCC were implemented. One advantage of patent pools is they mitigate the problem created when companies who hold patents on basic, fundamental processes in an industry block

others from commercializing their products. They also reduce costs associated with licensing transactions and patent litigation, which are large expenditures for small companies. Also, in similarity with the intent of the proposed system, patent pools foster communication and sharing of technical information between its members. As a result of communication, they discourage trade secrets, discourage companies from simultaneously developing the same technology, and encourage novel innovation. The USCC, in this way, would be a structure encouraging companies to create patent pools, cross license patents, and patent novel technologies. Information about patent pools would be imbued in the USCC structure by annotating the patents with a tag identifying them as belonging to a certain patent pool. Patents in a commercial subclass of the USCC which belonged to a patent pool would each be tagged with data about the pool, such as the date it was formed and the companies that created it.

First and foremost, however, the USCC would foster entrepreneurship and profiting by the inventor. Often, an inventor will file a patent for an invention with little knowledge of the commercialization potential for the patent. There is significant cost and difficulty associated with finding prospective companies that would be candidates for licensing the invention. Furthermore, it may be difficult or impossible to discover companies that are expanding toward the same technology that the inventor's patent covers. The USCC system would be used by inventors to discover companies who had licensed patents in the same commercial area as their invention, and who thus might be interested in licensing the inventor's technology. The resource the USCC would provide would thus inspire and motivate the inventor to pursue the commercialization or licensing of his patent further.

It is also possible for the inventor to found a company to market the invention, in which case the USCC would be a tool allowing the company's founders to discover patents in the same commercial area as their product, some of which the company may need to license. A company that recently acquired a patent would use the USCC as a method for researching what other patents exist in the commercial area in which they propose to commercialize their patented technology. By enabling inventors and entrepreneurs to explore the commercial context that their patented technology could become a part of, the USCC would encourage inventors to pursue commercializing their technology.

All non-commercialized patents would be classified under a separate USCC system based on their areas of potential or prospective commercialization. This classification would be used by companies to find patents potentially beneficial to their company. Companies would use the non-commercialized USCC system to research recently patented technologies that had not yet been developed. By searching through the non-commercialized classification, companies would find emerging technologies that they would have otherwise been unable to find. Companies would discover non-commercialized patents in fields that they were involved in or expanding into. These patents could be for cutting edge research that hadn't found a commercial use yet. The company would likely find the newly patented technology useful and, in some cases, decide to license it from the inventor.

This proposal relates to, and could be used in conjunction with, the system for expeditiously bringing together prospective licensees and inventors described in *Create or Perish* by Robert H. Rines.<sup>3</sup> Under that proposal, interested licensee companies could subscribe to a service provided by the Patent Office or other part of the Department of

Commerce. Inventors who agreed to participate in the system would have the details of their patent application promptly made available to the prospective licensees. These companies would then evaluate the invention and contact the inventor directly to pursue it further, and would agree to keep private the details of the invention. This would promote the rapid filing of inventions for review by potential licensees. USPC classification examiners would be employed for these tasks. Under my proposal, an examiner from the USCC or non-commercialized USCC system would be employed to evaluate the commercial subclass that the invention would fall under, and thus to find the relevant companies.

The proposed USCC system has several benefits. It encourages prompt patenting by allowing inventors to explore how they could profit from their invention. It fosters commercialization by enabling entrepreneurship and assists inventors and companies in licensing technologies. As a result, it expedites the process of developing technologies. As the next part of my proposal will demonstrate, this system promotes rapid development of inventions, such as software inventions, and puts patents temporarily in the public domain if they fail to become commercialized.

The second dimension of my proposal introduces a restriction on time to commercialization and proposes a system for labeling patents based on their commercial status. It supports the objectives of the USCC system and relies on the materialization of the USCC for its success. A patent, at any point in time, is to be tagged as one of four different types. If the patent has already been commercialized by its filing date, it is labeled as a type I patent. If the patent has not yet been commercialized, it is labeled as type II. At any time, when a class I patent ceases to be commercialized, it becomes a type II patent. The inventor must also disclose upon filing his intentions for development of

the invention. These descriptions of intention could constitute many different strategies. For example, the invention may already be commercialized, the inventor may disclose intentions to commercialize with his own funding, or disclose intentions to license to an outside company.

After a time-to-commercialization period from the date of first possible development, if the patent by that time has not been commercially developed, the status of the patent changes from type II to type III. Type III opens up the patent to direct commercialization by the public. In type III, there are no mandatory compulsory licensing royalties or other regulations. Any company can then start to use and develop the patented technology as long as the patent is in class III.

The time period that the patent can remain type II varies depending on the nature of the patent. One year is sufficient time for most patents to have begun transformation into a product, or to have found a company to license the patent if the patented technology is able to be developed. This is not true for all patents, such as pharmaceuticals, and this will be discussed in more depth later. Opening up the patent to free use by anyone will allow the technology to grow, if this is at all possible. The hope is that by moving the patent to type III it will open up a new opportunity for the technology to be developed. In general, it will foster the development and commercial use of the technology by temporarily opening up the patent to the public domain. The inventor of the patent, after the public has been allowed to discover or create new commercial uses for it, may then be able to develop and commercialize his technology.

If the inventor subsequently commercializes his invention, the type of the patent changes from III to IV. In type IV, public use is prohibited except for the individuals who had begun to commercialize the patent while it was type III. These companies are

“grandfathered in.” The inventor now has to compete with the other companies who are no longer excluded from the use of the patent. The justification for this is that these individuals created a use or opportunity for the patent that was not there before. The inventor, in the first year after filing, had been given ample time to find a use for his patent if one existed during that time. The companies, who then pioneered an application for the patent, should be considered as having contributed to the usefulness of the technology, and should be allowed to continue using the patent. They created a new context in which the patent now exists. All others, however, should be excluded from using the patent because the inventor should be allowed to profit from his patent, in this new context.

Type I and IV patents are the only types of patents that exist in the USCC. As long as the inventor continues creating a product or licensing the patent, it remains in type IV. This situation can lead to several outcomes. First, if any of the grandfathered companies leave the market entirely and cease involvement with the patent, they are not permitted to begin using the patent again at any time, until such time as the patent re-enters type III. The rationale is that after a company stops use, the context of the patent changes and the company can no longer use the patent. Second, if the inventor ceases commercialization, he can re-enter and begin again at any time, because he owns the patent. Third, if the inventor and all grandfathered companies, if there are any, cease to continue commercialization, the patent returns to class II. The inventor is thus given another year to find a commercial application for his invention, and exclude all others from using his invention during that time period. After 20 years from the filing date, the patent moves to the expired class and it goes into the public domain.

Type III patents offer a unique opportunity for inventors and companies to take advantage of them. By adding a type heading to patents which displays the type number of each patent, the patent database could, for example, be easily searched for only type III patents. This search returns only non-expired and non-commercialized patents. It provides a list of novel, useful, and relatively recently patented technologies which are open to use by the public because of an inability to commercialize.

This solution would be used in conjunction with a patent system that employs different types of patents. Individualized type-specific standards would be used to examine different kinds of patents, such as software patents, pharmaceutical patents, or public health patents. The time-to-commercialization length before the patent enters class III would be one of the differences between these types of patents. In the case of pharmaceutical patents, a drug cannot be fully commercialized until after it has been approved by the FDA. The FDA approval time for new drug applications is often longer than twelve months. The company then has a shorter time to profit before cheaper generic drugs are introduced. The time restriction for a pharmaceutical patent I would thus propose to start after FDA approval and extend for six months. For software patents, the time-to-commercialization constraint would be shorter than one year. It typically should take less time for a new software product to be commercialized. The time-to-commercialization constraint would start at the date of first possible commercial development of the invention. A system for allowing different types of inventions to be held to different patentability standards is not the subject of this paper. But even in the absence of a system with different patentability standards, the time-to-commercialization constraint is dependent on the type of patent.

The restriction on time to commercialization is designed to encourage prompt development and commercialization. The effectiveness of this restriction, however, is highly dependent on the success of the first dimension of my proposal. If the first dimension is well implemented and fosters patenting, the commercialization time restriction will make the system even more successful. The first dimension, through the benefits of the USCC, gives incentive to the inventor to expeditiously file his invention. The second dimension, through the time restriction, gives increased incentive for the inventor to rapidly develop and commercialize.

An alternative strategy for promoting commercialization of inventions employs compulsory licensing by the government. This method has several drawbacks, however, including an increase in the government's size and power. Compulsory licensing of patents has been used by countries to increase the supply of a product, such as the number of antibiotic doses during an epidemic. The government forces the patent holder to license the technology for a royalty determined by the government.

To promote development of inventions, compulsory licensing with a perpetually decreasing royalty would be instituted if a patent were not commercialized. Time constraints would be placed on how long the inventor would have before compulsory licensing would take effect, how the royalty would decrease in time after compulsory licensing began, and when the patent would expire. After a patent is approved, the examiner must determine whether the technology is being commercially developed by the inventor. The classification status would be subject to change at any time. This would occur when the USPTO received information that the patent was being commercialized, or if this had stopped occurring. Suppose a company was trying to license a technology from its inventor but had been unsuccessful for a certain time

period. The government could then set the royalty and terms of the license agreement such that the company would still be willing to pay for the technology, and the patent holder would be forced to accept the licensing agreement. If the company didn't accept the initial terms, in time the terms would become more favorable for the company. The royalty would decrease in time and eventually reach zero after a certain time period, at which point the inventor's patent would have expired. The royalty paid to the inventor would decrease slowly in time at first, and then decrease more quickly. Once the company began licensing under the compulsory licensing terms, the inventor and company would always be free to negotiate other terms, unless the inventor decided to stop licensing.

The compulsory licensing agreement and time constraints would depend on the type of technology. This compulsory licensing scheme would thus be useful in a patent system that gave different types of patents dependent on the technology or industry. Different patentability standards would be used to examine software or medical patents, for example. In the case of software, compulsory licensing would decrease the royalty quickly if the patent were not developed. However, this method for increasing development of patents would be most useful only in cases where the patent holder was demanding excessive royalties. It would also put a large amount of power in the hands of the government.

One instance when compulsory licensing was used in the U.S. to try to increase market competition and commercialization was in the mechanical reproduction of musical works in the Edison era. The U.S. Copyright Act of 1909 Article E stipulated that to be mechanically reproduced as grooves on a phonograph or gramophone, the composer's work needed to be licensed. This went into effect for compositions published

after the 1909 act. Furthermore, there was a Compulsory License Clause. This stated that after the first mechanical reproduction was licensed, anyone else would be able to license mechanical reproductions for a guaranteed fixed royalty of two cents per copy. This was done as a benefit to the public interest, so that after the first mechanical reproduction was licensed, there would be free-market competition. This compulsory licensing put an end to exclusive contracts for reproducing music, however it did not apply to recordings of live musical performances, only to reproductions of musical compositions. Edison's record company quickly signed contracts with Victor Herbert's Orchestra which stated that Herbert would perform exclusively for Edison, and thus that only Edison could reproduce his works. The compulsory licensing clause of the Copyright Act of 1909 thus failed to end most exclusive licensing contracts.<sup>4</sup>

Another alternative solution to promote commercialization, rather than mere invention, is suggested in *Create or Perish*.<sup>3</sup> If what should be promoted is innovation, development, and entrepreneurship, rather than blind invention, then exclusive rights to the inventor may not be the best form of incentive. If this is the case, a more effective incentive would be tax benefits to the innovator given over a period of time. As a result, this would also greatly reduce the need for patent litigation. This proposal, however, by giving more power and control to the government, I think may lead to problems similar to those of compulsory licensing.

The solution I proposed would both create incentive for inventors to patent technologies expeditiously and encourage rapid commercialization of that technology. The combination of both proposed dimensions of this system I think would be self-perpetuating. As more patents would be commercialized and classified under the USCC system, more commercialized patents would be discovered, which would provoke further

innovation and commercialization. Also, patents on communication and database system technologies that would make it more efficient to classify patents based on their commercialization status would serve to perpetuate more innovation. I think my proposal would improve the patent system by enhancing its effectiveness in fostering development of new forms of technology.

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