WISE
Washington Internships for Students of Engineering

Reforming the Patent Industry from the Small Business Perspective

Andrew Quecan
2007 WISE Intern
University of South Florida

Sponsored by

The Institute of Electrical and Electronics Engineers

Executive Summary

As intellectual property sustains a substantial portion of the American economy and defines our productive cultural history, the balance between sparking innovation while providing patent protection continually evolves as technology redefines the way new ideas are created. While recognizing that many successful high-tech companies were at one point only an idea and a few people, studies have also shown that small businesses are more efficient at commercializing new technology The need for patent protection, especially for the small business, should remain a high concern among the public and elected officials.

Congress is considering the Patent Reform Act of 2007 which could radically change the patent system and adversely affect small businesses, especially through definitions of “micro-entity” and apportionment damages in the current language. Other alternatives to encourage small business innovation fall under the jurisdiction of the United States Patent & Trademark Office (USPTO) and the U.S. Small Business Administration (SBA). The SBA’s Small Business Innovation Program (SBIR) could be easily used to further protect the intellectual property of small businesses. The USPTO rulemaking authority was used to alter policies on continuations to the detriment of small business, rather than addressing the root of the problem by allowing patent examiners more time and retaining experienced examiners.

Policy Recommendations:

- The SBIR program should be used for funding both USPTO and associated legal fees.
- The USPTO, in conjunction with the SBA Office of Size Standards, should develop a better system of classifying for small businesses by a range of employee sizes, income levels, or number of existing patents filed.
- Congress should increase authorization and/or appropriation of funds to the USPTO to increase salaries of patent examiners and retention incentives.
- The USPTO should consider internal rulemaking governing the patent examiner evaluation system, including technology considerations.
- Congress should allow common law for damages to develop further within the court system without legislative action.

Preface

About the Author

Andrew F. Quecan is currently a graduate student at the University of South Florida expecting to graduate in August 2008 with a BSEE/MSEE and BS in finance. He is a research assistant with the Department of Government and International Affairs with interests in public policy, minorities and women in elected office, and campaigns. He has worked as a research assistant in an electro-optics lab and solar cell lab with interests in THz communication and biomedical applications, signal processing, and alternative energy. At USF, Andrew currently serves as the captain of their parliamentary debate team. He is also an active member in the Kosove Society, IEEE-USF, Eta Kappa Nu, and Council of Honor Societies He has received numerous scholarships and awards recognizing academic excellence in engineering, business, and research.

About WISE

Founded in 1980 through the collaborative efforts of several professional engineering societies, the Washington Internships for Students of Engineering has become one of the premier Washington internship programs. Its goal is to groom future leaders of the engineering profession who are aware of and can contribute to the important intersections of technology and public policy. Please see http://www.wise-intern.org for more information.

Acknowledgements

The author would like to acknowledge individuals and organizations that played vital roles in facilitating this research. In particular, he would like to thank the Institute of Electrical and Electronic Engineers (IEEE) for their commitment to the WISE program and sponsorship, which truly facilitated this research and exposure to public policy. This research would not have been possible without assistance and contributions of Dr. William Jackson, Erica Wissolik, and several members of the IEEE Intellectual Property Committee including Mauro Togneri, Glenn Tenney, Lee Hollaar, and Keith Grzelak. Thanks to my faculty mentors at the University of South Florida who trained and taught me the analytical skills necessary to be involved in research and public policy including Dr. Susan MacManus, Dr. Chris Ferekides, and Dr. Hua Cao. The University of South Florida, The Honors College, College of Engineering, and Office of Undergraduate Research for their continued support of my research. Thanks to Ruth and Harri Kosove for supporting my endeavors during my college career. Thanks to my parents, Carlos and Gail Quecan, my family, and friends for their support and encouragement throughout my life.

Paper Citation

Quecan, Andrew F. "Reforming the Patent Industry from the Small Business Perspective" *Journal of Engineering and Public Policy,* vol. 11, (2007) available at http://www.wise-intern.org.

Table of Contents

1 **Introduction** 1

2 **Background**
- **2.1 United States Patent & Trademark Office** 1
- **2.2 Patents** 2
- **2.3 Patent Reform Act of 2007** 2
- **2.4 Small Business Administration** 3

3 **Issues & Findings**

- **3.1 Patent Fees** 4
  - ***3.1.1 Fees Cost Small Business*** 5
  - ***3.1.2 Problems with Classification for Reduced Patent Fees*** 8
  - ***3.1.3 SBIR Program Currently Assists Small Businesses*** 10
  - **Policy Recommendations**
  - ***Patent Fee Inclusion for SBIR Proposals*** 11
  - ***Enhanced Classification for Small Business at the USPTO*** 11

- **3.2 Patent Examiners** 12
  - ***3.2.1 Patent Examiners and the USPTO*** 13
  - ***3.2.2 Efforts by the USPTO to Increase Examiner Retention*** 14
  - ***3.2.3 Efforts by the USPTO to Improve Patent Prosecution*** 15
  - **Policy Recommendations**
  - ***Increased Salaries and Signing Bonuses for Patent Examiners*** 17
  - ***Better System of Evaluating Patent Examiners*** 17

- **3.3 Damages** 18
  - **Policy Recommendation**
  - ***Allow Courts to Further Develop Damage Awards*** 21

4 **Conclusion** 23

1 Introduction

As the lines between actual technology and ideas blur, the need business and government to address patent laws that can stimulate a competitive, innovative economy and protect the rights of inventors, entrepreneurs, and small businesses continues to be a problem. "Intangible assets, including intellectual property, account for nearly one-third of the value of all U.S. stocks, about $5 trillion to $5.5 trillion, or 45% of U.S. GDP. Innovation fueled about four-fifths of the productivity gains during the economic boom of the late 1990s."[1] With 1.6 million active patents in the U.S alone,[2] the patent industry is innovative, but also filled with litigation making intellectual property a very lucrative field. "U.S. businesses today invest as much in intellectual property and other intangible assets, about $1 trillion, as they do in equipment, factories and other physical investments, according to a Federal Reserve Board study."[3] Those investments turn into patent applications and forty-five percent of patents filed are held by small entities.[4] Small firms lead technological development especially with regard to commercializing the idea. Recognition of this situation led to government support sponsored by the Small Business Innovation Research programs at the Small Business Administration. "A National Science Foundation report found that entrepreneurs and small firms are six times as effective as larger firms in utilizing research and development expenditures to generate new products."[5] Patent legal fees and United States Patent & Trademark Office fees are often costly for small businesses. However, increasing fees seems to be necessary for retaining patent examiners and reducing the backlog of patent applications. The Patent Reform Act of 2007 currently being considered by Congress has many provisions that affect small business in a detrimental way, especially regarding damages awarded in patent infringement cases.

2 Background

2.1 United States Patent & Trademark Office

The United States Patent & Trademark Office (USPTO) purpose is found in the Constitution: "*To promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries…"*[6] Although falling under the scope of the Department of Commerce, the USPTO has been a fully fee-funded agency since 1991.[7] The USPTO promotes an innovative and entrepreneurial intellectual property (IP) system through three primary missions: (1) *Administering the laws relating to patents and*

---

[1] "Businesses Battle Over Patent Laws," by Nick Timiraos. Wall Street Journal. New York, N.Y.: June 9, 2007. pg. A.7.

[2] Ibid.

[3] Ibid.

[4] "Patent Reform 2005: HR 2795 and the Road to Post-Grant Oppositions," by Logan, C.L. Missouri-Kansas City School of Law, Law Review.74 UMKC L. Rev. 975 Pg. 995, Summer, 2006. Reference from private email correspondence with Stephen Jensen.

[5] "Patent Reform in the 110th Congress: Innovation Issues," by John R. Thomas and Wendy H. Schacht. Congressional Record Service. May 7, 2007. Order Code RL33996.

[6] U.S. Constitution. Article 1, Section 8.

[7] "Our Business: An Introduction to the USPTO." Available at http://www.uspto.gov/web/menu/intro.html. Last accessed on July 30, 2007.

trademarks, (2) *Advising the Secretary of Commerce, the President of the United States, and the administration on patent, trademark, and copyright protection*, and (3) *Advising the Secretary of Commerce, the President of the United States, and the Administration on the trade-related aspects of intellectual property.* The director of the USPTO is also the Undersecretary of Commerce for Intellectual Property (currently in 2007, Jon W. Dudas), and directly under his authority is the Commissioner of Patents (currently in 2007, John Doll), "responsible for all aspects of the patent granting process for the United States, more than 5,000 employees, and an annual budget of more than $970 million."[8]

2.2 Patents

Patents are granted by the USPTO usually for 20 years with the "'the right to exclude others from making, using, offering for sale, or selling' the invention in the United States or "importing" the invention into the United States." However, the patent holder must enforce their right if they are infringed often leading to litigation. U.S. Code Title 35 specifies the definition of patentable inventions: "whoever invents or discovers any **new and useful** [emphasis added] process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title."[9] Furthermore, the invention should be **novel** meaning that "the invention must not be fully anticipated by a prior patent, publication, or other state-of-the-art knowledge that is collectively termed 'prior art.' A **nonobvious** [emphasis added] invention must not have been readily within the ordinary skills of a competent artisan at the time the invention was made."[10] The process of acquiring a patent from the start of the patent application to either a patent grant or rejection through the USPTO is commonly called the patent prosecution process.

2.3 Patent Reform Act of 2007

Chairman Patrick Leahy (D-VT) introduced The Patent Reform Act (PRA) of 2007 (S.1145) into the Senate Judiciary Committee on April 18, 2007. The bill has bipartisan support in the Senate (e.g. Sen. Orrin Hatch (R-UT), Sen. Charles Schumer (D-NY), and Sen. John Cornyn (R-TX)). Chairman Howard Berman (D) introduced the House version (H.R. 1908) into the Subcommittee on Courts, the Internet, and Intellectual Property with bipartisan support from Ranking Member Howard Coble (R). The bill contains several controversial changes to the patent system including the first-to-invent system, willful infringement, prior user rights, USPTO rulemaking authority, changes to novelty requirements, and post-grant reviews. Two provisions in the bill particularly affecting small business are the definition of "micro-entity" relating to venue changes and apportionment damages, both of which are considered in later sections.

"The bill is largely the work of the Coalition for Patent Fairness, a group backed by Microsoft, Intel, Dell, and other high-tech and Wall Street companies."[11] The largest opponents

---

[8] Available at http://www.uspto.gov/biographies/bio_doll.htm. Last accessed on July 30, 2007.
[9] U.S. Code, Title 35, Part II, Chapter 10, Sec. 101. Available at http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=browse_usc&docid=Cite:+35USC101. Last accessed on July 30, 2007.
[10] "Patent Reform in the 110th Congress: Innovation Issues," by John R. Thomas and Wendy H. Schacht. Congressional Record Service. Pg. 3. May 7, 2007. Order Code RL33996.
[11] "Will Congress slam small inventors?," by Ann Therese Palmer. CNNMoney.com. June 19, 2007. Available at http://money.cnn.com/2007/06/18/magazines/fsb/patent_reform.fsb/index.htm. Last accessed on July 27, 2007.

of the bill are "the Coalition for 21st Century Patent Reform, representing pharmaceutical companies, multinationals such as GE, and some tech companies such as Motorola."[12] Other high-tech and pharmaceutical companies united against the bill include Amberwave, Texas Instruments, Cisco Systems, Proctor & Gamble, and Monsanto who held briefings at Congress to express their views.[13] The university system has also taken a position against the bill as many key provisions such as first-to-file and post-grant review also adversely affect them. This is not simply a battle of high-tech v. biopharma as is popularized by the media, but rather a battle of business models or the way in which companies research and patent their ideas. From the small business perspective, Jerry Mitchell, the president of the Midwest Entrepreneurs Forum and patent holder, states simply, "The bill leaves the little guy out in the cold."[14]

2.4 Small Business Administration

An independent agency, the U.S. Small Business Administration (SBA) has three purposes: (1) to aid, counsel, assist and protect the interests of small business concerns, (2) to preserve free competitive enterprise, (3) and to maintain and strengthen the overall economy of our nation. Started in 1953, The SBA now has regional offices throughout the country that support small business through workshops, counseling, contracts, and loan assistance. "SBA's current business loan portfolio of roughly 219,000 loans worth more than $45 billion makes it the largest single financial backer of U.S. businesses in the nation."[15] The purpose of the loans is to lower entry costs to large markets so that innovation is still possible. The definition of a small business has changed with different acts of Congress, but the responsibility has now fallen to the Office of Size Standards, which "develops and recommends small business size standards to the Size Policy Board and to the Administrator of SBA."[16] Finally, the SBA Office of Advocacy analyzes and recommends polices to agencies that consider how small businesses will be affected by regulatory rulemaking. "The Regulatory Flexibility Act (RFA) and Executive Order 13272 require federal agencies to determine the impact of their rules on small entities, consider alternatives that minimize small entity impacts, and make their analyses available for public comment."[17] This requires the USPTO to consider the Office of Advocacy's memorandums when issued. Recently, this occurred when the USPTO began issuing new polices on continuations (considered in a later section).

[12] Ibid.

[13] "Patent Reform Briefing" on June 14, 2007 and "How Does Patent Reform Affect Information Technology?" sponsored by the Advisory Committee to the Congressional Internet Caucus on June 27, 2007.

[14] "Will Congress slam small inventors?," by Ann Therese Palmer. CNNMoney.com. June 19, 2007. Available at http://money.cnn.com/2007/06/18/magazines/fsb/patent_reform.fsb/index.htm. Last accessed on July 27, 2007.

[15] "Overview & History." Available at http://www.sba.gov/aboutsba/history/index.html. Last accessed on July 31, 2007.

[16] "What is Small Business." Available at http://www.sba.gov/services/contractingopportunities/sizestandardstopics/size/index.html. Last accessed on July 31, 2007.

[17] "About Advocacy." Available at http://www.sba.gov/advo/about.html. Last accessed on July 31, 2007.

3 Issues & Findings

3.1 Patent Fees

The USPTO is one of the only U.S. agencies that currently supports itself through its own fees. Some say this creates a model of fiscal responsibility and efficiency needed throughout regulatory government agencies.[18] Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office, Jon Dudas, emphasized the importance of USPTO fees at a Senate Judiciary Hearing on June 6, 2007:

> *"Full access to user fees allows the USPTO to continue our successful model of disciplined focus on real measures that enhance quality and increase production, increase hiring and training, promote electronic filing and processing, provide telework opportunities for our employees and improve intellectual property protection and enforcement domestically and abroad."*[19]

What is pendency?

Pendency is the estimated time in months for a complete review of a patent application, from the filing date to issue or abandonment of the application.

The USPTO faces increasing demands from an increasing number of patent applications each year, (Figure 1), an increasing need for patent and copyright examiners (considered in a later section), and improving the quality of patent reviews by increased time per patent application. All of these considerations point to a larger budget for the USPTO. Commissioner of Patents, John Doll, estimates that there are nearly 800,000 patent applications waiting to be examined.[20] In conversations with patent examiners, some are starting "new" cases in 2007 that have filing dates in 2003. Average total pendency is greater than two years.[21]

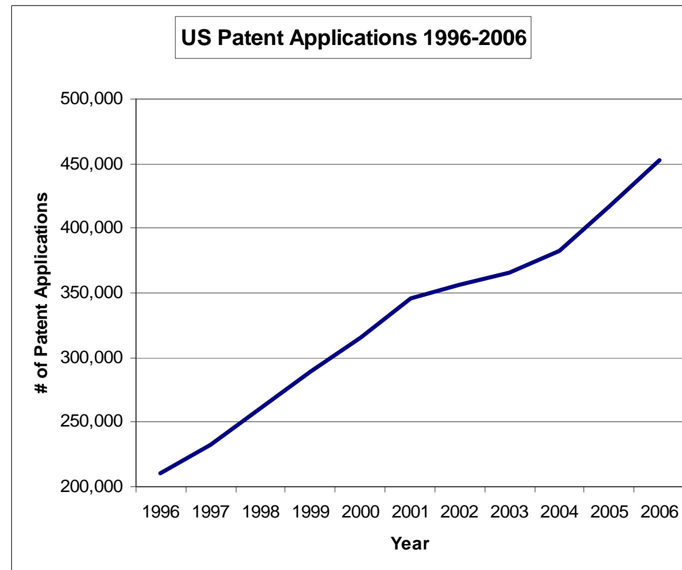
[18] "Patent Answers. "Available at http://www.uspto.gov/web/offices/com/oqm-old/patent_answers.htm. Last accessed on July 18, 2007.

[19] Statement of Jon W. Dudas, Under Secretary of Commerce for Intellectual Property and Director of the United States Patnet and Trademark Office, Before the Committee on the Judiciary, United States Senate, "Patent Reform: The Future of American Innovation", June 6, 2007. Available at http://judiciary.senate.gov/testimony.cfm?id=2803&wit_id=6506. Last accessed on July 10, 2007.

[20] Patent Backlog Spurs Demand for Examiners," by Stephen Barr of The Washington Post. January 30, 2007. Available at http://www.washingtonpost.com/wp-dyn/content/article/2007/01/29/AR2007012901782.html. Last accessed on July 25, 2007.

[21] Available at http://www.whitehouse.gov/omb/budget/fy2004/pma/patents.pdf. Last accessed on July 27, 2007.

Figure 1- Patent Applications Have More Than Doubled
In a Decade (1996-2006)



Source: US Patent Statistics, USPTO, Available at http://www.uspto.gov/go/taf/us_stat.pdf.
Last accessed on July 12, 2007.

3.1.1 Fees Cost Small Business

For new businesses that face numerous entry costs to compete in their industry (e.g. infrastructure, marketing, and R&D), filing patents to protect their intellectual property rights to a technology or process that they have developed can place a financial burden on these companies. Due to these skyrocketing costs (considered in a later section), some experts are even questioning if filing a patent is savvy business practice considering the patent fees, prototyping and preparation necessary for approval at the USPTO, patent protection and litigation costs faced domestically, but even more costly internationally.[22]

As small business has always been an integral and innovative part of American industry, Congress has reduced USPTO fees as specified in Title 35 of the U.S. Code by 50 percent for small entities.[23] Currently, small entities are classified to the USPTO as those businesses with 500 employees or less.[24] Patent fees vary from business to business depending upon the number of services requested from the USPTO, usually through an IP attorney. Factoring in the USPTO fees[25] — even at the reduced small entity rate — the attorney's fees, and other legal services that

[22] "SMALL BUSINESS: Get a patent only if you're sure it'll pay" by Jamie Herzlich.l Available at http://www.newsday.com/business/ny-bzherz5242397jun04,0,3015685.story?page=2&coll=ny-business-print. Last accessed on July 9, 2007.
[23] U.S. Code, Title 35, Part 1, Chapter 4, Section 41, (h). Avaliable at http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=browse_usc&docid=Cite:+35USC41. Last accessed on July 9, 2007.
[24] This classification system will be address in more depth in other sections.
[25] FY 2007 Fee Schedule, USPTO. http://www.uspto.gov/web/offices/ac/qs/ope/fee2007february01.htm. Last accessed on July 9, 2007.

a small business may need to finally acquire a patent, the average cost of filing a new patent usually ranges around $20,000 to $30,000.[26]

The General Accountability Office (GAO) conducted a study in 2003 to analyze the feasibility of acquiring and maintaining patents in foreign countries. "A company can acquire foreign patent protection in two ways: (1) by filing separately in each country or region where protection is desired or (2) by filing for patent protection in 120 countries at the same time through an international application established by the 1970 Patent Cooperation Treaty (PCT)..."[27] If we assume that a small business wants to be an international competitor in several countries rather than just one or two, the less costly method is to take advantage of the PCT. In the first phase of the PCT, the country of origin of the patent acts as an agent of the PCT treaty to start the international application process through search and examination procedures. In second phase, or national stage, the patent faces the fees of the individual countries that adhere to the PCT. For Europe, the European Patent Office (EPO) handles the affairs of their member states and those countries (Albania, Bosnia and Herzegovina, Croatia, Macedonia, Norway, and Serbia) that accede to EPO.[28] Each country requires maintenance fees for the patent to remain enforceable. The GAO's analysis estimates the cost for a 20 year period in several different countries (Figure 2).

European Patent Office Member States

Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Monaco, Netherlands, Poland, Portugal, Romania, Slovenia, Slovakia, Spain Sweden, Switzerland, Turkey, United Kingdom

[26] Average number based on anonymous interviews with intellectual property attorneys. Similar figures can be found on numerous IP law firm websites. Available at http://www.patent.net/3.htm and http://www.dennemeyer.com/documents/DEN_BuildingIAM.pdf. Last accessed on July 9, 2007.
[27] "Expert's Advice for Small Business Seeking Foreign Patents," GAO-03-910, June 2003, pg. 42
[28] "Member states of the European Patent Organisation" Available at http://www.epo.org/about-us/epo/member-states.html. Last accessed on July 9, 2007.

Figure 2- Estimated Costs Involved in Maintaining a Foreign Patent in Nine Countries for 20 Years

Country	Cost in U.S. dollars
Canada	$1,510
France	5,001
Germany	13,520
Ireland	4,637
Italy	6,002
Japan	22,783
South Korea	18,910
Sweden	5,552
United Kingdom	4,903
European Patent Office renewal fees	725
Total	**$83,543**

Sources: Canadian Intellectual Property Office, European Patent Office, German Patent and Trademark Office, Irish Patents Office, Italian Patent and Trademark Office, Japanese Patent Office, Korean Intellectual Property Office, United Kingdom Patent Office, and WIPO.

Notes: Exchange rates are based on data from DRI-WEFA, *World Outlook Comparison Tables, Forecast Data, 2001,* fourth quarter, and DRI-WEFA, *Monthly World Outlook* (Philadelphia:DRI-WEFA, Feb. 15, 2002). Exchange rates are based on an average exchange rate forecast for years 2001-2005 and years 2006-2020.

Maintenance fees are expressed in current year dollars because of a lack of information about the timing and amount of future expenditures for patent maintenance.

Renewal fees are payable to the European Patent Office for the years before the European Patent Office grants the patent. In our scenario, we assume the European Patent Office grants the patent in year 5. As a result, the company must pay a renewal fee of $351 in year 3 and $374 in year 4 to the European Patent Office. The figure for European Patent Office renewal fees in the table reflects fees for years 3 and 4 and the maintenance fees for designated member states for years 5-20.

Source: "Expert's Advice for Small Business Seeking Foreign Patents," GAO-03-910, June 2003, pg. 52

In addition, each stage of the international patent process must rely on attorneys from the respective countries. Figure 3 displays the total costs, including patent office fees and legal fees, required to acquire and maintain a patent in the international market for a 20 year period.

Figure 3- Estimated Total Foreign Patent Costs

Stage	Costs in U.S. dollars
International stage costs	$2,100
U.S. attorney and foreign representative fees at the international stage	<10,000-20,000
National stage costs	13,417
U.S. attorney and foreign representative fees at the national stage	<30,000-80,000
Maintenance fees	83,543
U.S. attorney and foreign representative fees during the maintenance stage	<20,000-130,000
Total	**$<159,060-$329,060**

Source: GAO analysis of sources cited in table 4-8.

Source: "Expert's Advice for Small Business Seeking Foreign Patents," GAO-03-910, June 2003, pg. 54

Despite the fact that the GAO's study is helpful and provides a baseline estimate for understanding international patent fees, rising costs, and increased competition the intellectual property world, the study is already out-of-date as fees increased in 2004; the study was conducted in 2003. Considering these large costs for international patents, it is no surprise that many small businesses cannot compete with high entry requirements. In light of the above

considerations, higher fees seem to be necessary for a fully functioning and quality patent system. At the same time, higher fees will negatively impact small business which continues to contribute in a major way to our country's innovative technological progress.

3.1.2 Problems with Classification for Reduced Patent Fees

Currently, "The size standard set forth in 13 CFR 121.802 is the size standard 'for the purpose of paying reduced patent fees' and thus appears to be limited to payment of patent fees." In discussions with representatives from the Office of Advocacy for the Small Business Administration involved in correspondences[29] with the USTPO, the USPTO is not currently pursuing the development of a new classification system that would further differentiate small businesses and/or other small entities. Since the USPTO "does not collect data on or count the specific entities that are submitting a patent application,"[30] important statistics are lacking involving the relationship between small business and patents. Furthermore, due to this lack of a detailed classification system and data analysis, the current classification system "does not provide an accurate estimate of the number of small entities affected by the agency's rules."[31] Furthermore, the Office of Advocacy representatives also noted that licensing is difficult for small businesses who may lose their status should they license their patent to be used by a larger entity. In essence, small businesses are "punished" in the form of higher fees at the USPTO for licensing and collecting royalties from their patents.

SBA Small Business Size Standard

(a) Whose number of employees, including affiliates, does not exceed 500 persons; and (b) Which has not assigned, granted, conveyed, or licensed (and is under no obligation to do so) any rights in the invention to any person who made it and could not be classified as an independent inventor, or to any concern which would not qualify as a non-profit organization or a small business concern under this section.
13 CFR 121.802

Undersecretary Dudas has proposed one solution to this classification problem in his testimony before the U.S. Senate advocating a "micro-entity" status be included in the Patent Reform Act of 2007.

> "*Accordingly, the USPTO recommends that the bill be amended to define a "micro-entity" status that would ensure fair access to the patent system for entry-level type inventors. The definition of "micro-entity" could be based on a number of factors including: income level; number of patent applications filed; lack of representation by a registered practitioner; and lack of assignment activity... That status also could be used to identify inventors eligible for reduced fees and other treatment and assistance designed to ensure fair access to the patent system..*"[32]

[29] Regarding proposed rulemaking authority "Size Standard for Purposes of United States Patent and Trademark Office Regulatory Flexibility Analysis for Patent-Related Regulations; 71 Fed. Reg. 38388 (July 6, 2006).
[30] Letter dated 8/3/2006 from Office of Advocacy to U.S. Patent and Trademark Office. Available at http://www.sba.gov/advo/laws/comments/pto06_0803.html. Last accessed on July 12, 2007.
[31] Ibid.
[32] Statement of Jon W. Dudas, Under Secretary of Commerce for Intellectual Property and Director of the United States Patnet and Trademark Office, Before the Committee on the Judiciary, United States Senate, "Patent Reform:

While this is an indeed a significant step towards streamlining the process for small business and/or other small entities, this is still a very broad classification that needs refining. Even though micro-entity status has been considered for venue and application restrictions in the PRA, Undersecretary Dudas' recommendations as they apply to patent fees and micro-entities are not in current language of the bill. The standard Congress, specifically the Judiciary Committee, uses for a micro-entity seems to be arbitrarily selected in terms of income and patents filed. After searching congressional records for hearings on how these provisions will affect small business, only one hearing, is found in the House Committee on Small Business on March 29, 2007. "The committee's oversight stretches beyond the Small Business Administration… to also include issues and legislation that directly impact entrepreneurs."[33] Currently, House Committee on the Judiciary bill states:

> *"For purposes of this title, the term 'micro entity' means an applicant for patent who…(1) qualifies as a small entity as defined in regulations issued by the Director; (2) has not been named on five or more previously filed patent applications; (3) has not assigned, granted, or conveyed, and is not under an obligation by contract or law to assign, grant, or convey, a license or any other ownership interest in the application; and (4) does not have a gross income, as defined in section 61(a) of the Internal Revenue Code of 1986, exceeding 2.5 times the Average Gross Income (AGI) as reported by Secretary of Labor in the calendar year immediately preceding the calendar year in which the examination fee is being paid.*" [34]

The number of patent applications filed is not necessarily a good indication of how many have made it through the patent prosecution process past the application stage. Average gross income varies by industry so defining an arbitrary number will benefit some industries to the detriment of others.

At first, it might appear that Congress is moving in the right direction by making the micro-entity section applicable to the new restrictions placed on patent applicants to "*submit a search report and other information and analysis relevant to patentability. An application shall be regarded as abandonment if the applicant fails to submit the required search report...*"[35] However, the standard used in the bill of a "micro-entity" could create more problems as it applies to venue. Venue provisions in approved House amendments give preference to the "micro-entity" if they are the plaintiff by having court proceedings in their judicial district.[36]

The Future of American Innovation", June 6, 2007. Available at http://judiciary.senate.gov/testimony.cfm?id=2803&wit_id=6506. Last accessed on July 10, 2007.

[33] "Committee Reviews Impact of Patent Reform on Nation's Small Businesses." House Committee on Small Business Hearing. March 29, 2007. Available at http://www.house.gov/smbiz/PressReleases/2007/pr-3-29-07-patent-reform.htm. Last accessed on July 27, 2007.

[34] Amendment in the Nature of a Substitute to H.R. 1908 Offered by Mr. Berman of California, Mr. Smith of Texas, Mr. Conyers of Michigan, and Mr. Coble of North Carolina. July 19, 2007. Pgs. 54-55. Available at http://www.ipo.org/AM/Template.cfm?Section=Legislative_Action_Center&TEMPLATE=/CM/ContentDisplay.cfm&CONTENTID=15540. Last accesed on July 26, 2007.

[35] Ibid. Section 11. Pg. 54.

[36] Amendment to the Amendment in the Nature of Substitute to H.R. 1908 Offered by Ms. Zoe Lofgren of California, Mr. Smith of Texas, Mr. Cannon of Utah, and Mr. Davis of Alabama. July 19, 2007. Available at http://www.ipo.org/AM/Template.cfm?Section=Legislative_Action_Center&CONTENTID=15541&TEMPLATE=/CM/ContentDisplay.cfm. Last accessed on July 26, 2007.

Consider though, if a "micro-entity" sues another "micro-entity." This language gives preference to plaintiffs. If the plaintiff is residing in a district favorable to the plaintiff, then increased litigation will occur to the detriment of other defendants whether they are small or large businesses.

3.1.3 SBIR Program Currently Assists Small Businesses

The purpose of the Small Business Innovation Research (SBIR) Program is to "strengthen the role of innovative small business"[37] and satisfying Federal R&D goals by increasing commercialization and stimulating innovation through funding. Participating agencies are currently required to allocate 2.5 percent of their extramural budget for SBIR grants. [38] Most forms for SBIR grants and contracts are fairly standardized across agencies to meet the SBIR Policy Directive. Guidelines for preparing a budget include Direct Labor, Overhead Cost, Other Direct Costs (ODCs), General and Administrative (G&A) Costs, and Profit/Cost Sharing.[39] The SBIR program is completed in three phases:

- "Phase I is the startup phase. Awards of up to $100,000 for approximately 6 months support exploration of the technical merit or feasibility of an idea or technology.
- Phase II awards of up to $750,000, for as many as 2 years…the R&D work is performed and the developer evaluates commercialization potential.
- Phase III is the period during which Phase II innovation moves from the laboratory into the marketplace. No SBIR funds support this phase."[40]

In addition, applicants must meet these requirements: American owned and operated, company size less than 500 employees, for-profit, and principal researcher employed by business.[41] Currently, the SBIR Policy Directive does not include any language specifying patent fees and legal fees to be used as part of the Phase II processes. In recent conversations with current and past recipients of SBIR grants, none have been aware that patent and legal fees could be included.

SBIR Participating Agencies

- *Department of Agriculture*
- *Department of Commerce*
- *Department of Defense*
- *Department of Education*
- *Department of Energy*
- *Department of Health & Human Services (NIH)*
- *Department of Homeland Security*
- *Department of Transportation*
- *Environmental Protection Agency*
- *National Aeronautics and Space Administration*
- *National Science Foundation*

[37] "Small Business Innovation Research Policy Directive; Notice," Small Business Administration, Federal Register: Vol. 67, No. 185, (1), September 24, 2002.
[38] "Small Business Innovation Research Policy Directive; Notice," Small Business Administration, Federal Register: Vol. 67, No. 185, (9)(f)(1), September 24, 2002.
[39]"Guidelines for Preparing Budget Summary." Available at http://www.sbir.nasa.gov/SBIR/sbirsttr2005/solicitation/Forms/SBIR/formC.pdf. Last accessed on July 13, 2007.
[40] "SBIR-STTR" Available at http://www.sba.gov/aboutsba/sbaprograms/sbir/sbirstir/sbir_sbir_description.html. Last accessed on July 13, 2007.
[41] Ibid

Policy Recommendations

Patent Fee Inclusion for SBIR Proposals

The SBIR program should be used for funding fees at the USPTO and associated legal fees. Specifically, an option should be presented to applicants in the Guidelines of each agency under ODCs for Patent Fees and Related Expenses be included in the Phase II proposal of the SBIR program. This option will be beneficial to support the goals of the SBIR program by promoting technological innovation through commercialization. Recipients of the Phase II funding will be more likely to utilize the patent process and the associated costs to protect their intellectual property and improve the business position. After patents are granted through this part of the program, private sector funding for Phase III will be further encouraged as funding sources will be guaranteed a new innovative patent that is ready to be commercialized. Venture capitalists seek these benefits in small businesses pursuing patents. John Neis, Managing Director of Venture Investors, reveals: "For small, venture [capitalist] back[ed] companies, the critical component to achieving that outcome is doing so in a manner that eliminates ambiguity about patent validity as quickly as possible, and in a manner that avoids unnecessary costs."[42]

The SBIR program can speed small businesses patents and reduce costs through this slight modification to current procedures. Specifically, Congress should hold a hearing with the Small Business Administration creating pressure for internal rulemaking to be changed allowing this option. If this is not successful, Congress should, through the respective Small Business Committees both in the House and Senate, authorize the Small Business Administration to expand SBIR grants to include this option.

Impact

Small business will be able to use SBIR grants for patent fees, which will overall reduce their indirect cost of business operations and remove market barriers. Commercialization in the Phase III part of the SBIR program will be more likely to succeed as most costs and processes of patent application have already been started in Phase II. Existing grants would not need to be expanded as an expense of $20,000-$30,000 is nominal compared to a Phase II grant of $750,000.

Enhanced Classification for Small Business at the USPTO

As their oversight includes legislation, the Committee on Small Business should be further informed in developing a standard for "micro-entity." More relevant testimonies in regard to this specific part of the legislation should be considered before the Committee on the Judiciary begins developing standards based on gross income or any other indicator. Furthermore, the USPTO should develop a better system of classification for small businesses by a range of employee sizes, income levels, or number of existing patents filed. The SBA Office of Size Standards could use data that is generated from these results to develop better systems of standards for small businesses that are involved in the patent process rather than arbitrary selections as Congress did in the PRA of 2007 for "micro-entity status." With newer standards, the SBIR process would be enhanced by targeting small businesses that are actually in the start-

[42] "Patent Reform: Impact on Small Venture-Backed Companies," House Small Business Committee Meeting, March 29, 2007. Testimony of Mr. John Neis, CFA, Managing Director, Venture Investors.

up phase with only a few employees and no patents, in contrast to a mature business that is reasonably profitable with numerous patents and approximately 400 employees. Also, improved standards will not adversely affect a small business if it so chooses to license its software or other patents to a larger business.

Impact

The Office of Size Standards will need to work jointly with the USPTO to develop an adequate classification system and in compliance with the Paperwork Reduction Act.[43] Costs will be accrued in terms of data processing and collection as well as human resources. However, this classification system is necessary as identification of differences is crucial for an efficiently operating SBIR program that will promote innovative ideas and commercialization through small business.

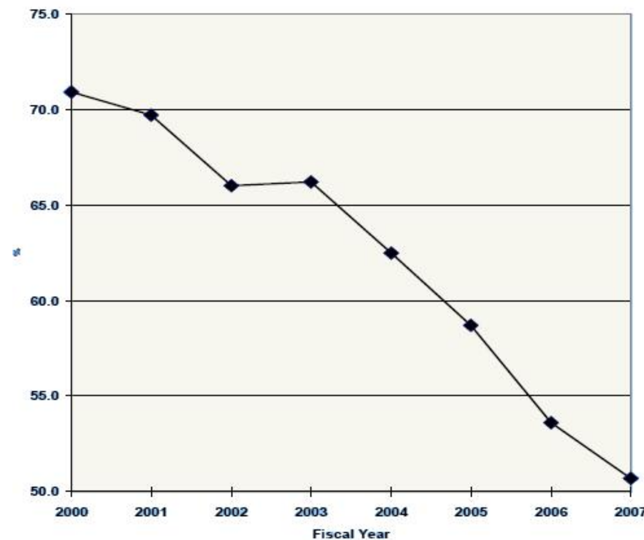
3.2 Patent Examiners

An important aspect of the patent process that invariably affects small businesses is the interaction with the USPTO while a patent is being approved after fees have been paid. Small businesses already faced with legal fees to turn their idea into a formal legal document must also work with patent examiners to achieve the patent that they intended. A common observation among IP professionals when dealing with patent suits and litigation (considered in a later section) is that the quality of the patent is lacking. That is, the interactions specifically between patent examiners and patent applicants during the patent prosecution process need to be improved. Patent examiners are stressed with only an average of 18 cumulative hours spent on each patent application.[44]

Recently, the USPTO has taken steps to improve quality of patents most noticeably with a lower allowance rate (Figure 4) at 54 percent in 2007. Although some argue that fewer patents being approved is an indication of patents being examined more thoroughly, the problems are only being passed on later in the process rather than being solved from the outset. The allowance rate decrease could be a "short range measure, then there will be massive churning that will only flood the system with additional work without real disposal of cases."[45]

[43] U.S. Code, Title 44, Chapter 35
[44] Available at http://www.whitehouse.gov/omb/budget/fy2004/pma/patents.pdf. Last accessed on July 27, 2007.
[45] "The USPTO's 54 % Allowance Rate," by Harold Wegner. December 30, 2006. Available at http://www.ipfrontline.com/depts/article.asp?id=13796&deptid=5. Last accessed July 19, 2007.

Figure 4- USPTO Allowance Rate



Source: Goodwin Proctor Presentation on Patent Reform by Stephen Schreiner. June 9, 2007.

While decreasing the amount of patents approved may be a good interim, but questionable step by the USPTO, addressing the root of the problem by increasing the amount of experienced patent examiners will better improve the system.

3.2.1 Patent Examiners and the USPTO

While the USPTO has had admirable financial management as shown by their statements, the USPTO has struggled with human resource management for years. Even as early as 1999, tensions have existed between the USPTO and the three associations representing the employees of the USPTO.[46] Patent examiners are represented by the Patent Office Professional Association (POPA). The New Millenium Agreement of 2001 between the USPTO and POPA negotiated a 10 or 15 percent salary increase (depending upon General Schedule (GS) level) over the GS pay scale.[47] In August 2006, Commissioner for Patents John Doll explained that although a 7 percent increase in salary had been approved for patent examiners, the Millennium Agreement could not be implemented, because of Office of Personnel Management (OPM) regulations limiting the amount of pay increases.[48] Despite these labor negotiations, not prioritizing enforcing existing agreements such as the Millennium Agreement displays a lack of respect for patent examiners.

A review of the USPTO by National Academy of Public Administration found that one of the key reasons entry-level attrition remains high is that simply the pay is low in relation to the

[46] "Patent Answers. "Available at http://www.uspto.gov/web/offices/com/oqm-old/patent_answers.htm. Last accessed on July 18, 2007.

[47] "Agreement on Initiatives for a New Millennium Between The United States Patent and Trademark Office and The Patent Office Professional Association." Pg. 1. Available at http://www.popa.org/pdf/agreements/pay-final.pdf. Last accessed on July 19, 2007.

[48] "Commissioner's Corner." August 28, 2006. Available at http://www.popa.org/pdf/misc/doll-2006-08-28.pdf. Last accessed on July 19, 2007.

DC area cost of living.[49] If the pay is already low for cost of living purposes, engineers who generally regard themselves as professionals and able to be paid better at other competing engineering firms have no real long-term incentive to remain with the USPTO. Administrative staff problems also continue to burden patent examiners as many make simple mistakes requiring patent examiners to do the work again.[50] However, others are extremely motivated since the job offers other benefits such as graduate or law school reimbursement, flexible schedules, and even working from home. Even with those motivated by flexible schedules and pay incentives, the pressure to speed the patent process often leaves patent examiners with the feeling that they could have done a better quality job. Patent examiners think that management does not completely understand the process and the pressures they have leading to distrust within the organization.[51] With these considerations, no surprise comes from the fact that patent examiners have a low morale.[52]

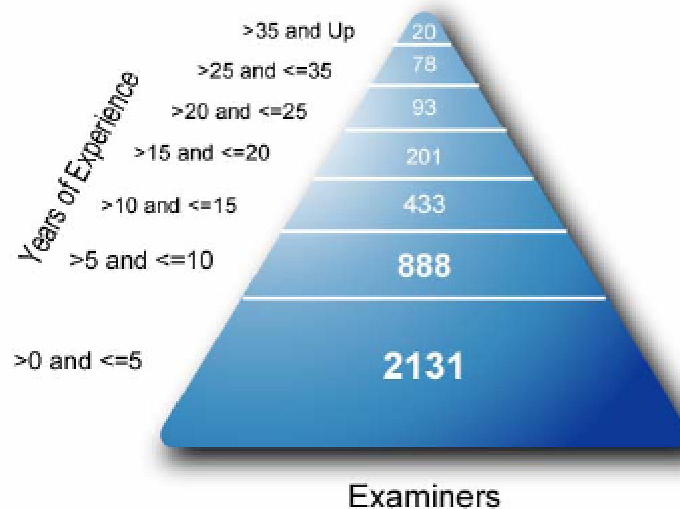
3.2.2 Efforts by the USPTO to Increase Examiner Retention

The USPTO has made a serious effort to increase patent examiners by offering signing bonuses and numerous benefits. "Faced with an urgent need for more patent examiners, USPTO hired about 940 new examiners in fiscal 2005, a 25 percent staff increase, said Jon Dudas, the Agency's director. 'We plan to hire an additional 1,000 patent examiners each fiscal year through fiscal year 2011.'"[53] However, maintaining an experienced and skilled patent examiner workforce continues to be a problem. Among government careers, patent examiners have the third highest turnover rate.[54] Currently, 55 percent of the workforce has less than five years of experience (Figure 5). This high turnover rate affects the quality of the patent process as "[m]ost patent professionals say the steep learning curve means that it takes three to five years to attain proficiency."[55] The National Research Council found that "there is no substitute for having adequate numbers of trained personnel with sufficient time to exercise their considered judgment on the cases assigned to them."[56]

---

[49] U.S. Patent and Trademark Office: Transforming to Meet the Challenges of the 21st Century, National Academy of Public Administration, August 2005. Pg. 82. Available at http://www.napawash.org/Pubs/PTO8-25-05.pdf. Last accessed on July 18, 2007.
[50] "PATNEWS: More PTO problems not addressed in the patent reform bill." Email sent on July 27, 2007. Comments by readers of PATNEWS maintained by Greg Aharonian of the Internet Patent News Service.
[51] "USPTO Has Made Progress in Hiring Examiners, but Challenges to Retention Remain," GAO-5-720, June 2005. Pg. 28. Available at http://www.gao.gov/new.items/d05720.pdf. Last accessed on July 19, 2007.
[52] Ibid.
[53] "298 pages of problems at USPTO," by Florence Olsen. September 19, 2005. Testimony from Jon Dudas on Sept. 8, 2005. Available at http://www.fcw.com/article90830-09-19-05-Print. Last accessed on July 18, 2007.
[54] U.S. Patent and Trademark Office: Transforming to Meet the Challenges of the 21st Century, National Academy of Public Administration, August 2005, pg. 80. Available at http://www.napawash.org/Pubs/PTO8-25-05.pdf. Last accessed on July 18, 2007.
[55] Ibid.
[56] A Patent System For the 21st Century. National Research Council of the National Academies, 2004, pg. 104.

Figure 5- Years of Service for Utility/Design Examiners Onboard as of 4/30/05



Source: U.S. Patent and Trademark Office: Transforming to Meet the Challenges of the 21st Century, National Academy of Public Administration, August 2005. Available at http://www.napawash.org/Pubs/PTO8-25-05.pdf. Last accessed on July 18, 2007.

3.2.3 Efforts by the USPTO to Improve Patent Prosecution

The USPTO has taken steps to improve the speed of the patent prosecution process through rulemaking but these proposed changes often adversely affect small business. Patent examiners are judged by the incentive based structure of counts and customer service elements in the USPTO negotiated in the Millennium Agreement. Counts are received for rejections and disposals.[57] Rejections continue the patent prosecution process further as applicants usually try to meet requirements of the patent examiners. "Disposals include allowances, abandonments, requests for continued examination, an answer to an appeal, or the start of interference if the application is otherwise in a condition for allowance. If the examiner allows all the claims in the first office action, two counts are received."[58] Essentially, examiners are rewarded for continuations, which led to increases. The USPTO felt continuations prolonged existing applications and slowed examiners from reviewing new applications. However, a Stanford Law study found that: "The extent and nature of the use [of continuation applications] casts significant light on the purposes of continuation applications, suggesting that different industries use continuations for different purposes. Even given the existence of a new and quicker procedure for continuing to fight with the examiner, many applicants persist in using the older continuation procedure in order to delay issuance of their patents or because they are seeking to construct a multi-patent fence."[59] The USPTO decided to exercise their rulemaking authority to

[57] "1705 Examiner Docket, Time, and Activity Recordation," Manual of Patent Examining Procedure. August 2006. Available at http://www.uspto.gov/web/offices/pac/mpep/documents/1700_1705.htm#sect1705. Last accessed on July 23, 2007.

[58] "Made to Measure: How an antiquated performance measure leads to bad patents," by Dr. Lee Hollaar. Pg. 1. May 2, 2007. Available at http://digital-law-online.info/papers/lah/MadeToMeasure.pdf. Last accessed on July 23, 2007.

[59] "Is the Patent Office a Rubber Stamp?" by Mark Lemley and Bhaven Sampat. July 7, 2007. Stanford Public Law Working Paper No. 999098.

limit the number of continuations filed.[60] Before agency rulemaking authority is authorized, in compliance with the Regulatory Flexibility Act of 1980, agencies must "determine a rule's economic impact on small entities and consider significant regulatory alternatives that achieve the agency's objectives while minimizing the impact on small entities."[61] The SBA Office of Advocacy provided comments stating that:

> *"Small entities informed Advocacy that limiting patent applicants to a single continuation would negatively impact the most commercially viable and important patents. Similarly, they assert that, in many cases, the most valuable inventions are based on continuation applications."*[62]

What are continuations?

"Continued examination practice, including the use of both continuing applications and requests for continued examination, permits applicants to obtain further examination and advance an application to final agency action. This practice allow applicants to craft their claims in light of the examiner's evidence and arguments, which in turn may lead to well-designed claims…"

This continuation policy has only increased the number of appeals backlogging the system in another area. [63] The problem has just passed on to another part of the process rather than treating the symptom. Regulations limiting the size of continuations may be needed, but lack of enough patent examiners to achieve quality patents remains the real problem or to review continuation applications, which seem to be an integral part of the small business patent process. The USPTO will soon release the new rules for continuations later in the summer of 2007. The final regulation will still put an extra burden on small businesses which must employ more resources to submit more detailed continuations. "The revised rules would require that second or subsequent continuation applications and second or subsequent requests for continued examination of an application include a showing as to why the amendment, argument, or evidence presented was not previously submitted."[64] This regulation assumes that the applicant is at fault if continuations are filed, rather than a patent examiner who may have rejected the application to achieve further counts.

The current count system for patent examiner performance also causes other problems besides increasing continuations. Technologies that take longer to examine are not charged extra

---

[60] "Changes To Practice for Continuing Applications, Requests for Continued Examination Practice, and Applications Containing Patentably Indistinct Claims." USPTO, Docket No.: 2005-P-066, RIN 0651-AB93. January 24, 2006. Available at http://www.uspto.gov/web/offices/com/sol/og/2006/week04/patcntn.htm. Last accessed on July 23, 2007.

[61] "Comments in response to Changes to Practice for the Examination of Claims in Patent Applications and Changes to Practice for Continuing Applications, Requests for Continued Examination Practice, and Applications Containing Patentably Indistinct Claims." Letter date April 27, 2006 by SBA Office of Advocacy. Available at http://www.sba.gov/advo/laws/comments/pto06_0427.pdf. Last accessed on July 23, 2007.

[62] Ibid.

[63] "The USPTO's 54 % Allowance Rate," by Harold Wegner. December 30, 2006. Available at http://www.ipfrontline.com/depts/article.asp?id=13796&deptid=5. Last accessed July 19, 2007.

[64] "Changes to Practice for Continuing Applications, Requests for Continued Examination Practice, and Applications Containing Patentably Indistinct Claims." Available at http://www.reginfo.gov/public/do/eoViewRule?ruleID=273406. Last accessed on July 26, 2007.

fees. Thus, examiners are encouraged to restrict requirements from applicants on long applications so that multiple applications must be filed for more counts.[65]

Policy Recommendations

Increased Salaries and Retention Incentives for Patent Examiners

Delayed processing of patents, limited time for prior art searches, inexperienced patent examiners all lead to poor patent quality. Increased litigation and costs for businesses that should be spending their financial resources on more R&D rather than court costs can be attributed to overburdened patent examiners. From a business perspective or just plain common sense, employees who are motivated and happy will deliver better quality work and productivity. Immediate improvement is needed to enable businesses to concentrate on innovation rather than patent prosecution and litigation. An increase in patent examiner hiring does not solve the problem, as retaining experienced patent examiners is the real challenge. Better incentives should be in place to retain patent examiners for a longer time period. The short-term solution is for Congress to authorize increased salaries and retention incentives for patent examiners that compete with the industry and meet cost of living expenses. Appropriation of funds should be accomplished through the increased fees recommend in the previous section and if necessary temporary funding from other government revenue sources.

Impact

An inefficient patent system due to a shortage of patent examiners adversely affects small businesses greater than those with financial resources to deal with the system. As these innovative small businesses may be waiting for approval of a few patents upon with which they have built their business model, larger companies can endure the process as revenues from other sources already exist. The cost of an increased number of employees is hard to predict, but certain measures can be used to assess when workforce needs have been met. Indicators include an overall reduction in the time for the patent prosecution process, surveys of employees which indicate motivation and enjoyment of work, and reduction in the current backlog of existing patent applications.

Better System of Evaluating Patent Examiners

Hiring a human resources consulting agency to analyze problems and identify steps to improve the interface between employees and management could provide a long-term solution. In the short-term, however, immediate changes should be made to the count system and the way that patent examiners are rewarded for the applications they complete. Although the USPTO thinks that the new revised rules for continuations may improve the process, small business are burdened with more preparation time for successive continuations. The USPTO should consider that the count system for patent examiner performance may also be at fault. Recommendations

[65] "Made to Measure: How an antiquated performance measure leads to bad patents," by Dr. Lee Hollaar. Pgs. 2-3. May 2, 2007. Available at http://digital-law-online.info/papers/lah/MadeToMeasure.pdf. Last accessed on July 23, 2007.

by Dr. Lee Hollaar, Professor at the University of Utah, should also be implemented: "USPTO can then determine the factors that require additional examiner effort that are within the control of the applicant, such as the nature of the claims and when they are presented or the submission of prior art. For each of those factors, an appropriate surcharge and examiner performance credit should be determined."[66] This would also include additional charges for technologies that require a greater amount of patent examiner time.

Impact

Improved evaluation methods for patent examiners will reduce not only the backlog of patent applications since less time will be spent on continuations, but also lead to streamlining the process at later stages such as during patent appeals or in review of patent infringement cases. The cost of this new evaluation system is difficult to quantify but time and labor will be spent developing a better system, compromising with POPA, and the patent examiners learning curve as they adjust to newer evaluations. Without these improvements, the same problems will persist and risk the USPTO developing more regulations such as the new rule for continuations that only burden applicants.

3.3 Damages

In cases where a patent is infringed and a court awards damages to the infringed upon or claimant, the Federal court decisions *Rite-Hite v. Kelley* and *Georgia-Pacific Corp.* v. *United States Plywood Corp* outline various factors governing damage awards. "[I]n the *Rite-Hite* case, the Federal Circuit reviewed the background and rationale of the entire market value rule, and confirmed that patent infringement damages should be based on the full value of the infringing product or process in those instances where the patented feature is the basis for customer demand for the entire product or process.[67] This expansion of the royalty base beyond the patented invention requires that the patentee establish that the patented feature is the basis for the market demand for the entire product or process."[68] The *Georgia-Pacific* case establishes in common law that the infringer will in most cases pay a reasonable royalty which is at least the value of the patented material. However, the *Georgia-Pacific* guidelines allow courts to use their discretion as to what how damages will be awarded.

---

[66] "Made to Measure: How an antiquated performance measure leads to bad patents," by Dr. Lee Hollaar. Pg. 10. May 2, 2007. Available at http://digital-law-online.info/papers/lah/MadeToMeasure.pdf. Last accessed on July 23, 2007.

[67] *Rite-Hite Corp. v. Kelley Co., Inc*, 56 F.3d 1538, 1549 (Fed. Cir.) (*en banc*), cert. denied, 116 S. Ct. 184 (1995).

[68] "Reform" of Patent Damages: S. 1145 and H.R. 1908," by William C. Rooklidge. Pg. 2 Available at http://www.patentsmatter.com/press/pdfs/Patent_Damages_Reform_Rooklidge.pdf. Last accessed on July 26, 2007.

The *Georgia-Pacific* Factors

- *The royalties received by Georgia-Pacific for licensing the patent, proving or tending to prove an established royalty.*
- *The rates paid by the licensee for the use of other similar patents.*
- *The nature and scope of the license, such as whether it is exclusive or nonexclusive, restricted or nonrestricted in terms of territory or customers.*
- *Georgia-Pacific's policy of maintaining its patent monopoly by licensing the use of the invention only under special conditions designed to preserve the monopoly.*
- *The commercial relationship between Georgia-Pacific and licensees, such as whether they are competitors in the same territory in the same line of business or whether they are inventor and promoter.*
- *The effect of selling the patented specialty in promoting sales of other Georgia-Pacific products; the existing value of the invention to Georgia-Pacific as a generator of sales of nonpatented items; and the extent of such derivative or "convoyed" sales.*
- *The duration of the patent and the term of the license.*
- *The established profitability of the patented product, its commercial success and its current popularity.*
- *The utility and advantages of the patent property over any old modes or devices that had been used.*
- *The nature of the patented invention, its character in the commercial embodiment owned and produced by the licensor, and the benefits to those who used it.*
- *The extent to which the infringer used the invention and any evidence probative of the value of that use.*
- *The portion of the profit or selling price that is customary in the particular business or in comparable businesses.*
- *The portion of the realizable profit that should be credited to the invention as distinguished from any nonpatented elements, manufacturing process, business risks or significant features or improvements added by the infringer.*
- *The opinion testimony of qualified experts.*
- *The amount that Georgia-Pacific and a licensee would have agreed upon at the time the infringement began if they had reasonably and voluntarily tried to reach an agreement.*

Source: *Georgia-Pacific Corp.* v. *United States Plywood Corp.,* 318 FSupp 1116, 6 USPQ 235 (SD NY 1970). Available at http://www.aicpa.org/PUBS/jofa/nov2004/newman.htm. Last accessed on July 26, 2007.

In many cases, the entire market value of the product will be used as the primary factor. In some cases, this seems like the most reasonable method. "In *Bose Corp. v. JBL, Inc*., the United States Court of Appeals for the Federal Circuit affirmed the district court's application of the entire market value rule after finding that the inventive component was an integral functioning element of the speaker system that resulted in improved performance that drove customer demand, and that it was this improved performance that the infringer sought to achieve by incorporating the patented invention into its speaker systems."[69] However, some legal analysts note that courts often use this entire market value as it is much easier to compute rather than trying to analyze the specific monetary contribution of the patent, which can be hard to determine. In other cases, the apportionment factor will be used as was developed in the *Georgia-Pacific* case.

Since the factors employed and damages are subject to court interpretation, no surprise comes from the fact that frequently the "wrong method" may have been used and court damages are overstated. Damages that are overstated typically follow from using the entire market value rule which gives the maximum award. These are the cases which the media and the large

[69] Ibid. Pg. 11

corporations that are sued often highlight what is wrong with in the system. Alcatel-Lucent won $1.52 billion from Microsoft where damages where calculated "by multiplying Windows sales volumes and PC sales prices worldwide since May 2003."[70] Instead of using the apportionment method and determining the specific value of the MP3 technology that Microsoft infringed upon, the market value of Windows was used.

However, the cases that do not get as much attention are those where the infringed upon does not receive a substantial amount of money when the damages are understated. Understated damages would follow from using the apportionment method where the infringed upon only receives the value of the contribution of their product. However, these cases do not happen as often and to such a great scale since the entire market value rule and the *Rite-Hite* case have been used extensively in patent litigation. Changing the rule to apportionment would see an increase in these types of cases. Those cases would not be covered by the media since large quantities of money are not being awarded. Obviously, both cases, overstated and understated damages, are problems, but since those which must pay large sums of money in entire market value have resources to lobby Congress. Larger multinational corporations promoting the bill like Microsoft, Intel, and Dell seek to use the apportionment rule as the preferred method.

> "*RELATIONSHIP OF DAMAGES TO CONTRIBUTIONS OVER PRIOR ART- The court shall conduct an analysis to ensure that a reasonable royalty under paragraph (1) is applied only to that economic value properly attributable to the patent's specific contribution over the prior art. In a reasonable royalty analysis, the court shall identify all factors relevant to the determination of a reasonable royalty under this subsection, and the court or the jury, as the case may be, shall consider only those factors in making the determination. The court shall exclude from the analysis the economic value properly attributable to the prior art, and other features or improvements, whether or not themselves patented , that contribute economic value to the infringing product or process.*
> *`(3) ENTIRE MARKET VALUE- Unless the claimant shows that the patent's specific contribution over the prior art is the predominant basis for market demand for an infringing product or process, damages may not be based upon the entire market value of that infringing product or process*."

Promoting one method of awarding damages over another only shifts the problem away from those with deep pockets (in this case) while the real issue, issuing quality patents, is not sufficiently addressed. The *Georgia-Pacific* case places the burden of proof on the infringer when allocating apportionment damages while the new bill shifts the burden to the court. William Rooklidge, Former President of the American Intellectual Property Law Association, examines the nature of the removal:

> *"Placing the burden of proving that apportionment is appropriate on the infringer makes sense both because contraction of the damages base would benefit the infringer and because evidence of the value of any contributions of the*

[70] "Microsoft Hit With $1.52B in Damages," by Jessica Mintz. February 23, 2007. Available at http://www.washingtonpost.com/wp-dyn/content/article/2007/02/22/AR2007022201589.html. Last accessed on July 26, 2007.

> *infringer lies within the infringer's control. To lift the burden off the infringer in a provision that fails to even assign the burden of proof makes little sense."*[71]

In all instances, increased litigation is quite costly and affects small businesses more which have less financial leverage. The cost of estimated opposition to an alleged patent infringement case is approximately $100,000.[72] Favoring the apportionment method over the entire market value method will hurt small businesses in the long run, as courts will be less likely to award the entire market value. Also, infringement will become more common as larger companies with financial resources no longer would need to be concerned that the entire market value of a product will be awarded should they infringe on a small business. As these cases become more common, small businesses will not have the resources to face increased litigation. Language instructing courts to prefer one method over another will only increase infringement against small businesses and business that are in competition with larger multinational corporations. InterDigital Communications Corp. is ranked seventh in the Telecom Industry with 135 patents in 2005[73] and employs less than 500 people[74]. Bruce Bernstein, Chief Intellectual Property and Licensing Officer for InterDigital Communications Corporation testified before Congress:

> "*For innovative companies like InterDigital, mandatory apportionment would encourage free-riders and even existing licensees to risk litigation rather than pay, or continue paying, a market-negotiated licensing fee… No longer will the market be the arbiter of our technology's value; instead, a paid expert and court will be. There will be very little downside to 'rolling the dice' and litigating before taking a license.*"[75]

While awards for prolific cases where damages are overstated will occur less should the current bill language be adopted as law, from the small business perspective, more damages are likely to be understated if the PRA of 2007 passes with current apportionment language.

Policy Recommendation

Allow Courts to Further Develop Damage Awards

Congress seems to pay particular attention to those multinational corporations with sizable financial resources for lobbying (and political campaigns). The Coalition for Patent Fairness has

---

[71] "Reform" of Patent Damages: S. 1145 and H.R. 1908," by William C. Rooklidge. Pg. 4 Available at http://www.patentsmatter.com/press/pdfs/Patent_Damages_Reform_Rooklidge.pdf. Last accessed on July 26, 2007.
[72] "Patent Reform 2005: HR 2795 and the Road to Post-Grant Oppositions," by Logan, C.L. Missouri-Kansas City School of Law, Law Review.74 UMKC L. Rev. 975 Pg. 994, Summer, 2006. Reference from private email correspondence with Stephen Jensen.
[73] Patent Power Survey in IEEE Spectrum. Available at http://www.spectrum.ieee.org/nov06/patentsurvey. Last accessed on July 26, 2007.
[74] Conversations with InterDigital legal representation.
[75] Statement of Bruce Bernstein, Chief Intellectual Property and Licensing Officer for InterDigital Communications Corporation, Before the Committee on the Judiciary, United States Senate, "Patent Reform: The Future of American Innovation", June 6, 2007 Available at http://judiciary.senate.gov/testimony.cfm?id=2803&wit_id=6509. Last accessed on July 26, 2007.

accomplished their goal by including language in the Patent Reform Act of 2007 that encourages the courts to choose the apportionment rule in patent infringement cases and shifts the burden of proof in apportionment cases to the courts rather than the infringer. While there may be problems with the current legal system and at times witnessing overstated damages, legislating in favor of a certain rule only ends up shifting the problem away from those with money to spare while burdening smaller businesses with the increased risk of litigation. Of course, if Congress made a rule only favoring the entire market value, this would also be unfair. Since this was originally the rule of law before *Georgia-Pacific*, courts realized that this standard could not be used in all cases and created the *Georgia-Pacific* factors. As common law develops further, courts will find better ways to accurately award damages. After evaluating the perspective of both sides in regard to damages, a fair system of awards already exists. Undersecretary Dudas notes:

> "*It appears that the courts have adequate guidance through Georgia-Pacific and, as a general matter, do in fact consider numerous factors in determining royalty rates, including: rates paid by other licensees; nature and scope of the license; profitability of the product; commercial relationship between the licensee and licensor; as well as the portion of the realized profit attributable to the invention. The amount of a reasonable royalty should turn on the facts of each particular case, as best as those facts can be determined.*"[76]

Congress should not make rash decisions solely based on media hype and powerful lobbying. Congress should allow common law for damages to develop further within the court system without legislative action. Current language in the Patent Reform Act of 2007 regarding damages should be dropped from the bill.

Impact

Striking the language from the bill, preventing apportionment from becoming the primary mechanism for awarding damages, will prevent a system where larger businesses realize they can infringe on patents without sufficient regard to the entire market value of the patent. As the current system continues, the cost of litigation will gradually be reduced as courts determine more accurate methods of awarding damages through case law.

[76] Statement of Jon W. Dudas, Under Secretary of Commerce for Intellectual Property and Director of the United States Patnet and Trademark Office, Before the Committee on the Judiciary, United States Senate, "Patent Reform: The Future of American Innovation", June 6, 2007. Available at http://judiciary.senate.gov/testimony.cfm?id=2803&wit_id=6506. Last accessed on July 10, 2007.

4 Conclusion

Promoting innovation and protecting intellectual property often are goals difficult to reconcile. However, agencies, specifically the USPTO and SBA, can work together with Congress to develop policies and rules that will accomplish both while encouraging small business in America rather than creating barriers.

Summary of Issues, Recommendations, and Actions

<table>
<tr><th>Issue</th><th>Recommendation</th><th>Legislative or Agency Action</th></tr>
<tr><td>Fees Cost Small Business</td><td>Patent Fee Inclusion for SBIR Proposals</td><td>Congressional hearings with SBA and/or Legislative action through Committees on Small Business</td></tr>
<tr><td>Inadequate Small Business Size Standard</td><td rowspan="2">Enhanced Classification System at the USPTO</td><td rowspan="2">SBA Office of Size Standards work jointly with the USPTO to develop new classification system</td></tr>
<tr><td>"Micro-Entity" Status in PRA</td></tr>
<tr><td rowspan="2">Increase Examiner Retention</td><td>Increased Salaries and Retention Incentives</td><td>Congressional authorization and/or appropriation of funds</td></tr>
<tr><td>Better System of Evaluating Examiners</td><td>Changes to count system including technology considerations within USPTO</td></tr>
<tr><td>Apportionment Damages in PRA</td><td>Allow Courts to Further Develop Damage Awards</td><td>No action</td></tr>
</table>