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The America Invents Act

An Interactive Investigation of the Recent Changes to the American Patent System

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The America Invents Act represents the biggest change to U.S. patent law since the 1950's. We investigated the effects that the AIA will have. We consulted scholarly articles to discern the key issues to develop interview questions. We consulted experts in the field, and most respondents identified the Act as beneficial. We concluded that there will be an immediate benefit to the U.S., but the full effects will be unclear for several years.

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Background

Introduction to Patent Law Past & Present

Patent law has been a part of the American legal canon for hundreds of years. Patents allow for inventors to gain temporary exclusive rights to their inventions, but in return, they must disclose exactly what they have invented. This contract between inventors and society was incorporated directly into the U.S. Constitution. At the most fundamental level, good intellectual property laws tend to positively impact most, if not all, consumers. Market diversification, competition, and innovation all tend to drive down prices and allow end consumers to get more for their money. This is a fundamental tenet of capitalism. The U.S. patent system focuses on this tenet and also allows for inventors to profit from their innovations, which incentivizes technological advancement that benefits corporations, by allowing them to make money, and individuals, by increasing the desire for product creators to work and improve technology.

The American Patent System has been relatively stable over the course of American history, with only a few changes per century. The America Invents Act is one of the most significant revisions to the U.S. patent system. The AIA is an act that was recently passed in Congress that will come into effect shortly. This Act reformed many areas of the American patent law system with the overall goal of harmonizing the U.S. with the rest of the world. Since the AIA is a new piece of legislation, its impact to commerce and America as a whole is unclear, but we will discuss these impacts in detail in this report.

Patent Law & International Trade

It is not secret that the United States is the world leader when it comes to the economies throughout the world. Beginning at the turn of the last century, the economy of the United States based almost solely in North America began to rival the global economies of the great powers of

Europe. In fact, after the First and Second World Wars, the American economy was virtually the only economy left in the western world and as a result, the United States Economy grew and strengthened throughout the latter half of the 20th century and by the dawn of the 21st century the United State boasted the world's largest, strongest and most stable economy that every other nation on earth wished to trade and do business with America. King Charles II of England once said that, "It is upon the navy under the Providence of God that the safety, honor, and welfare of this realm do chiefly depend," (First Articles of War, 1757) and as this statement was true for England, the leading world power of the17th, 18th and 19th centuries, in the 20th and 21st centuries it is international trade upon which the economic welfare of the United States, today's leading world power, does chiefly depend.

With the passage of the America Invents Act, the IP Law landscape in the United States changed substantially. The American Patent System has historically been a first to invent system because the Founding Fathers fundamentally believed that the true inventor of a product or invention should reap the benefits of what he or she took the time, energy and resources to create. When the Founding Fathers designed the United States Patent System, the system they designed was not unlike what existed in Europe during the late 18th and 19th centuries. In fact, until very recently, the rest of the world conducted affairs related to patent law and IP law based on who was the first to invent a unique product or device.

One of the first international conventions ever convened on the subject of patent and IP law was held in Paris in 1883. The resulting international treaty set the benchmark for patent and IP law which would last for over 100 years. An article published recently on the subject of international trade and patent law states that, "Until 1995, the multilateral treaty with the widest membership was the *Paris Convention* of 1883. The Paris treaty provides for nondiscriminatory

treatment, and establishes rules for determining priority rights. Priority determines who gets to apply for a patent (i.e. the first person to file or first to invent)" (Allred & Park, 2007). As is evident by the quotation, the *Paris Convention* was the gold standard which the western nations of the day accepted and abided by for decades. The United States in particular thrived under the first to invent system and the agreements made under the Paris Treaty with the great powers of Europe. It wasn't until the middle of the 20th century that a second convention on the subject was convened.

By the end of the World War II, the European economy was in shambles and the world economy was experiencing a lot of turmoil. As a result, many of the conventions which existed between the United States, Europe and the rest of the world grew weak and in some cases broke down completely. As the world recovered from World War II and the nations of Europe recovered, international trade began to grow,

> "The need for international patenting rules and standards lead to the 1970 formation of the WIPO (World Intellectual Property Office), an agency of the United Nations… which provides for, among other things, a single filing of an international patent application" (Allred & Park, 2007).

Although this measure was a step forward for the young United Nations, for the United States, it was just another international treaty that was contrary to the interests of the United States. This is so because this was the beginning of the move to a first to file, rather than a first to invent system and the United States Government wanted nothing to do with such a shift.

In addition to wanting nothing to do with a global shift in patent law and intellectual property law, the United States went so far as to legislate against nations who had what the United States Patent Office considered to be weak patent laws and protections. In one such instance, "…the U.S. Congress passed a law (Section 301) in 1984 to allow trade retaliation against nations that provided weak patent rights. In 1988, another law (Special 301) was passed

to require annual surveillance of foreign countries' practices in IP law" (Allred & Park, 2007). As one might imagine, the major companies doing business abroad wanted their patented products protected and the U.S. Government took the necessary steps to safeguard markets for the American made goods being shipped abroad.

In the 21st century, the divide between the United States, the Europeans and the Chinese in terms of patent law and IP law grew to be too wide. American companies were having trouble obtaining patents in Europe and China and European and Chinese companies where having trouble obtaining patents in the United States due to the lack of harmony between the different countries patent systems. In addition to problems obtaining patents, the courts in Europe, China and the United States were clogged with patent disputes. The resulting legal disputes were extremely expensive, and the legal costs of patent disputes were being passed onto the consumer, which ultimately hurt business for everyone. As a result, beginning in 2009, the United States began looking into a reform of the United States Patent System and the resulting bill entitled the *America Invents Act*, replaced our first to invent system with a first to file system, which is more harmonized with the rest of the world. The hope is that this reform will bring America into the international age in terms of Patent and IP law.

Patent Office Backlog

When analyzing the America Invents Act it is important to consider its effect on America's current patent backlog of over 750,000. An inventor's drive to put his ideas in the consumer market is brought down by the long 3-6 year wait that stands in the way of patent approval. Therefore, the issue of whether or not the America Invents Act offers any solutions to the backlog should be considered important. This should especially be the case when inventors are facing an issue such as a time sensitive software patent. Such inventors may miss out from

the benefits of patent protection when the patent backlog takes so long. The effect of the inventor losing interest to invent from the patent backlog trickles down to effect even the consumer. The large backlog demotivates inventors from making their ideas a reality and fewer new products are brought to the consumer market. A smaller selection of products for consumers to choose from reduces competition and inflates prices. An analysis of the America Invents Act would be incomplete without considering its effect on the patent backlog.

A 2004 report from the National Academy of Sciences (NAS) was some of the first research to spark the initiation of the America Invents Act. The report mainly criticized the American Patent System's inability to work efficiently. NAS specifically suggested that America add more experienced patent examiners in order speed up the rate of innovation, and reduce the backlog in the United States. NAS relates a reduced patent backlog to a healthier U.S. economy. Essentially, a shorter backlog will result in more rapid technologic proliferation. This proliferation will result from an increase in the morale of inventors by rewarding them for their work more quickly. The National Academy of Sciences mentioned how it is important to give inventors an incentive to invent in the following:

> A patent system should enhance social welfare, not only by encouraging invention and the dissemination of useful technical information but also by providing incentives for investment in the commercialization of new technologies that promote economic growth, create jobs, promote health, and advance other social goals. (A Patent System for the 21st Century, Merrill 2004)

The statement from NAS reflects how giving inventors the incentive to invent will lead to a chain reaction of positive changes for America. The NAS states that dissemination of useful technical information is paramount in analyzing the efficacy of a patent system, which behooves the USPTO to rapidly turn around patents. The fact that a patent can lead other companies to

invest in new technology and thereby create new jobs grants a strong reason for the backlog to be minimized in order to increase the economic health of the U.S.

In the America Invents Act the United States took this advice from the National Academy of Sciences and will potentially reduce the patent backlog by adding more patent examiners to USPTO. Additionally, switching to a first-to-invent system speeds up the process because takes less time to review a patent for patentability because of the fact that we harmonized with Europe, which means patents will not need to be heavily examined by our system if they are filed in a foreign patent office. Ultimately the America Invents Act will have positive effects on the backlog.

Additionally, in a 2011 report published by the Federal Trade Commission (FTC), the FTC urges that patent law needs to keep a fine balance between patents and competition. According to the FTC we "need to promote innovation by finding the proper balance of competition and patent law and policy."(FTC, The Evolving IP Market Place 2011) the FTC claims there are too many patents being filed that are of low quality and it is for this reason, the backlog has increased over the past few years. The FTC quoted the following when stressing that America needs a system that promotes patents of better quality:

> The current standard of 'clear and convincing evidence undermines courts' ability to weed out questionable patents. This is especially troubling, since certain PTO procedures and rules tend to favor the issuance of patents (FTC, The Evolving IP Market Place).

The statement from the FTC demonstrates how it supports a patent system that sets high standards for what should be considered a patent. As the FTC suggests, if we make high standards for what should be considered a patent, we in turn eliminate the number of weak patents and potentially reduce the backlog.

The America Invents Act does not do anything to support the FTC's suggestion of promoting higher quality prospective patents. In turn, the Act lacks potential for reducing the backlog in this area and still has room for some improvement when talking about reducing America's patent backlog.

Impact of Patent Law on the Average Consumer

Intellectual property law should consider two major parties: companies and consumers. Inventors/companies must be rewarded for their work and this reward comes in the form of a short term monopoly or a patent. As companies seek these short term monopolies, they tend to invest more heavily in research, which generates new products. An economy with more competition and more products reduces cost on those products. This benefits consumers by allowing them to purchase more, which is one of the major focal points of the America Invents Act.

First, the act seeks to synthesize the American Patent System with systems from the rest of the world. The simplified method for patent applications will prove helpful for corporations because our system is now more similar to those of other developed nations. The more similar the different nations' patent systems are, the simpler it is to get patents in different nations. Business is now occurring in a global market and not in any single nation, so the America Invents Act was a necessary step in providing a more multinational approach to the problem of patent rights. This multinational approach means that more international businesses can get patents here more easily than before, which will result in an increase in the diversity of products that are on the market, which in turn increases competition and an overall reduction costs of goods.

Second, the Act reduces the financial burden of patent applications for small business. This change in fee structures was discussed previously, but the AIA provides for a new classification of corporations known as micro entities. These micro entities are charged less money to file for a patent. This reduction in USPTO fees is a small change when compared with the cost of attorneys needed to craft and potentially litigate over the patent, but even so, the reduction in fees will benefit these new micro entities to some degree.

Third, the first to file system eliminates litigation stemming from who was the first inventor of an invention. In general, most cases of patent litigation are not focused on who invented first, but instead on the scope of the invention. Nonetheless, this change in who deserves patent protection will help to provide companies, especially small companies, with some assurance that once they have completed the patent process, that they have the rights to their work. This simplification of the patent code means that small businesses are harder to harass. There are simply no more questions about who invented first. This reduces the arsenal of weapons that patent trolls as well as corporate bullies can use against small businesses and individual inventors. For small businesses, less litigation is better because they do not have the cash needed to fight long legal battles. This means that less money will go towards attorney fees, and more money will go back towards consumers and back into the research and development of new products.

Conclusions

Whether we choose to examine a specific trade or we consider the American intellectual property landscape as a whole, we notice one or more aspects of our patent system that could use improvement. Some problems apply across the board from industry to industry, for example the overwhelming backlog of patent applications, the discrepancies between U.S. patent law and the

European conventions adopted by most of the world, and the costly litigation associated with showing that one is truly the first to invent their new product. Some industries and classes of innovators face unique problems, like the issues of scope affecting software patents and the costly and lengthy patent application process that serves as an obstacle to the small inventor. These problems in the patent system have gone unaddressed for several decades, but Congress and the USPTO have finally recognized most of these problems, and legislation that aims to correct many of them is already coming into effect. However, it will take many years to see the full implications of the Act and to know for sure if any problems will still persist. Any analysis that can save us from waiting that long and predict the next set of problems now would be extremely valuable, but it would require a deep understanding not only of each problem by itself but also how they relate to each other. We hope that this background gives a basic understanding of the problems our patent system currently faces as well as some of the interactions between them.

The problems already addressed by the American Invents Act are the first-to-invent clause, the enormous backlog of patent applications, and the disadvantaged position of the independent inventor. The Act leaves other issues such as vague patent language unaddressed, but that does not mean the backlog is the only area that will see improvement. For example, the lowering of application fees for the "micro entities" covered in the Act only goes so far to ease the burden placed on the small and independent inventor, but other provisions of the act may benefit micro entities indirectly. For example, a successful reduction of the backlog would mean a shorter turnaround time for applications to be granted, which could make the small inventor more attractive to potential investors. However, if more applications are filed after the Act then the provisions aimed at reducing the backlog may not be as effective as previously expected.

Methodology

Phase I – Research

In order to fully understand the recent changes made to the United States Patent System brought about by the passage of the America Invents Act our group first had to understand the patent system as it existed and operated prior to the passage of the America Invents Act. Prior to the reforms instituted by the America Invents Act the United State Patent System was based on the principle that he who was first to invent had exclusive rights to a patent protecting the invention so long as he was 'diligent' in filing the patent, but there was no requirement that he be the first to file the patent. Our group quickly grew to appreciate that understanding the ideology behind the term "first to invent" was paramount to the success of our project because the system as it existed prior to the reforms was based on the ideology associated with the term "first to invent." In order to understand the intent of the reforms brought about by the America Invents Act, it was first necessary to understand the flaws in the old system. It was also necessary for our group to understand the impact that the American Patent System had on the rest of the world because in the modern age, where the United State leads, the rest of the world generally follows.

After we did some research pertaining to the patent system as it existed prior to the passage of the America Invents Act, we had a fair grasp on the way the patent system operated under the first to invent ideology. We gained a good understanding of the strengths of the first to invent system and we also gained a good understanding of the shortcomings of the first to invent system. Once we understood the strengths and weaknesses of the first to invent system, we began researching the America Invents Acts itself in order to understand the legislation as it stands today having been signed into law and due for implementation this year.

In addition to researching the America Invents Act as it reads on paper, we also looked into other sources. We read law reviews and relevant newspaper articles and listened to relevant radio programs in order to get a good sense of what the general reaction has been to the passage of the America Invents Act. The outside research we did was invaluable because it gave depth and breadth to the facts we uncovered during our research on the patent system as it had been prior to the reforms as well as the facts we gathered on the reforms. In addition to giving depth to the facts, the outside research helped our group understand the more complex human factors associated with the patent system in terms of who will actually be affected by the reforms contained within the America Invents Act.

After a period of intensive and extensive research on the patent system as it existed prior to the passage of the reforms and the reforms themselves, we began to identify the issues within the patent system that the America Invents Act was designed to address and reform. After identifying some areas of interest, we formed a list of research questions which are included at the conclusion of this chapter. After forming our research questions, we did some follow up research in order to ensure that our questions weren't already answered. However, as we progressed in our research and the formulation of our questions, we realized that our research questions would be difficult to answer given the fact that many of the changes contained in the Act have yet to go into effect. However, it may still be possible for experts in the field to use their expertise to predict the outcomes of the new legislation. If many experts agree or draw similar predictions, it is safe to assume there will be a strong likelihood that these outcomes will occur.

Phase II – Interview Preparation

After we completed the research phase of our project, we determined that it would be necessary to conduct interviews of patent attorneys; patent holders and other experts in the field of patent law in order obtain data with which to answer our research questions. In order to gather consistent data and conduct effective and informative interviews, the first task our group tackled was to create a useful set of questions. In order to create a list of concise and insightful questions, we identified many areas of patent law which were of interest to the group. After identifying areas of interest and investigation, we began the process of drafting questions for our subjects.

In order to draft concise and insightful questions, our group had to spend time drafting general questions based on topics related to the America Invents Act and the United States Patent System. After we drafted a long list of questions, we evaluated each question and cut from the list those that we deemed not relevant or not insightful. We also blended similar questions together to avoid confusion and repetition. Our goal was to create a list of concise, insightful, open-ended question and although this process took some time, due to the initial number of questions we drafted, by the end of the editing process, our final list of questions was short, sweet and to the point. Our interview questions can also be found at the end of the chapter.

In addition to crafting research questions, we also crafted several documents to assist us in establishing connections with patent holders, patent attorneys and other experts who might be willing to participate in an interview with us and ultimately answer our questions. We thought it best to make first contact with potential subjects via e-mail. Therefore, we drafted an email that explained to possible subjects who we are, what are doing and trying to accomplish.

In addition to the introductory e-mail, we created a script which we would actually read to the subjects once we scheduled phone interviews with our subjects. Drafting this particular document did not come easily for our group. We did not initially think of creating a document of this type, but on the advice of our advisor, we drafted this document and spent a significant amount of time ensuring it was representative of what we were trying to accomplish. The reason this document was somewhat tricky to draft stems from the fact that in this document we carefully introduced ourselves, explained our project and imparted to our subjects their rights within our interview process. The section containing the rights of the subject had to be carefully written in order to quickly and concisely explain that should the subject want to terminate the interview, speak off the record, not answer a question, etc. that we would understand and respect their wishes. Although this document presented our group with some interesting challenges, we were nonetheless able to prepare it and use it to conduct successful interviews.

After drafting the documents necessary to facilitate phone interviews, we put them together for review by the Institutional Review Board (IRB.) The IRB oversees research at WPI and ensures that all research is conducted ethically and in compliance with all regulatory requirements whenever human subjects are involved. As our interviews fall into the category of research that brings minimal risk, we filled out the specialized form along with all of the requisite materials describing our research plan.

Phase III – Interviews

After we obtained IRB approval to conduct interviews with professionals, we needed to acquire a list of actual professionals who we expected might be willing to speak with us. Our first step in this process was a research consultation with a research librarian at the WPI library. Over the course of the meeting, we were instructed in the use of several databases that could be

used to locate patent attorneys by many attributes including location. We found several law firms local to Worcester, and were also given the contact information of one Gina Betti, the Administrative Director of WPI's Venture Forum. She shared with us some of the connections she acquired over the years in the form of a list of 13 lawyers -- many of whom were WPI alumni, and many of whom had dealings with the Venture Forum for 10 years or more. These contacts would certainly be likely to help out WPI students, as they had been doing so in the Venture Forum for years. Unfortunately, some of the email addresses were outdated and some of the lawyers were not intellectual property attorneys but corporate attorneys. Still, the list provided us with a solid start and we thank Gina Betti for her contribution to this project.

As we interviewed those who appeared on our initial list, we would ask each of the subjects who decided to participate whether they had any current or former colleagues who might also be willing to participate in an interview. This practice proved to be quite helpful as each person interviewed usually gave us at least one lead. However, because many of the contacts were participants in the Venture Forum, there was a lot of overlap in their networks. As a result, we were offered the names of patent attorneys who we had already been referred to by someone else. To further supplement our initial list of contacts, we asked our advisor, Professor Rissmiller, to recall any of the alumni he knows who are working in intellectual property law. He was able to give us several names of alumni as well as the names of faculty on campus who would have more connections of their own. This was also a great boon to our success, but it was only one of the many ways Professor Rissmiller has helped us throughout the project.

When it came time to actually interview our subjects, we followed the plans we put together in our IRB exemption. We would reserve space somewhere on campus to ensure a good phone signal as well as to eliminate any outside noise that might interfere with our interviewing.

Then, we gathered in a group of at least two people so one could do the speaking and focus on asking the questions while the other members of the group could take detailed notes. The interviewer using the phone took notes as well, but their primary task was to keep their ear out for cues that the interviewee was done answering the question and determining whether a portion of the response warranted any elaboration from the interviewee or whether it was time to move on and ask the next question. Once the call was made, the team member making the call would ask for the person we were scheduled to call, greet them, introduce the group once more and reestablish our purpose for conducting the interview. The caller would then read the disclaimer we prepared, which affirms to the interviewee that his participation is voluntary, that he may pass on any question or decide to end the interview at any time, and that he/she will be given the chance to review this work to ensure that we did not misrepresent him or anything that he/she said. We would also respectfully ask for permission to take an audio recording of the interview, and it was only at this point where we would actually begin asking questions. The act of reading the questions itself was a fairly straightforward and routine process, and the list of questions we asked is included at the conclusion of this section. Once questioning was complete, we asked the interviewer if he/she could give us the names of anyone else he thought we might like to speak with, thanked him/her kindly, and ended the call. Once the call was over, we would immediately spend some time reviewing the notes and synthesizing the responses while the interview was fresh in our minds and distinct from any other interviews we may have conducted that day.

Phase IV – Interview Data Analysis

Any report on a technical subject will contain quantitative data. Analyzing quantitative data is relatively easy and in most cases simply requires statistical formulae in order to analyze and effectively communicate the overall results of any project. Utilizing qualitative data however, is not quite so simple. Qualitative data is data that is not easily converted to numerical scores. All of our data was qualitative because the questions we asked were open-ended and opinion based. The data we collected during the interview phase of our project is helpful for finding new and interesting concepts that underlie an issue, but the data also requires a different method to effectively analyze. In order to analyze the date we collected, we turned to Miles's and Huberman's Qualitative Data Analysis. This book identifies three approaches to qualitative data analysis.

The first approach is called "interpretivism." This method appreciates the fact that human activity is not something that can be mathematically modeled, and thus the approach shifted to a more empathic connection where one interprets qualitative data by trying to really comprehend the subject's intention. After a critical analysis, one can begin to condense interactions to their essence, and then compare those in a pseudo-qualitative manner. Essentially, one interprets the fundamentals of a conversation or other qualitative data and tries to find similarities and differences within the data. This approach is problematic however, because this method requires a high degree of neutrality on the part of the person attempting to interpret the data.

The second approach outlined by Miles and Huberman is called "social anthropology." This method analyzes data in an anthropological manner in the sense that the researcher must take note of the mundane as well as the extraordinary. This type of analysis depends entirely on an analytic approach to what data will be condensed into a report. The data considered using this

method is often from multiple mediums, (i.e. books, conversations, and objects) and data collection is accomplished by employing non-repeatable methods. The compiled information and materials are then analyzed for patterns, and this data helps form the conclusions about the overall culture, or interview/question responses, as a whole. For our project, this particular method is very appealing to the advantages it presents.

The third approach is called "collaborative social research." This method requires multiple people to analyze the data in order to form a more complete view of the collected data. This approach considers the reduction of data as a part of the analysis, which is a realistic approach to data analysis. This method considers that chosen data to be almost as important as the method employed to perform the analysis. This method seems to be the best fit for us because this methodology incorporates the most important elements of the "social anthropology" method and will include every member of our team.

In order to analyze the data we so painstakingly collected during the research phase of this project, we implemented the collaborative social research methodology because it best fit our needs for compiling and analyzing the data. We worked to find common thematic elements in the data we collected during the interviews and we addressed and explained the reasoning behind outliers.

The task of compiling all of our data required us all to analyze the responses of the subjects and then arrange them based on similarities. This reduced the chance of accidentally losing or neglecting any of the data we collected.

Since all of the participants are knowledgeable in the area of study, we decided not to eliminate any of the data we collected. We decided it would be best condense the data using the collaborative social research method, because we could not reasonably present all of the

interviews in their entirety. We also used quotations when the subjects responded in a particularly thought-provoking manner whenever we felt that their words were more succinct or powerful than our summary. We weighed opinions based on level of expertise and strength of each opinion. Most of the patent lawyers we interviewed were well versed in the new changes instituted by the America Invents Act, but most did not consider themselves experts on the material.

When we began analyzing our data, we evaluated the substance of the questions that we asked the subjects we interviewed and created topics that pertain to the general underlying topics of the questions that we asked. We then each analyzed every set of notes pertaining to interviews and categorized comments into the appropriate topic. After we each compiled homogenized notes from all the interviews, we compared our findings and tried to reconcile all the differences in how we categorized and weighed the different pieces of information.

Once we discussed the data and determined which pieces were most valuable, we made a group note sheet that showed the synthesized product of our interview analysis. Any disagreements that were unresolvable were duly noted in our final note sheet and can be seen in appendix II). In general, we are satisfied with the results generated by the social collaborative method as it allowed for multiple reviewers to compile data in an unbiased manner and subsequently discuss any discrepancies. This method allowed us to take note of the differences of opinion that occurred during the group analysis process so that we could form well-articulated opinions on the data that we collected. Ultimately, we are more than satisfied with the method of data analysis we selected because it produced excellent results.

Analysis of Data

Topic I: Most Helpful Changes

We will begin by analyzing the helpful changes made by the America Invents Act to the U.S. Patent System. Prior to the passage of the AIA, the U.S. Patent System operated under a fundamentally different set of standards than European and Asian Patent Systems. The underlying difference between the American Patent System and the rest of the world is that the U.S. system was based the first person to invent obtaining a patent whereas the rest of the world is using a first-to-file system. With the introduction of the first-to-file clause of the AIA, the U.S. Patent System will now be in line with that of the rest of the world. Within the patent law community, it is widely accepted that

> The harmonization brought about by the AIA is ultimately a positive change. One of the many benefits will be an increase of the speed at which Americans will be able to obtain patents at home and abroad. The harmonization reduces dissimilarities in patent systems around the world because the standards set forth by the USPTO are now similar to the standards set forth by the Asian and European Patent Offices. The increased similarity of standards will lead to a faster search and examination procedure abroad because the patent offices of the world have achieved mutual recognition of results (Smith).

One of the expected outcomes of the harmonization achieved through the passage of the AIA is that Americans will be able to attain a patent more easily abroad due to overlap between the systems. The professionals in the patent law community all agreed that harmonizing U.S. Patent Law with the rest of the world will bring positive, appreciable results.

In order to confirm what our research led us to believe with regards to the effect the AIA will have on the U.S. patent system, we conducted interviews with professionals within the patent law community. We interviewed ten different patent attorneys from a number of different

firms and we asked them all about their thoughts on the benefits of the harmonization between the U.S. Patent System and the rest of the world. Almost all of the attorneys we interview had nothing but praise for the harmonization that will take place once the AIA is fully implemented. Most of the attorneys believed that the harmonization would be of great benefit to the United States and to the inventors of America because it will now be much easier and cost effective to obtain a patent abroad. Many of the attorneys we interviewed agreed that "the dissimilarities in the patent systems of country's cause many procedures to be duplicated many times by the applicant, costing the applicant more money. By harmonizing the system, this cost can be minimized and attorneys can better serve their clients" (Smith).

There was no disagreement among the attorneys we spoke to regarding the notion that patent harmonization and simplification is a helpful change. There is a general consensus among members of the patent law community that the U.S. only stands to benefit from the AIA's harmonization effect. In fact, patent attorney Dave Rouille said "The U.S. stands to benefit because the rest of the world operates under the first-to-file system we have recently adopted. The plan is for everyone to play by the same rules. This makes the U.S. more in line with the rest of the world." Similarly, other patent attorneys such as Jenifer LaCroix added, "Global patent harmonization is helpful because we are more in line with what the rest of the world does. So we are overall more harmonized with the rest of the world, making us more efficient."

Even patent attorneys who do not like the first-to-file system acknowledge that the harmonization brought about by the AIA will have a positive effect as well as a number of positive outcomes. For example, patent attorney James M. Behmke characterized the first-to-file system as "lazy because the first-to-file system just saves paper work at the expense of the rights of the inventor who was first to invent it." However, although Mr. Behmke dislikes the

first- to-file system, he did agree that the AIA will have a positive effect on American Patent Law in the sense that it promotes global harmonization. Specifically Mr. Behmke said, "The most helpful change in the AIA is the fact that the Act will bring us closer to the rest of the world."

Along with the legal professionals, the U.S. Congress agrees that the AIA will have a direct positive impact on inventors. Congress claims the Act makes it easier for inventors to obtain foreign patents for their products. The U.S. Congress acknowledges this fact in section 3(p) of the AIA and this section reads as follows:

> It is the sense of the Congress that converting the United States patent system from 'first to invent' to a system of 'first inventor to file' will improve the United States patent system and promote harmonization of the United States patent system with the patent systems commonly used in nearly all other countries throughout the world with whom the United States conducts trade and thereby promote greater international uniformity and certainty in the procedures used for securing the exclusive rights of inventors to their discoveries (Smith).

It is evident in section 3(p) that Congress saw the potential for more security in obtaining foreign patents through the uniformity of global patent system as proposed by the AIA. The potential for U.S. inventors to obtain strong foreign patents with more ease is an extremely positive change. Economically speaking, this will increase U.S. exported products as econometric tests and studies on the relationships between foreign patent rights and number of U.S. exports proves. This theory of market expansion through the acquisition of U.S. foreign patents was proved by Professor Pamela J. Smith of the University of Minnesota's Department of Applied Economics in a study of hers called

Patent Rights & Trade.

In Professor Smith's study she demonstrated that "strong foreign patent rights stimulate the market expansion of U.S. exports across countries with strong imitative abilities" (Smith). Her

test held that "strong foreign patent rights expand markets available to U.S. exporters by ensuring exclusive rights to technologies embodied in exports. These exclusive rights create a larger effective market for U.S. exports by reducing the ability of foreign firms to imitate the traded goods" (Smith). Therefore, increasing the number of foreign patents granted to U.S. inventors generates more demand abroad for U.S. exports.

Professor Smith had hypothesized that "The market expansion effect predicts a positive relationship between the strength of foreign patent rights and U.S. bilateral exports. It is expected patent rights to confer market expansion, particularly across countries with strong imitative abilities." To test her hypothesis and subsequent predictions, Professor Smith collected industry-level data on the biological products industry. "This industry was chosen because 18% of revenues are used in this industry for research and development expenditures" (U.S. Congressional Budget Office). Therefore, patent rights are particularly relevant in this industry because the rights allow holders to exclude others from using the protected technologies, ensuring that those who invest in research and development reap the returns to cover the costs. A lot of money is poured into this industry for research and development. Therefore, the industry is sensitive to patent rights because of the large incentive to get high monetary returns for the cost of research. After Professor Smith collected data on the demand for U.S. exports, she devised formulas using econometric techniques to study the relationship between U.S. exports and Patent rights. The result for the biological industry yielded that a 1% increase in the number of patents issued across countries with strong imitative abilities leads to a 0.05% increase in U.S. biological product exports on average. Similarly, the same analysis was done for the medicinal/botanical industry and it was determined a 1% increase in the number of patents issued across countries with strong patent rights leads to a 0.44% increase in U.S. exports

of medicinals/botanicals. Therefore, as studies show an increase in the ability for U.S. inventors to attain foreign patents will lead to an increase in U.S. exports. The effects of the AIA could be tremendous for the health of global economies. Making the U.S. patent system more in line with that of the world's, ultimately is a positive impact as portrayed by legal professionals with their positive remarks, Congress in section 3(p), and university scholars through their research.

Additionally, another helpful change to the AIA was the removal of the one year grace period because it streamlines the American patent system. Originally, an invention could still be patentable if it was already in use, a description of it appeared in a printed publication, or even if someone else had patented it – as long as any of the above had only happened within the past year and not before (35 U.S.C 102). If someone filed that patent, a lengthy and expensive process known as interference would take place to determine who was first to invent. The removal of the grace period corrects two major flaws related to the interference process that it spawned.

First, it corrected the problem of the first-to-invent system's impracticality. Ms. LaCroix stated that on average, the interference proceeding costs over half a million dollars and can last up to two years. The monetary cost of interference is mostly a problem for individuals, or for small companies without the financial resources of a large corporation. The length of time, however, hurts everyone involved, as it adds a year of uncertainty during which a company might not want to go to large scale production – if they begin to produce at all. The problem of time consumption is exacerbated by the fact that an enormous patent application backlog exists already. It could take 3 to 6 years between the filing of a patent application and its approval, which means 3 to 6 years of production and sales can be lost. This simplification of the patent system is exactly why the removal of the grace period is a positive change. But as helpful as this

reduction in work may be, the AIA also created a new set of proceedings called the post-grant review, so unfortunately the net gain of time depends on how long those oppositional reviews will take on average.

Second, there is simply the question of how valuable the interference proceedings really are compared to the derivation proceedings that will replace them. What would we lose by switching to first-to-file? In practice, the answer is virtually nothing. The new disclosure rule still allows a person to claim intellectual property rights on an invention as soon as it is developed, even if it is not ready for patent. This is because the law now clearly states that a public disclosure will count as prior art against anyone else trying to patent the idea. As long as the inventor or a co-inventor makes the disclosure, they will have a full year to file at least a provisional patent application and use the date of the disclosure as their priority date. Additionally, we find that the first to file a patent was only found to lose out in the interference phase once in the past 5 years. The vast majority of interference deliver the same results the first to file system would anyway, and they impose several burdens on the inventor, like keeping piles of detailed notebooks, being aware of any prior art that may invalidate their claims, and paying a lawyer throughout the whole process. The use of the filing date (or public disclosure as effective filing date) will bring equitable results at a fraction of the cost in money in manpower.

Unfortunately, the disclosure rule is not without problems of its own. As Jeffrey Duquette alerted us and other attorneys confirmed, the law does not attempt to describe what counts as "public" or what counts as a "disclosure." As result, the courts may have to interpret the law for themselves, and their initial interpretation may change several times in the coming years. Until the legal battles pan out, we may not see a big reduction in the amount of time it takes to receive a patent. Some inventors may be unsure about trying to use the public disclosure

rule to stake out their territory for other reasons. First, the disclosure will only protect facts that were actually disclosed, but not the entirety of the invention in the way that a properly prepared patent application would. And as mentioned before, the disclosure date counts as the effective filing date for the coming application; the patent would expire earlier if the invention was disclosed first.

Topic II: Least Helpful Changes

Now that the positive effects of the America Invents Act have been explained and explored, it is now time to discuss the potentially negative effects of the AIA. Many of the attorneys we interviewed were able to outline many of the negative side effects of the AIA. One of the negative changes made to the U.S. Patent System by the AIA that was identified by a number of the attorneys we interviewed is the fact that the USPTO now has direct control over the fee schedule that is associated with obtaining a patent.

Before we proceed, it should be understood that the patent process is inherently expensive and according to the attorneys and patent holders we spoke with, it was never likely that the AIA would be effective in reducing the costs associated with obtaining a patent. In fact, most of the attorneys and patent holders we interviewed feared that the AIA would cause the fees to increase. Patent attorney Jeff Duquette had a rather strong opinion on this subject and as he sees it, "The 15% increase in the fees imposed by the USPTO is not good for private inventors or small companies." He continued by outlining a number of other significant issues associated with the new fee schedule. One of the most pressing issues he shared with us is the difference between "small" and "large" entities when it comes to the fee schedule. He explained that under the new fee schedule, the difference between a large and small entity is so carefully and precisely defined and that the precision in the law is likely to cause problems. As Mr. Duquette puts it,

"There is no middle ground between a large and a small entity built into the fee schedule. This lack of middle ground will likely prohibit small companies from filing for patents because they will be forced to pay fees that they cannot afford." Mr. Duquette was adamant when it comes to his opinion regarding the new fee schedule and he was not alone in his dislike of this particular change made by the AIA.

In addition to a general dislike of the new fee schedule, a number of the attorneys we spoke with objected to the establishment of what is known as a "post grant review" by the AIA. One of the major issues that the AIA was designed to combat is the practice of companies and inventors engaging one another in frivolous legal battles over the validity of a pending patent. According to our research and many of the attorneys we spoke with, these suits where often very long and extremely costly and the high volume of these suits has been clogging the courts for decades. Under pressure from the judicial branch as well as companies and inventors, Congress created a provision in the AIA which establishes the post grant review process.

The post grant review process essentially allows companies or inventors to challenge issued patents and have the patent reviewed again by the USPTO. To some, this measure is a step forward and will likely prove helpful. However, to most of the attorneys we spoke to, this new measure is a step in the wrong direction. According to patent attorney David Rouille, the establishment of the post grant review is one of the worst previsions of the AIA. In his opinion, "the post grant review will be used as a tool by companies and private individuals against their competition. Essentially, this provision allows people to argue over patents which have already been issued by the USPTO." Mr. Rouille was critical of the post grant review process throughout the interview and his final word on the subject was "the post grant review allows for people to start monitoring issued patents and challenge them when needed," and in his

estimation, this opens the door to a new kind of patent challenge suit which will consume copious amounts of time and money.

One of the other negative effects that the AIA will have on the U.S Patent System that the attorneys we spoke to identified is the removal of the "best mode" provision of the law. Prior to the passage of the AIA, inventors and companies applying for a patent had to disclose everything about the product being patented. The patent application required full and complete disclosure about the product and one of the integral pieces of information required to obtain a patent is the "best mode of production" for the product. For the entire history of the U.S. Patent System, disclosing the best mode of production has been standard practice. The "best mode" clause as it is known as within the patent community was originally made part of the patent application because at the time, production processes were patentable and for an inventor or company to steal a production method was tantamount to patent infringement. However, the AIA is representative of a new way of thinking and the new patent philosophy no longer considers production methods to be patentable. This decision is interesting because it directly countermands over two hundred years of American Patent Law precedent. Some in the patent law community are concerned about the possible impacts this will have on the way the world will do business from now on.

One of the attorneys we interviewed felt strongly about the removal of the best mode prevision from the patent application. Jennifer LaCroix, who is an experienced patent attorney, was kind enough to discuss her feeling on the removal of the best mode clause from the patent application. According to Mrs. LaCroix, the removal of the best mode prevision is a negative attribute of the AIA because "it will now be impossible to invalidate a patent based on the fact that the patent holder did not disclose the best mode of production within the patent." She said

that she was sorry to lose this prevision because in her experience, attacking a patent based on the nondisclosure of the best mode of production was an effective legal strategy when attacking a bad patent. Although this loss seems insignificant, it will have far reaching consequences on how attorneys in patent litigation practice moving forward and the next generation of attorneys will have to find new reasons that justify invalidating patents.

One of the other measures contained within the AIA which has been drawing a lot of attention and negative press is the change in the definition of the term "prior art." Previously, there was one rule regarding what counts as prior art within the United States, and another rule for inventions that take place abroad. For prior art to come from outside, the invention must either be protected by a patent, or described in a printed publication. Only within the United States could the simple use or knowledge of an invention count as prior art. After the AIA amended section 102, the mere use or sale (or offer of sale) of an invention anywhere in the world will make it impossible to subsequently receive a patent on it in the United States. This is a bad change because it places a greater burden on inventors to be aware of what is going on in the rest of the world, even when those goings-on don't appear in any patent or printed publications. Since the statute has no effect on whether other countries treat a use or sale in the United States as prior art in their systems, there is nothing to gain from this aspect of the change either.

As a final addition to the negative attributes listed above, as one might expect, not everyone in the patent law community is pleased with the radical change to being a first to file system instead of a first to invent system. Although it was uncommon for us to hear any complains about becoming a first to file nation, the complaints we did hear were strongly worded and the attorney who submitted negative opinions regarding first to file was adamant about his

opinions. In fact, one of the attorneys we spoke with, James Behmke said that "the first to file system is just lazy. It saves paperwork and effort on the part of the patent examiners at the expense of the rights of the inventor who was first to invent whatever is being patented." Mr. Behmke was the most outspoken attorney we spoke to regarding the issue of first to file vs. first to invent and he said that the only benefit of making the United States a first to invent nation is that the U.S. Patent System will now be in harmony with the patent systems of Europe and Asia. Beyond this single benefit he said, there were absolutely no other benefits to being a first to file nation. Although Mr. Behmke was the only attorney we spoke to who held this particular opinion, it is extremely likely that there are others like him within the patent law community and that this change is not as smooth and accepted as we previously believed.

As one can see, there are as many negative impacts associated with the passage of the AIA as there are positives. As one might expect, this change is quite radical and will redefine the way in which inventors and small and large companies interact with the USPTO and conduct business. In the years to come, we might see a shift from court room battles over what is patentable to disputes which will take place under the jurisdiction of the USPTO due to the newly established post grant review proceeding. In addition, the new fee schedule will definitely have a major impact on the relationship between the USPTO and inventors and business across America. Most of the lawyers we spoke to predicted that the costs associated with obtaining a patent will only increase in the future. It will also be interesting so see what kind of impact the removal of the best mode prevision of the law will have on the patent law community and the course of invention and business itself. Only time will tell as to which negative attributes of the AIA prove to be difficult to work around and which negative attributes prove to be only paper tigers in the minds of many members of the patent law community.

Topic III: Opinions of the USPTO

The USPTO is the governing body for all patent protections in the USA. The USPTO must ensure that patents are indeed valid based on their novelty, nonobviousness, and usefulness. These are impressive demands, given the vast amount of patents that have been filed and issued before, as well as the overwhelming torrent of new patent requests that are submitted by inventors. The USPTO often irritates companies and inventors alike with their prolific backlog and significant fees.

People generally do not like paying the government, which means that any increase in governmental fees will invariably irritate people. Under the old laws, Congress controlled the fee structure of the USPTO. Congress also dipped into the USPTO's treasury in order to support the US budget, but the AIA changed that. The USPTO is now in control of its own fee structure and its treasury will be safe from the sticky fingers of the US Congress. Ms. LaCroix expressed that the change in fees was implemented by the examiners to make more money. There is a chance that the USPTO will not become any more efficient with the extra money. However; if the USPTO increases its efficiency with the extra income, this may be a win-win scenario.

The USPTO has begun exercising its new freedom to create and change fees, and they have implemented several new strategies aimed at increasing revenue, as well as providing a more even playing field for large and small companies. The new fee structure, allowed by the AIA, creates different classifications of organizations, from microentities up to large companies.

The first problem identified in this system is that the microentity protection does little to allow for small, new organizations to actually file a patent in a short period of time, since there is no deferral of patent attorney costs and these organizations lack untethered capital. The 75% reduction in fees is still helpful, but the attorney fees constitute most of the cost of acquiring a patent anyways. Additionally, Universities qualify as microentities, which allows them to produce IP at a faster rate, since the cost is reduced. This is unfair to the average member of society, but the IP generated at Universities will help to increase the amount of technology generated domestically.

Larger companies will be split into different categories based on the number of employees. This seems reasonable—as companies grow, they can usually afford to pay more for goods as they have access to the money immediately. The problem with this tiered system was identified by one of our interviewees: companies can lie and the USPTO will have no good way of checking on these companies. This is a huge problem because it disincentivizes people and companies from playing by the established rules. Instead of penalizing these companies, the USPTO will likely never know that they were being dishonest. This then gives an advantage to those who did not tell the truth. Another concern that was raised was the fact that larger corporations will now be incentivized to file their patents through child companies, where the fees will be lower. This again helps companies that were not honest, which is not something that any law should ever do.

The USPTO has instituted major changes to the fee structure of acquiring a patent. All of these changes are derived from a desire to allow for equality between small and large corporations, but in overregulation, the USPTO may have created loopholes that can be exploited. This is an unfortunate side-effect of instituting regulations without having a strong method by which to enforce them. All of this negativity aside, Mr. Rouille and several other attorneys noted that the USPTO is simply a government entity. It is by nature a bit cumbersome and slightly unrealistic, but that it is neither particularly good nor particularly bad. They also noted that the USPTO will likely always be slow, expensive, and generally mediocre due to the dullness of their work and their protection as a government entity.

One of the biggest problems that the USPTO faces is the prolific turnover rate of new examiners. One attorney claimed that about half of the people that they hire in a given year leave within one year of the beginning of their employment. When an examiner leaves, his position must be filled, which costs the USPTO money, because they must be trained before they can start handling patent prosecution. This examiner then has a fifty percent chance of leaving within the next twelve months. The problem is evident, but its causes are numerous.

This turnover rate is astonishingly high, and it underscores the USPTO's problematic dynamic. They underpay employees, which means that employees are always looking to leave. The job is also quite demanding. The examiners must prosecute a quota of patents annually; regardless of the complexity of the patents they are assigned. This lack of happiness and underpayment of the patent examiners in the US leads to a high turnover rate.

Mr. Behmke mentioned that in countries such as Germany, being a patent examiner is a respectable career. That is not the case here. Americans are often far less praising of their patent examiners than some of our European counterparts, which further disincentivizes our examiners. These employees are then more willing to leave because they are not being paid well, they are being overworked, and their work is not viewed as rewarding.

There is a chance that the USPTO will have more money available thanks to their ability to self-regulate. Mr. Duquette explained that the fee increase of about fifteen percent will help to fund the Post Grant Review Office. Additionally, if the USPTO increased pay of examiners or reduced their workload by hiring more examiners, they may be able to increase their retention rate to a reasonable level. They will essentially be able to finally increase worker happiness, because they ought to be able to raise the funds to do so. The USPTO's ability to control its own fee structure may be quite helpful in making the organization operate more smoothly, but this is merely conjecture, as nobody knows how the extra funds will actually be allocated.

The USPTO was not harmonized with the rest of the world until the AIA. This led to disunity between the claimed scope of inventions in the US and abroad. A single device could have two completely different set of claims in the USA and in the rest of the world. The AIA harmonized our system with the European system, which alleviates these potential disconnects between patent protections around the globe. This will be a very positive change given the number of multinational corporations that will now have a much simpler time establishing and defending their patent portfolio since it will be universal in nature.

The USPTO has made changes to its fee structure. The changes in fees have created several loop holes in the law which may be exploited, but they changed their fees in order to allow for equal rights between small and large companies. They may not have completely succeeded, but they did begin to delineate different categories of businesses that generate patentable ideas, which is a step in the right direction. Their increase in fees across the board was called selfish, and is generally viewed as a negative effect of the AIA, but that may not be completely fair. Although we have yet to see how the USPTO will actually use these new funds, they may put them into employee retention, which means American patent examiners will be more capable individuals with more investment in their work. This is clearly hypothetical, but it is likely that the USPTO will try to allocate some of its new funding towards the problem of employee turnover rates.

The USPTO's other major change under the AIA is harmonization. This is touted as one of the greatest accomplishments of the Act, because it simplifies the patent process for multinational corporations. Harmonization was touted by all of the interviewees as a positive change, which is good since this was one of the major reasons for the Act. This international harmonization in turn makes business more efficient, which should help to increase the rate of technological innovation by accelerating the patent process.

In sum, the AIA allows the USPTO more freedom financially, and more global connections. The financial freedom of the USPTO can only be realistically evaluated after a few years. If they are being selfish with the money, then it is more of a negative change, but if the quality of their service increases, which it may, it was a more positive change. International harmonization was heralded by most as a positive change. This is a fair evaluation, since it will free up business resources from suffering through patent prosecutions that were different in the US than they were abroad. The AIA may significantly help in bringing the USPTO into a more efficient, more integrated organization.

Topic IV: Litigation

Patent nomenclature can be confusing. All patents undergo prosecution, wherein they are determined to be viable or not viable by the USPTO. This process can take a long time, since the backlog makes it take a long period of time to actually get any response on the status of one's patent submission. Patent litigation, on the other hand, only takes place after a patent has been granted. Litigation can be caused by any number of infractions, such as using some product or process that somebody else patented, or a patent overlap, or even excessive broadness of the claims which were not properly prosecuted by the USPTO. Patent litigation can take a lot of time, since the details being discussed are generally highly technical in nature.

Patent litigation can have several different causes. The causes include overlaps in patent claims; infringement upon patented material, patent validity given the requirements for a patent's claimed protection, as well as others. The first to invent system used to allow for patent trolls to harass valid patent holders by claiming that they had invented a patent first. This could set a valid patent holder back with large legal fees and a large amount of time spent dealing with court dates as well as the USPTO, who handled issues regarding who invented a patentable idea first. This in turn reallocated sparse resources in the USPTO, which increased the severity of the backlog. In practice, this was rarely an issue. Such a small volume of all patent litigation was caused by disputes over time of invention that the changes to a first to file system likely have a negligible effect on litigation.

Patent litigation will undergo a number of useful changes thanks to the America Invents Act. The first major change is noted above, and pertains to the rights assigned to the first inventor of a patentable creation. This individual/corporation used to have rights as long as they were within the realm of due diligence in submitting their patent application. The wording used

to describe the timeframe that the inventor needed to submit a patent application within was vaguely described, which caused an issue with interpretation and implementation. Despite this vagueness, very little litigation was based on questions of who invented first according to all of the attorneys that we interviewed.

Additionally, the AIA has harmonized the American Patent System with the European patent system. This will reduce the amount of litigation because patents should be identical within the two systems, which means that the same invention will now have the same protections across most of the world. This will help companies to clearly understand the protections afforded to them by their patents, which should reduce unintentional infringement. This will save a tremendous amount of resources in litigation that is caused by misunderstanding which stemmed from the disconnect within the international community.

Despite all of these changes, the likelihood of any notable reduction in the amount of litigation is doubtful according to most of the attorneys that were interviewed. The only real change that may occur was highlighted by Mr. Duquette. He stated that he believed the AIA may take litigation out of the courts and place it within the scope of the USPTO. The biggest two changes were switching to a first to file system, and harmonization with the rest of the world. All of the attorneys that we interviewed explained that there were nearly no lawsuits that revolved around time of invention. Additionally, due to willful infringement provisions, most accidental international infringements were not resolved in a litigation battle, but rather with out-of-court settlements and deals. The fact of the matter is that most litigation was used offensively as a corporate tool to leverage smaller companies or harass competitors. The AIA did little to reduce this type of litigation except to take away a few minor excuses. In fact, the AIA did not seriously intend to reduce litigation, but rather to make it a bit more of a

hassle to spam opposition with lawsuits as well as take away an excuse for patent trolls to sue. While this was a positive step, it completely ignored the problem of corporate harassment, which is becoming a more significant portion of patent litigation. Overall, the fact of the matter is that the AIA was focused towards harmonization, and litigation was a lower priority issue.

Topic V: Other Changes that would be Useful

While our subjects agreed that the America Invents Act makes many positive changes to the American patent system, not every issue was addressed. One especially vague section of the U.S. patent code is 35 U.S.C 101. The text of this statute reads, "Whoever invents or discovers any new and useful 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." Specifically, "new and useful process," and "composition of matter" are vague phrases that have allowed everything from genetically modified organisms to tax evasion strategies to become patentable. In the AIA, provisions have removed these two classes from the realm of patentable inventions, but there is still a lot of grey area to be worked out. One class of invention that the AIA fails to address is also one of America's biggest industries, software. Congress has refused to touch the controversy that is software patents since the 1950's when they first became an issue. Since then, all of the decisions regarding the validity of a patent claim involving software have been made in the courts. However, judges can have different interpretations of the law, so a clearly defined statute offers more guidance than judicial precedents based on a few landmark cases. The clearer the law is on the subject of what inventions are patentable, the easier it will be to settle disputes on patent validity. If we can resolve such disputes sooner -- or prevent them from happening altogether -- inventors in

America will be able to direct more of their resources into development and production rather than legal battles.

Perhaps the reason no treatment has been given to software is that Congress seems to have no problem with the way case law treats software patents. Tax strategies are a different story. If Congress allows tax strategies to be patentable material, businesses are rewarded twice for discovering loopholes in the tax code: they save money on taxes, and then receive licensing fees from other business that use the same loopholes. Ethical implications have led the AIA to prevent patents from being awarded on organisms as well. But is there a reason Congress should care about software patents?

The answer is yes. The software industry is unique in that it deals almost entirely in intellectual property; nearly every piece of software requires its users to accept a license agreement before they can use it. As such, it is an industry very sensitive to the patent law that governs it. Specifically important to the industry is the scope of the enforcement that software patents tend to receive. Prior to the arrival of the software industry, broad protection was often thought to provide the perfect balance between incentivizing the primary inventors and compromising the competitive capabilities of their adversaries. However, the California Law Review has published findings concluding,

> …that broad scope is not optimal, and that patent law needs refinement if it is to promote rather than impede the growth of this industry, which is characterized by rapid sequential innovation, reuse and recombination of components, and strong network effects that privilege interoperable components and products (Cohen & Lemley, 2001).

In order to prove that the treatment of software patents need refinement, we must show that the software industry is unique among American industries in the way research and development contribute to new innovations.

Overly broad enforcement causes even more problems, such as virtually necessitating mergers and acquisitions which reduce the number of competitors in the market, and the turning of patent trolling into an even more lucrative practice. In the past few years we see that Google has acquired Motorola in order to defend an infringement suit, Microsoft has bought a very valuable patent portfolio from AOL, and Apple has sued Google and Samsung in countries all over the world. All of this activity reflects a transition toward a more aggressive use of IP in the software industry. The Lodsys Corporation is a notorious patent troll that makes all of its money simply by licensing out its portfolio of patents without actually putting any of its own software on the market (McAndrews, et al). This is not to say that Apple and Lodsys do not hold valid patents or produce anything of value, only that one effect broad patent protection is having on the industry is an increase in the amount of expensive lawsuits which, if successful, would only reduce the amount of innovative and viable products on the market.

Another artifact of today's patent law is the non-practicing entity, more colorfully known as the patent troll. Non-practicing entities amass large portfolios of broad patents without even utilizing the inventions those patents describe. Then, the entity will sue any individual or company with technology that is similar to one of the patents. It is not important that real infringement may actually occur, only that there is enough of the case to incur a significant amount of legal fees in defense of the suit. In most cases, companies will settle with the trolls and pay a small licensing fee simply as a matter of convenience. The amount of money trolls can make doing this is staggering, and they are enabled by a set or rules regarding the joining and consolidation of court cases designed to streamline our court system. These rules have allowed trolls to put the names of dozens of alleged infringers on a single lawsuit, state their case once, and oftentimes collect settlement money from defendant after defendant. These rules

effectively multiply the patent troll's resources by as many defendants as they are able to name, and allows them much bigger returns as a result. The cost to innovators has been estimated to be $500 billion dollars in the United States just from 1990 to 2000, and more recently the loss is about $83 billion per year. (Bessen, et al). However, the AIA does away with the trolls' favorite avenue for doubling up on their money. In order for a patent infringement lawsuit to name multiple defendants, all defendants must be tied to the same instance of infringement. Whereas tacking the name of a company who is only very questionably infringing on a patent onto an existing suit may have been a profitable move, a lawsuit naming only that defendant might be unprofitable at best and frivolous at worst. The change doesn't do anything to stop patent trolls from existing, but it should shrink their business, and their toll on innovation, considerably.

Topic VI: Potential Beneficiaries of the AIA

Laws naturally favor some individuals over others because they are always imperfect. Wording can be ambiguous; results can be unanticipated; and a plethora of other issues can arise, not including those that are caused by backroom deals and other unsavory deal-making.

The AIA is now a law and many of the interviewed attorneys differed on who they thought stood to benefit the most from the AIA. Some believed that big business was the real winner, while answers varied from the US to the USPTO to European and Japanese Inventor and all the way around to patent attorneys themselves.

The first major beneficiary that was noted by the interviewees was large corporations. Larger corporations have more untethered capital. Ms. Lacroix explained that large companies can afford to spend huge amounts of money on short notice, which can result in fast turnaround times, especially on patents. Ms. Lacroix did believe that the USPTO fee structure was advantageous to larger businesses. Take, for example, a small company with five employees. If they have an idea for a widget that is completely patentable, they may have to find and spend over fifteen thousand dollars on a patent. That

money may not be available for weeks or months because all of their capital is tethered in current projects. If a big company has the same idea and creates a nearly identical widget, they can move onto the patenting stage in days, not weeks. This advantage allows for large corporations to simply spend money faster in order to get the benefits of patent protection even though they did not invent the product first. This type of situation along with the non-linear scaling factor of the fee structure gives larger businesses a clear advantage in patent acquisition.

The second major beneficiary noted by the interviewees was the USPTO. The USPTO arguably has the most to gain from the new legislation. They will no longer be raided by Congress for funds, which is bad news for the US deficit but good news for the USPTO. In addition, they will be able to set their own fee structure. This is the lynchpin of the argument for the USPTO being the largest beneficiary of the new law. The new fee structure will increase fees by about fifteen percent, but it does allow for micro-entity protection, where small corporations with few patents have a reduced fee. Mr. Behmke noted that the USPTO will likely see no distinct increase in workload, except perhaps due to the implementation of the Post-Grant Review. Essentially, the USPTO significantly increased its revenue without adding any extra responsibility.

The third major potential beneficiary identified by our interviewees was higher education. Universities have always held a special place in American society when it comes to driving innovation and implementing positive change in the scientific portfolio of the nation. As such, the AIA includes significant provisions to incentivize universities to generate patentable ideas. Mr. Behmke confirmed that universities will be allowed to pay micro-entity fees to the USPTO, which is a significant break on the fees paid by normal corporations. This fact grants universities an advantage over other inventing entities. This provision will help to encourage invention for the sake of invention, which can result in a proliferation in cutting-edge technology.

Patent attorneys also stand to gain from the new AIA law, according to the attorneys that we interviewed. The first to file system will incentivize inventors to get their materials patented as soon as possible. This increases demand for patent attorneys, which may allow them to raise their hourly rates.

Additionally, since Universities are being incentivized by the new laws, attorneys may have a larger market in the realm of student and faculty inventors from colleges in their areas. The benefit to patent attorneys is highly dependent on changes in the rate of generation of patentable ideas, as well as the rush felt by inventors to get their materials patented, so they are not directly beneficiaries of the act

While universities, large companies, and patent attorneys stand to gain clear advantages, the USPTO seems to be the largest beneficiary of the AIA. The act is clearly aimed at increasing the USPTO's revenue but it does little to add new responsibilities or expectations of performance. This is not a distinctly bad facet of the Act, as it is better for the government organization to benefit than for private institutions to gain unfair advantages over competitors.

The USPTO may also be able to use this money to benefit society by serving patent applicants more quickly and effectively. They may be able to retain examiners for longer with more lucrative wages as well as motivate their employees to be more efficient, which may reduce backlog. All of these potential increases in performance are purely hypothetical, and only time will tell is these potential improvements will actually occur when the legislation does not explicitly motivate the USPTO to be a more effective organization; however, they clearly stand to have the highest increase in revenue due to the law than any other groups mentioned in this section.

Topic VII: Provisional Patents

One of the most common misconceptions regarding the inception and passage of the America Invents Act is the introduction of the "provisional patent" to the United States Patent System. Most people believe, as we previously did, that the idea of a provisional patent was unique to the AIA and that it might be a game changer in the world of patent law. However, after some research and certainly after our first round of interviews, we learned that our knowledge regarding provisional patents was fundamentally flawed. We grew very quickly to understand that provisional patents had been around for a number of years prior to the passage of the AIA and that it was common practice for the examiners within the USPTO to review and grant provisional patents. Armed with this new knowledge and understanding, we adjusted the questions asked of the patent attorneys interviewed regarding provisional patents. This topic actually turned out to be one of our most interesting because there seems to be a great difference of opinion within the patent law community regarding provisional patents in the sense that some attorneys love the concept of provisional patents and some attorneys dislike the concept entirely.

One of the patent attorneys we spoke with regarding this topic, Jennifer LaCroix, had a strong opinion regarding provisional patents. She said that "provisional patents have always been around and can be quite useful." Mrs. LaCroix also said that "when a client of mine files a provisional patent application, I normally advise my clients to file a full patent application as well in order to combat the long waiting period associated with the patent office backlog." When we asked her why she had such a good opinion regarding provisional patents she explained that if used correctly, provisional patents can be an effective tool. This is so because anything disclosed within a provisional patent is protected once the provisional patent issues. She explained further that a patentable product can be protected by law using a provisional

patent and introduced to the open market while the company or inventor is waiting for the USPTO to issue a full patent. As she put it, "it just makes sense to file a provisional patent application along with a full patent application because if the applications are prepared correctly, the patent process will be much smoother and quicker for everyone involved based on the rules and regulations associated with the provisional patent system." However, she also mentioned that provisional patents can be a nuisance because "if a provisional patent application is not well written and is full of crap, then the result is a provisional patent that is in all respects worthless." We asked her to again elaborate and she informed us of the fact that anything not disclosed in the provisional patent application cannot be included in an application for a full patent on the same invention. Mrs. LaCroix made it very clear to us that in order for a provisional patent to be successful, it must be well written and disclose fully everything about the invention. In general, we discovered as we continued with our interviews that Mrs. LaCroix's sentiments are shared among many other attorneys within the patent law community.

One of the other attorneys we interviewed also expressed a strong opinion regarding provisional patents and his comments were rather interesting because he praised the concept of a provisional patent while at the same time questioning the practice. Attorney Jeff Duquette said that "provisional patents are a double edge sword. If used properly, provisional patents are wonderful. However, there is very little case law regarding provisional patents and this is an issue." We asked him to elaborate on his concerns about the lack of case law on the subject of provisional patents and he informed us simply of the fact that suits regarding provisional patents tend to be unpredictable and expensive because the courts have very little precedent to fall back on when it comes to settling provisional patent disputes. However, Mr. Duquette did outline several of the positive attributes of filing a provisional patent and said that "provisional patents

are good for small companies who are trying to save money and get their first inventions patented so that they can enter the marketplace with a patented product. Also, when provisional patents are examined, the examiners are less rigorous and less picky. Obtaining a provisional patent is quicker, easier and cheaper than obtaining a full patent." However, although Mr. Duquette shared his positive opinions regarding provisional patents, he concluded his statements regarding provisional patents by reiterating his concerns about the lack of case law on provisional patents as well as echoing Mrs. LaCroix's statements about poorly written provisional patents. Mr. Duquette also informed us of the fact that the issue of provisional patents is somewhat controversial within the patent law community and said that we would more than likely end up hearing a number of opinions regarding provisional patents. Mr. Duquette was indeed correct in that almost every attorney we spoke to presented a different opinion regarding provisional patents.

When we asked attorney James Behmke what his opinion was regarding provisional patents, he had no problem saying that he is not at all a supporter of provisional patents. As he put it, "I don't like provisional patents. I think that they serve a purpose, but I believe that they are dangerous because if they are not well written, they are worthless. Also, there is no conversion between a provisional patent and a full patent on a product." We asked him to elaborate on his comments regarding conversion from a provisional patent to a full patent and he said that it is not possible to convert a provisional patent to full patent and he did not like that at all. He also echoed Mrs. LaCroix's statements regarding what can happen when a provisional patent is not written very well and stated that he really dislikes having to deal with a badly written provisional patent. One example that Mr. Behmke shared was what happens when inventors file provisional patents and then forget the fact that once the provisional patent has

been issued, they only have one year to file a full patent application. Mr. Behmke said that when inventors forget to file for the full patent, once the provisional patent expired, anything disclosed in the provisional patent becomes vulnerable because it is no longer protected. "The provisional system is just a headache" Mr. Behmke said and he dislikes having to work with provisional patents in any respect. On the whole, Mr. Behmke was not at all keen on the concept of provisional patents and he also objected to the way in which people file provisional patents and the way in which the examiners within the USPTO examine and issue provisional patents.

On the whole, we discovered very early on in the interview phase of our project that everyone has a different opinion regarding provisional patents. Many of the attorneys we spoke to like provisional patents and an equal number do not like provisional patents. In general, those that like provisional patents like the benefits associated with provisional patents. Most like that the process associated with obtaining a provisional patent is cost effective, fast and designed to protect those who file provisional patents. However, those that do not like the provisional patent system dislike the side effects brought about through the use of provisional patents. Those who dislike the system dislike the fact that poorly written provisional patents are granted and then cause problems. Many attorneys also dislike what tends to happen when inventors and small companies forget to observe the one year deadline to file a full patent application. In general, the attorneys that dislike the provisional patent system dislike the headaches that the system can cause them.

There is however one aspect regarding provisional patents that attorney's everywhere can agree on and that is that the AIA will have very little impact on how the system will operate in the future and have very little impact on the way in which people go about obtaining provisional patents. As attorney Dave Rouille put it, "A change in the law that does not affect the

provisional patent system will have no effect on the problems associated with the provisional patent system." All of the lawyers we spoke to echoed this statement and also suggested that perhaps in the future, it might be appropriate for the government to look into the provisional patent system itself and perhaps institute some reform measures. However, until that time comes, provisional patents will continue to function as they did prior to the passage of the AIA. Only time will tell how inventors and companies will utilize provisional patents in the future.

Conclusions

Overall, we believe the America Invents Act will be positive for America for a number of reasons. First, the patent system will be simplified greatly. The slow and ugly process of determining who was first to invent will be a thing of the past. Once we establish the rules of the derivation proceedings that come in to replace the interference proceedings, the amount of effort saved per patent will result in an overall more efficient patent system. This effect should be more noticeable once the USPTO expands its capacity and sets up satellite offices around the country. However, there will also be some additional effort required before America's businesses, patent attorneys, and patent office officials fully sort out the new system. The USPTO has already been training its staff to make the transition as smooth as possible, and we commend them for doing that. Still, it will take some time before the new system will be routine for everyone involved, and some amount of clarification of language may be needed down the line. Specifically, the phrase "public disclosure" present in the new 35 U.S.C 102 was never clearly defined, and this was a cause of concern to the attorneys we interviewed. We may see more lawsuits involving the use of that rule at first as companies try to take advantage of it to defend their own patents or challenge the validity of others' patent. However, the number of these types of lawsuits should decrease as the language becomes clearer and better defined. We therefore conclude that the simplification of the patent system will remove a burden that was shared by the USPTO and inventors alike, and that by lifting this burden we will see both entities become more agile over the coming years.

It is easy to see why a simplified patent system will be advantageous to businesses who file dozens of patents each year. This advantage is made even greater by the fact that the patent

system will also be more in line with those around the world. Businesses will only have to follow one set of rules when preparing patent applications in multiple countries. Therefore, applying for patents will be made easier not only within the United States, but on the international scale as well. The same holds true for foreign businesses who wish to file in the United States. Whether the Act results in American businesses making more money overseas, or foreign companies bringing their products to the U.S. Market sooner, in the end, America and the American People stand to benefit from the passage of the AIA.

The America Invents Act also addresses the capabilities of the USPTO itself. The patent office has long suffered from raids of its funds as Congress looked for money with which to fund other programs. One of the provisions of the AIA grants the authority for the USPTO to regulate its own fee schedule as well as retain the proceeds generated by the fee schedule. This should allow the patent office more resources for the hiring of patent examiners, as well as the operation of the satellite offices they plan to open. Local offices will be highly beneficial for small businesses and independent inventors because inventors and small businesses will be able to submit patent applications to their local patent office instead of having to send everything to Washington D.C. The first satellite office will open in Detroit, MI and the USPTO is continuing to take suggestions on where to open additional satellite offices. The satellite offices will revolutionize the way in which the USPTO operates as well as make the USPTO more efficient and both changes are advantageous for private inventors and small business.

As much as the simplification and harmonization of our patent system will benefit inventors, the America Invents Act is not a quick fix that will usher in a golden age of invention through the implementation of a patent wonderland. Even though we expect the new patent system to be more efficient than the last, the USPTO will still have to grapple with a huge

backlog of patent applications. All of these patents are still subject to the patent laws in effect at the time they were filed, which means that for the next few years, we will likely not see many changes when it comes to the enormous patent backlog. Additionally, as more patents are filed under the first-to-file rules, we may see less effort required to examine each patent. However, the new first-to-file guidelines do not guarantee that the time required for each patent to issue will be decreased. The amount of time it takes to grant a patent application also depends on how many other patents are awaiting prosecution. Based on the data we collected during the interview phase of our project as well as the research we conducted regarding the USPTO it is our conclusion that the backlog issue will not be resolved anytime soon.

Another problem that has long plagued the USPTO is the retention of patent examiners. It is a well-documented fact that 50% of patent examiners who are hired stay with the USPTO longer than one year. Most leave to accept jobs as patent attorneys at law firms. Examiners know that they can make more money as attorneys, and most prefer the firms' working environment to the burdened and backlogged patent office. The personnel problems associates with the USPTO are in stark contrast when it to the state of affairs in Europe, where being a patent examiner is seen a position to aspire to. A higher retention rate of patent examiners would result a higher quality of patent examination because the USPTO would have more experienced examiners. It is our opinion that in order to entice patent lawyers to become examiners, the USPTO will have to provide examiners with greater benefits as well as do whatever it takes to make the task of being a patent examiner more prestigious and less grueling and monotonous. Unfortunately, the AIA does little to address this issue and as a result, it is our conclusion that the number of experienced examiners within the USPTO will remain stagnant as will the quality of the work being done by the examiners.

In addition to the conclusions we have outlined above regarding specific subsets of the AIA, we would like to draw one extremely important conclusion based on the data we collected and analyzed during the course of our project. We would like to begin by stating that our first and perhaps most profound conclusion is that it is virtually impossible to predict the affect that the AIA will have on the American Patent System and on the rest of the world because the law is simply too new had as not had enough time to take effect. All of the attorneys we interviewed all specifically stated that although they have opinions regarding what might happen now that the United States has become a first-to-file nation, no one can really predict what will happen. Our patent system is about to undergo the most radical change that it has ever been subjected to and only time will tell how the America Invents Act will truly impact not only the American Patent System, but the global patent community.

Future Areas of Research

Patent Law & Pharmaceuticals

The Pharmaceutical Industry is a cornerstone of the U.S. as well as the global economy. This status as a driving force of the global economy means that the AIA's effects on the pharmaceutical industry are pivotal in analyzing the quality of the Act. Companies like Merck, Pfizer, Shearing Plow and GlaxoSmithKline are among the largest, most profitable and most influential companies in the world because these companies develop pharmaceuticals that help billions of people around the world. Their pharmaceuticals are valuable because patents cover the arrangement of molecules, which in turn grants these pharmaceutical behemoths the ability to have a temporary monopoly to offset their research costs.

In recent years, demand for life saving drugs has increased at a rate proportional to that of the global population and the pressure on the drug companies to develop cutting edge pharmaceuticals to treat everything from the common cold to cancer is greater than ever.

Developing cutting edge, safe and effective drugs is extremely expensive. Research and development requires a tremendous amount of manpower, as well as expensive facilities and equipment. This is necessary because research and development (R&D) is the driving force behind the pharmaceutical industry. The discoveries made by the researches in the R&D divisions of the large pharmaceutical companies often determine which products the companies will develop and eventually attempt to patent. The inner workings of every major pharmaceutical company are kept secret in order to protect groundbreaking discoveries which might become patentable products. For pharmaceutical companies, obtaining patents for newly

developed products is necessary because a product without a patent is vulnerable and could be copied by a competitor who does not need to offset exorbitant R&D costs.

Obtaining patents is so important that many of the large pharmaceutical companies have a legal division built into their corporate structure. The attorneys who work as in-house council to large pharmaceutical companies work solely to obtain patents for newly developed products. According to a recent study published in 2007,

> Internal patent attorneys are more likely to be highly specialized in the firm's unique technologies and have a deeper understanding of the firm's research program and (current and planned) products. Internal patent attorneys typically also have direct access to and relationships with R&D personal, and consequently can observe more technology developments at an earlier stage and interact directly with researchers to explore patentable ideas. Patent attorneys may also gain privileged information within the firm that provides them with a clear picture of the firm's strategic direction. (Somaya, Williamson & Zhang, 2007).

Pharmaceutical companies understand the value of having in-house counsel because the attorneys and the researches often develop personal relationships and these relationships are beneficial for the overall success of the company. The high degree of communication between the R&D side and the patent side of the corporate structure allow for their patents to be extremely precise, which affords better protections to the companies that are investing in R&D.

The large pharmaceutical companies rely on the patents they are able to obtain for their products. The America Invents Act will be beneficial to the large pharmaceutical companies because the AIA has established the filing date as being the key to securing patents and the attorneys who work for the large pharmaceutical companies will be able to exploit this change in the law for the benefit of the large pharmaceutical companies. Now that the researchers no longer have to prove that they were the first to develop a new life saving drug, all the attorneys will have to do is file a patent application to protect the new discovery and as long as no other company has filed a patent disclosing the same discovery, the patent will issue and the discovery

will be protected. The America Invents Act has also eliminated much of the "red tape" which is associated with obtaining a patent for a pharmaceutical product and now that much of the "red tape" is gone, new life saving drugs will hit the markets more quickly than ever before.

The pharmaceutical industry is a major force in global economics and generates an incredible amount of patentable material. In the future, the AIA's effects on the pharmaceutical industry would be an interesting subject for further investigation. It would be worthwhile to establish exactly what those effects are and how well they matched our hypotheses.

Patent Law & Small Business

The American economy has always been driven by small business. These small businesses provide innovation, efficiency, and lucidity to the American economy. Therefore, the AIA's effect on small businesses must be considered in appraising its efficacy. Ideally, any individual or business ought to have the same rights to their work, regardless of size or previous innovation. This is a sizable request, as patents can cost over ten thousand dollars, which is usually outside of the budget of smaller businesses. The America Invents Act aims to help small and large businesses alike, but its method for helping small business is fairly interesting. The new legislation focuses on streamlining the patent system and helping to level the playing field between small and large businesses, which should increase the rate of innovation as well as the competition in the global market.

Large corporations are able to spend far more money and time on research and development, so the America Invents Act has been structured to try to help small businesses to thrive and compete in the realm of intellectual property.

The first-to-file system potentially eliminates a lot of potential abuse that larger companies could do to smaller companies. The Act will significantly reduce patent trolling, a

practice wherein one person does not file for a patent, but waits for another corporation to do so, and then begins a legal battle over who invented first. These lawsuits could drive small businesses into bankruptcy because of the difficult nature of proving any sort of conclusion with regards to who invented first. While the Act should eliminate quibbles over who invented first, it does little to address the disputes between individuals and corporations that are caused by a general lack in specificity of terminology present in the claims of patents. This causes most of the litigation on patents, as patents can be challenged if they are too broad or if they establish rights that ought not to be protected.

The first-to-file system may make patent acquisition more difficult for small businesses, as it is difficult for them to raise the capital needed to pay for the attorney fees to file their patent. The Act tried to reduce the financial burned on smaller companies by creating the micro-entity category, as well creating different fees for businesses of different sizes. A micro-entity is defined as:

> An independent inventor with a previous calendar year gross income of less than 3 times the national median household income who has previously filed no more than four non-provisional patent applications, not including those the inventor was obligated to assign to an employer. A micro-entity also includes a university or an inventor under an obligation to assign the invention to a university. A micro-entity is entitled to a 75% reduction in many of the patent fees payable to the U.S. Patent Office during prosecution of a U.S. patent application. The patent office is expected to develop regulations to identify which fees will be eligible for the reduction and how joint inventors may qualify as a micro-entity. (Pappas)

Being categorized as a micro-entity significantly reduces the fees that must be paid to the USPTO for a patent application. This change is conceptually monumental but practically insignificant as up to 75% of the cost of a patent actually comes from attorney fees and not from the USPTO (What the America Invents Act means for the small inventor).

The America Invents Act clearly intended to help small businesses to compete in a market dominated by multinational corporations, but the nature of intellectual property rights for

technology is extremely convoluted, and as such, small businesses are still handicapped when compared to their larger counterparts who tend to have far more liquid cash. The liquid assets of larger corporations will always allow them to file their patents faster, fight lawsuits harder, and generally outpace the average small business. The provisions of the Act, then, are a positive step towards leveling the field between small and large business, but there is a good chance that the changes will do little to really help small businesses to acquire patents for their work, simply because they will always have less capital to quickly generate high quality patents.

We recognize that small businesses are a driving factor in the global economy. We would advise further research as to the specific effects that the AIA may have on small businesses in the U.S. and the rest of the world. Additionally, it may be interesting to investigate the impacts of the AIA on small businesses in five to ten years.

Appendix I: Phone Script and Interview Questions for Attorneys

Hello <Subject>,

Thank you for taking the time to participate in this interview.

Before we begin, we would like to establish that your participation in this interview is voluntary and you may leave at any time. You can also skip any questions that you would feel uncomfortable answering, or ask to go off the record before you respond and we will agree not to quote you in our paper. As a final measure to make sure nothing you say is misrepresented, we will offer you the chance to look over our final report before it is ever published for your input and approval.

Is that acceptable to you?

It would also be helpful to us to take an audio recording of the interview. Will you allow us to record the audio? If so you may ask us to stop recording at any time.

That being said, let's proceed with the interview…

Questions/Interview-----
First, what is your area of technical expertise?

How did you get into patent law?

Describe the practice you're in. (size, clientele, firm, etc.)

1. What was your opinion of the USPTO under the old system?
2. Of the changes found in the AIA, which do you think will be most helpful and which will be least helpful?
3. What effects will this system have on collaboration between inventors?
4. Litigation changes?
    a. How long was litigation within the confines of the old system?
    b. How often did you see litigation that was based on the claim that the one party was not actually the first-to-invent?
    c. What was the average costs associated with patent litigation?
5. Will the new system change the amount of litigation?
6. Was anything left unchanged that needed to be fixed?
7. Who stands to benefit the most from of this legislation?
8. What is your opinion on provisional patents?
. Are they useful/necessary/extraneous?
    a. Do they create new problems of their own? Explain.
9. Do you believe the new system will have any effect on the backlog?

10. Have you ever been involved in a suit to void a patent?

Thanks again for your time and participation. Before you go, we would like to ask if you might be able to suggest some other contacts who might be interested in participating in an interview with us.

<End>

Appendix II: Condensed Attorney Data

A. Most Helpful Changes
    a. Patent Harmonization and Simplification
        i. The standards by which governments across Europe, Asia and North America issue patents are now much similar than they have been in the past.
        ii. Filing Date is now King. He who files first, wins in court.
        iii. Removal of Grace Period
            1. Can no longer disclose an unpatented, patentable invention without first filing at least a provisional patent.
        iv. Prior Art Clarification
            1. The law now clearly states what is prior art. In addition, foreign prior art is now included within U.S. Patent Law.
        v. Change of Inventorship
            1. It is now easier for companies/individuals to transfer the ownership of a patent. (DOES NOT INCLUDE THE SALE OF A PATENT).
    b. Clears Frivolous Law Suites
        i. New law now eliminates law suits arising based who was first to invent a given device or product.
        ii. False Marking Suites
            1. More difficult to sue for falsely marking products or devices as patented or "patent pending."
    c. Removal of the Best Mode Prevision
        i. No longer have to disclose the best mode of production for a given product.
    d. Elimination of Interference Suits/Proceedings
        i. Process that establishes the filing date of a patent.
        ii. "Due Diligence" now no longer a factor in deterring whether a patent should issue or not.
    e. Establishment of the "Post Grant Review"
        i. Private Inventors and companies can now challenge a patent after it has been issued based on a specific set of criteria.
            1. Need to Look Up Criteria

B. Least Helpful Changes
    a. Removal of Best Mode Prevision
    b. Post Grant Review
    c. Change in Fee Schedule
        i. USPTO now has the power to set its own fee schedule and patent applications will become more expensive.
    d. First to File
        i. Lazy!
        ii. Morally Correct or Morally Incorrect
    e. Prior Art Now Favors Foreign Filers

i. American Standards more stringent than European Standards
ii. Europeans coming to the U.S. with a patentable idea do not have to meet the same standards that Americans filing within the U.S. do.

C. Opinions on USPTO
    a. Fees
        i. Increased due to power to regulate.
            1. Fee Schedule for Large and Small Companies
                a. Fees are prohibitive to small entities.
                b. Micro entities protected.
                c. Larger companies will claim small entity status or use child corporations
                d. Separation between large and small entities is too well defined. Also, the new regulations which delineate large and small entities are not well enforced.
            2. Penalty for Paper Filing vs. Online Submission of a Patent
    b. Turnover Rates
        i. High turnover rates leaves the patent office will fewer experienced examiners.
        ii. Having few experienced examiners has a negative impact on the USPOT and inventors and companies because patent examinations can be sloppy and lead to problems.
    c. Old System
        i. Difference of claims between the U.S., EU and Asia.
        ii. It is a standard government agency. Not great, but not that bad.
        iii. No outstanding complaints that where worse than we expected.
    d. New System
        i. More selfish with regards to fees.
        ii. Better operational ability due to increased funding and decrease in litigation.
        iii. Too Early to Say with any Degree of Accuracy
        iv. Ask question again in 10 Years once the First to File System has taken full effect and the USPOT has had an opportunity to adjust to the changes.

D. Collaboration between Inventors
    a. There will likely be no effect

E. Litigation
    a. Duration can be from a few days to several years
    b. Suits generally did not focus on who was first to invent.
        i. First to Invent Trolling will no longer occur.
    c. There will likely be no change in the volume of litigation. (Almost Unanimous Agreement)
    d. Court room first to invent issues where handled by the USPTO.
    e. Less costly due to standardization
    f. Shotgun Law Suites might be a thing of the past

i. Can longer sue a large number of companies/inventors at once.

F. Other Changes that Would be Useful
   a. A revision of Section 101, what is patentable material.
      i. Congress has been avoiding this issue since the 1950's.
   b. Patent Trolling Issue
      i. More needs to be done to combat patent trolling.
      ii. People who have patents don't use them and then sue for violation when someone else does. (This needs to stop).
      iii. Anything involving software patents
         1. Virtually no previsions for software patents under the law and there needs to be a provision sooner rather than later.
   c. There are always more changes that can/should be made.

G. Who Stands to Benefit
   a. Large Companies
      i. Because larger companies have a larger amount of capitol, the fee schedule will have very little effect on the way they do business.
   b. The USPTO
      i. The changes did not really affect their workload. In fact, work load reduced with an increase in pay.
      ii. Examiners job made somewhat easier due to the elimination of the interference proceedings.
   c. Universities
      i. Due to their non-profit/micro entity status

H. Provisional Patent Applications (please remember these are not new)
   a. Useful!
      i. Can be filed with a provisional patent and this adds protection because the filing date for both is the same and the provisional patent takes place as soon as it is filed.
   b. Claim Definition is Poorly Defined if not Careful
      i. Can be filed, people forget they filed and then they get into trouble with a prior art claim if the provisional patent expires before a real patent is issued.
      ii. Poorly written and can cause problems down the line when it comes time to file for a real patent
   c. Small companies will find this helpful because they will have the opportunity to file a patent without having to make a full disclosure of the invention.
   d. Time Issue
      i. Expires one year after filing date

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