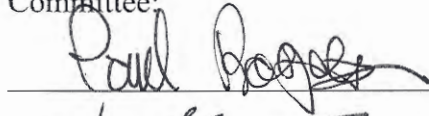


PATENT APPLICATIONS AND THE AMERICA INVENTS ACT: HOW GENRE  
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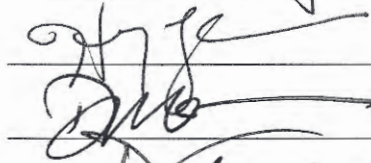
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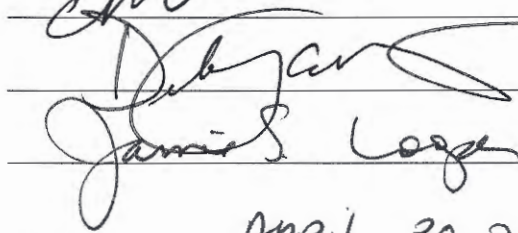
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of  
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in Partial Fulfillment of  
The Requirements for the Degree  
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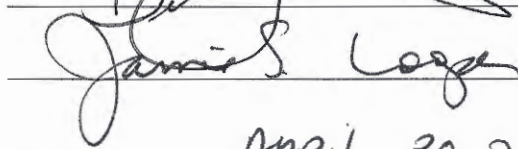


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*April 30, 2014*

Spring Semester 2014  
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Patent Applications and the America Invents Act: How Genre Mediates Social Actions  
and Ideological Goals

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## **DEDICATION**

This is dedicated to my loving wife Seeon Kim, the best partner anyone could ask for, and my wonderful son Sooyoung Bae.

## **ACKNOWLEDGEMENTS**

I would like to thank Paul Rogers, Doug Eyman, and Susan Lawrence, for their guidance and encouragement; I could finish this work due to their special consideration on my situation.

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## LIST OF ABBREVIATIONS

The America Invents Act .....	AIA
First Inventor to File .....	FITF
United States .....	U.S.
The United States Patent and Trademark Office .....	USPTO
Federal Trade Commission .....	FTC
Person Having Ordinary Skills in the Art .....	PHOSITA
Non-Practicing Entity .....	NPE
World Intellectual Property Organization .....	WIPO

## **ABSTRACT**

### **PATENT APPLICATIONS AND THE AMERICA INVENTS ACT: HOW GENRE MEDIATES SOCIAL ACTIONS AND IDEOLOGICAL GOALS**

Jongsung Bae, M.A.

George Mason University, 2014

Thesis Director: Dr. Paul Rogers

A patent-reform initiative called the Leahy-Smith America Invents Act (AIA) was signed into law in 2011. The act placed patent applications at the center of the reform and changed the rhetorical situation surrounding writing patent applications. Successful patent writers need to fully grasp the big picture of the rhetorical situation and apply it to their work no matter how confusing the message may be at a superficial level. For this reason, this study hypothesizes and examines a theoretical framework for the purpose of making the most of this change by fully understanding the big picture. The hypothesis is that “a genre mediates between social actions and ideological goals,” and this study will illuminate dynamic relations among social actors, their ideological goals, and the patent reforms embedded in the genre of patent applications.

## **CHAPTER ONE: INTRODUCTION**

The Leahy-Smith America Invents Act (AIA) was signed into law in September 2011. It suggests new processes of patent applications such as post-grant proceedings (validity of registered patents are allowed to be reexamined by request in the U.S. Patent and Trademark Office (USPTO)) and first-inventor-to-file system (patents are granted to a first filer rather than a first inventor). This act provoked controversy among the public. Some people claimed this Act is against small businesses and will deteriorate entrepreneurship in the United States, while others asserted that, on the contrary, the act benefits entrepreneurs. However, public discourse often occurs at a superficial level and without systematic knowledge of the ideological goals of American society that are implicated in the AIA. In other words, there has been little discussion of how the genre of patent application is situated in the AIA and of the ideological goals within the AIA that are reflected in the rhetorical situation.

When writing about a genre, technical writers consider situations including text, rhetor, and audience. Furthermore, it is important to use a theoretical lens to understand how writing is connected to society. In a larger sense, the writers need to consider the ideology and the social context of the community to which they belong.

We can find evidence to support a hypothesis by examining empirical cases. In this study, a hypothetical genre theory will be postulated and examined by investigating

the AIA patent reform: a genre that mediates social actions and ideological goals of the United States of the 21st century.

This examination will illuminate how the genre of patent applications is rhetorically situated and how the patent application plays a role between social actions and ideological goals. It will not examine patent society in a narrow sense, but rather will examine the U.S. economic or political environment in the 21st century from which the ideological goals arose. It will examine how patent applications mediate not only between social actions and the genre or between genres, but also between social actions and ideological goals in an activity system. This fundamental relationship is schematically illustrated in Figure 1.

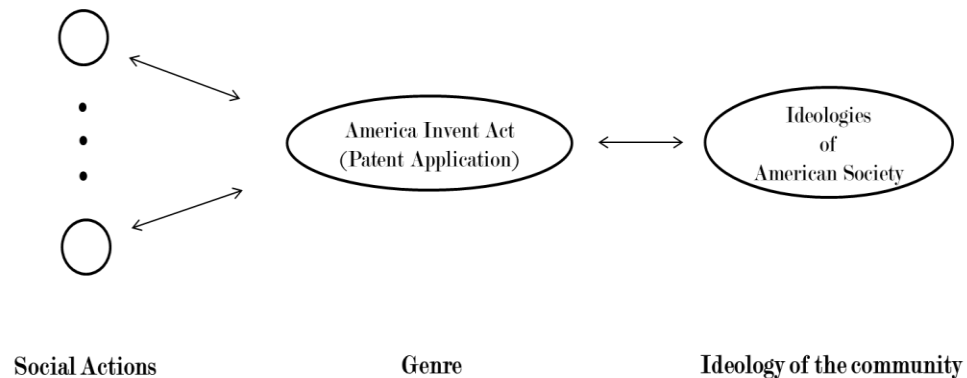


Figure 1 Schematic diagram of the relationship between social actions, genre, and ideology of the community

However, the meaning of the word “ideology” will not be discussed in this study because it implicates a whole range of useful meaning originated from divergent backgrounds, sometimes incompatibly, which is beside the point of this paper. The meaning could be construed as “forms of thought motivated by social interests”, “the medium in which conscious social actors make sense of their world”, or “socially necessary illusion” (Eagleton, 2007). The important thing is that “ideology” in this study stresses “social determination of thought,” not an academically or lexically determined meaning, so that “ideological goals” can be flexibly set by people who make or use it. Notice that people who want to lead society in different directions do not always organize their thoughts or activities consistently. The ideological goals will be found not only in a legal system, but also an activity system at the national level including a person having ordinary skill in the art (PHOSITA), legislators of patent reforms, inventors, patent examiners in the USPTO, and judges who hold traditional role in the patent system.

The hypothesis that a genre mediates between social actions and ideologies of the community that owns the genre will be examined by studying cases of patent applications during the early days of the U.S. patent system and following the AIA patent reform statute in the 21st century. If the hypothesis is universal, it will be empirically instantiated in the early days when the patent system was first established in the United States. This study will examine the hypothesis by investigating resources situated in those historical times before stepping into 21st century. It will also illuminate the similarities and differences of social actions and ideological goals, and the connection between them via patent applications in the eras of the 1790s and 2010s.

There are five logical steps to examine the hypothesis. First, it will be shown how the social actions of key figures created and shaped the U.S. patent system and its reform in the 21st century. Second, the ideological goals of the social actors in each era will be traced. Third, examining the hypothetical genre theory will be set up through an activity system and genre system that properly accommodates social actions and their ideological goals. Fourth, the way in which the genre of patent applications is situated in the patent system in each era will be investigated. Last, how the ideological goals are reflected in the rhetorical situation of the genre will be discussed.

Provided that these five steps are logically connected, the hypothesis will be successfully verified. The possible outcomes could be valid in some ways and invalid in others. Nonetheless, dichotomous verification will not be the expected result of this study. It is more important to picture how and to what extent the theoretical lens can be logically applied to see through the world.

## CHAPTER TWO: THEORETICAL BACKGROUND

### **Rhetorical Genre Studies in Technical Communication**

Lloyd Bitzer first defined the term “rhetorical situation” in 1968 as a natural context of persons, events, objects, relations, and an exigency that invites utterance. Ever since Carolyn Miller (1984) examined genres in terms of the rhetorical situations and claimed “genre as social action,” rhetorical genre studies (RGS) in technical communication have developed in North America as a field of scholarship (Freedman, 2001). Miller described genre as typified rhetorical actions in recurrent situations by the individuals. It opened a new prospect that a genre is a rhetorical means for mediating between individuals and social contexts from which situations arose.

Charles Bazerman showed that genres interact with individuals’ actions and social contexts. He elucidated that a famous academic journal, *Physical Review*, accommodates research activities of individuals in Isaac Newton’s times and social forces shaping the development of science in that era (Bazerman, 1988). He also explored genres such as newspapers, letters, and patents as how the language of Edison and his colleagues supported his successful business when the electric light and power industry was growing (Bazerman, 1999).

David Russell pointed out a phenomenological/sociological view of genre that mediated social actions in activity systems. He studied how online multimedia simulations mediated engineers’ communicative activities within and between complex

organizations (Russell, 2010). Graham Smart (2007) studied how individuals in an organization communicated with the public through written or oral genres. He interviewed employees of the Bank of Canada and investigated how monetary policies of the national bank interacted with the national economy system.

Nonetheless, not much attention has been paid to directly instantiate a dynamic nature of genre from the social perspective of how the genre mediates between individuals' social actions and ideological goals of the community they belong to by controlling the rhetorical situation of the genre.

### **Aristotle's Rhetorical Triangle and Gorrell's Venn Diagram**

How to write patent applications has been traditionally developed in field of legal writing because patent attorneys are asked to write and file them in the patent office. They have to consider terminology set up by case law and the guidelines set up by examiners in the patent office. For this reason, there has been a stream of discourse in legal circles about patent applications. However, patent applications need to be seen from different angle—in a larger sense, as a genre of professional writing.

Rhetorical situations of the genre will be discussed based on fundamental theoretical frameworks in the field of professional writing and rhetoric: Aristotle's rhetorical triangle and Gorrell's Venn diagram. The great philosopher Aristotle's three modes of persuasion (Aristotle, 2010) are "logos" (appeal to reason, text), "pathos" (appeal to emotion, audience), and "ethos" (appeal to character, rhetor), which give us a fundamental framework to model the rhetorical situation of the genre, as shown in Figure 2.

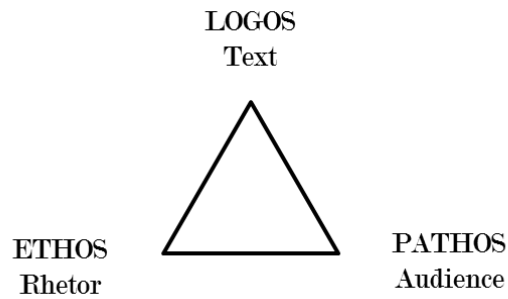


Figure 2 Aristotle's rhetorical triangle

Gorrell's model (1997) is another useful device to discuss the rhetorical situation of writing because it presents a different perspective from the three persuasion modes of Aristotle's rhetorical triangle. This model emphasizes dynamic features of the rhetorical situation and introduces the concept of "exigency" and "constraints," as shown in Figure 3.

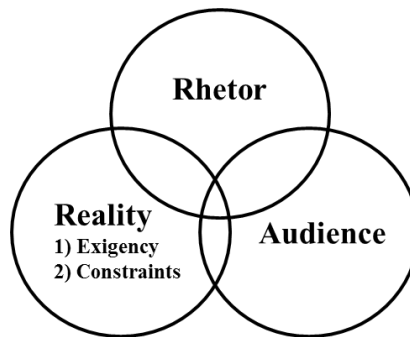


Figure 3 A Venn diagram of rhetorical situation

## Activity System and Genre System

Vygotsky (1978), believing that a human individual never reacts directly to environment, suggested a new theoretical concept that cultural means, tools, and signs mediate the relationship between human agents and objects in the environment. This approach provided the first-generation model of an activity system composed of three entities: “subjects,” “objectives,” and the “mediational means” between them, accommodating diverse Vygotskian theories that interpret human actions in the sociocultural environment.

Engeström (1987) developed this model by adding “community” mediating between subject and object, “rules” mediating between subject and community, and “division of labor” mediating between object and community. Figure 4 illustrates an activity system model including all of the entities mentioned above.

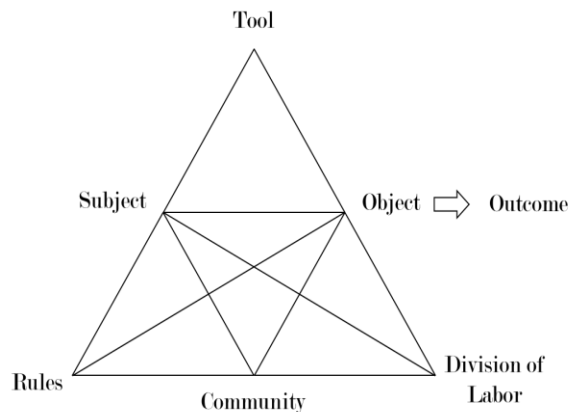


Figure 4 Activity system designed by Engeström

Subjects are the individuals, working individually or in groups, who participate in the activity. Mediational means are the material or semiotic tools that enable the subjects to accomplish the outcome. The object/motive is the focus of actions that the subjects apply. Rules/norms refer to “the explicit and implicit regulations.” Community comprises “multiple individuals or subgroups who share the same object and who construct themselves as distinct from other communities.” Division of labor refers to the “horizontal division of tasks between the members of the community and to the vertical division of power and status.”

An activity is a human actions system whereby a subject works on an object to obtain a desired outcome using tools, which are either external or internal. David Russell (1997) illustrated an activity system as “any ongoing, object-directed, historically conditioned, dialectically structured, tool-mediated human interaction.” He added that context becomes “an ongoing, dynamic accomplishment of people acting together with shared tools, including—most powerfully—writing.”

Figure 5 illustrates multiple genre sets and the genre system that enables subjects to accomplish their objective within an activity system (Bawarshi, 2010). This shows the uptake relations between genres within a genre set and between genre sets within a genre system. The notion of genres extends to the concept of genre set and genre system. The genre set, first presented in Devitt’s analysis of tax accountants’ work (1991), was represented by Bazerman (1995) as “only the work of one side of a multiple person in interaction. The tax accountants’ letters usually refer to the tax code, the rulings of the tax department in this case, and the client’s information.” On the other hand, the genre

system was described as “the full set of genres that instantiate the participation of all the parties—the full file of letters from and to the client, from and to the government, from and to the accountant.”

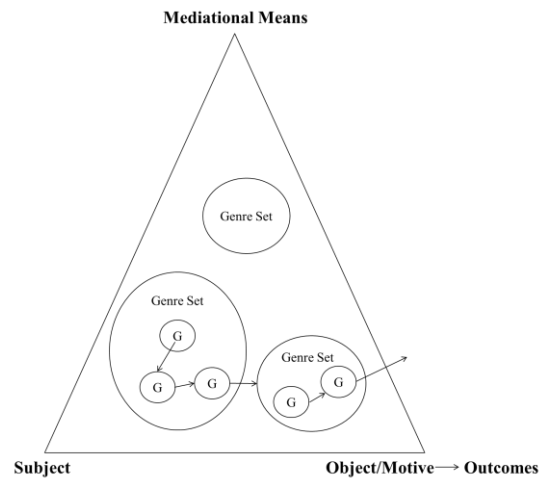


Figure 5 Genre sets within a genre system within an activity system

## **CHAPTER THREE: THE GENRE OF PATENT APPLICATIONS MEDIATING BETWEEN SOCIAL ACTIONS AND IDEOLOGICAL GOALS OF THE UNITED STATES AT THE TIME THE U. S. PATENT SYSTEM WAS ESTABLISHED**

### **SECTION ONE: SOCIAL ACTIONS OF KEY PLAYERS WHO CREATED THE U.S. PATENT SYSTEM**

#### **John Fitch**

Individual inventors played an important role in the early years of the United States when the patent system was established. In particular, some key players were inventors who devised apparatus using the steam engine. After James Watt invented the steam engine in England, the steam-engine boat, or so-called steamboat, became a popular theme of invention in the United States. Steamboats could carry people and freights rapidly over inland rivers and possibly even upstream. Steamboats became a driving force of economic growth in the newborn United States.

River transportation by the steamboats became much cheaper than land transportation by wagons: over 300% cheaper for upstream travel and over 2,500% for downstream travel during the period from 1784 to 1820 (North, 1983). Freight rates declined from \$1.00 to 32 cents over the same period (Haites, 1975). The new technology created new jobs in shipbuilding, maintenance, shipyards, customer service, and so on. Inland waterway transportation by steamboats led the national economy until railroad transportation took their place.

Robert Fulton was a well-known steamboat inventor who is often considered the person who invented the steamboat. In 1807, his steamboat *Clermont* first sailed from Manhattan to Albany with an average speed of about 4 miles per hour. By 1814, he offered regular steamboat and freight service between New Orleans, Louisiana, and Natchez, Mississippi (Sale, 2001). His fame, however, came from his commercial success in his steamboat business. There was an earlier-generation steamboat inventor named John Fitch who helped create a constitutional clause about inventors' rights, which was the origin of the U.S. patent system.

Fitch invented a steamboat propelled by two sets of automatic canoe-like paddles. In 1786, he traveled around to appeal to state legislatures for patents because there was no federal patent system. The American Philosophical Society in Philadelphia gave him a lukewarm response, and the Virginia Assembly rejected Fitch's petition despite James Madison's support. Only the New Jersey Assembly granted his petition for a patent.

In the meantime, Fitch successfully built a full-sized working vessel. It was a victory when the British strictly protected steam-engine technology from the former colonies due to military security. On August 22, 1787, he publicly unveiled and demonstrated the working steamboat, moving upriver at 3 miles per hour, to delegates gathered for the Constitutional Convention in Philadelphia. According to Fitch's notes, few convention members failed to show up for his demonstration (Prager, 1976).

On September 5, 1787, a constitutional clause was introduced during the Constitutional Convention allowing authors and inventors a certain exclusive right to their respective writings and discoveries. The clause was drafted by Virginia delegate

James Madison and South Carolina governor Charles Pinckney. Madison's article in the *Federalist* (Madison, 1788) shows how he understood the inventor's right:

The utility of this power will scarcely be questioned. The copy right of authors has been solemnly adjudged in Great Britain to be a right at common law. The right to useful inventions seems with equal reason to belong to the inventors. The public good fully coincides in both cases, with the claims of individuals. The States cannot separately make effectual provision for either of the cases, and most of them have anticipated the decision of this point, by laws passed at the instance of Congress.

According to the article, Madison aligned the inventor's right with the author's right and believed they fully coincide with the public good.

It is hard to know how much John Fitch's demonstration influenced the Convention delegates to come to the table and approve the inventor's rights clause without any recorded dispute. However, it seems rather certain that many delegates already recognized the positive effects of technological innovation (Edward, 1994) on the national economy from the Industrial Revolution and that Fitch's demonstration was a meaningful spark. All in all, Fitch opened the door to a federal patent system by stimulating the establishment of inventor's rights clause. President George Washington established the first patent act in 1790, when the genre of patent applications was created. Fitch's actions were typified as a genre, particularly the submission of a working miniature model of his invention as an important part of the patent application.

### **Oliver Evans**

Oliver Evans is another inventor who played an influential role in the process of shaping the U.S. patent system. He was a new breed of inventors who wanted to raise revenue by allowing others to make and use his patented technology in return for

monetary compensation—now called licensing fees or royalties—rather than by manufacturing and selling products.

Evans invented a steam-engine milling process using bucket elevators, conveyor belts, and Archimedean screws, for which he received a U.S. patent in 1790. He claimed infringement in the federal court of Pennsylvania and requested payment of royalties, but the millers resisted. The court decided that Evans's patent was invalid. He then petitioned Congress to seek relief from the court's decision. In 1808, Congress enacted legislation that authorized reissue of Evans's patent. In 1815, the U.S. Supreme Court concluded that the millers had to pay a licensing fee to continue using the technology after he was granted the new patent. On the one hand, it was a victory for an independent inventor who extensively sought his exclusive right. On the other hand, it was an alarming result in that the patent system could obstruct distribution of knowledge and economic growth by requiring a price for low-level innovations as a consequence.

Jefferson crossed paths with Evans at this point. He passionately expressed his objection to Evans's patent because he resisted the enforcement of patents granted for low standards of innovation. Evans's patents included claims so broad in scope that they simply combined elements that had existed for a long time. Jefferson compared the situation with the invention of plowshare (Jefferson, 1984). A patent for manufacturing a plowshare out of cast iron should not cover the manufacture of a plowshare out of wrought iron. Jefferson intended that if broadly claimed patents are allowed—for example, “iron plowshare” for “cast iron”—then additional innovation to the wrought-iron plowshare would be obstructed due to the lack of motivation to invent.

Anyhow, Jefferson offered a good opportunity to ponder the ideological issues of the patent system: to what scope and for what purpose should the government grant such a privilege? All in all, Evans's actions were the stimuli that expanded the horizon of the traditional notion of patent usage. His actions resulted in the creation of standards of patentability, such as novelty and nonobviousness over prior art. These standards guide inventors on how to prepare patent applications and examiners on how to grant patents from the applications.

### **Tench Coxe**

A young merchant named Tench Coxe, who served as secretary of the Annapolis convention the year before the Constitutional Convention, played another key role in the legislation of the constitutional clause about inventor's rights. He gathered economic data, stressing the rise of machine-based technology, and argued that Congress should help to raise American manufacturing in the face of European competition. On May 11, 1787, as the delegate headed to Philadelphia, he addressed the Society for Political Enquiries at Benjamin Franklin's home: "An enquiry into the principles, on which a commercial system for the United States of America should be founded ... and some political observations connected with the subject" (Marx, 1964). James Madison was one of the members who were caught up in Coxe's vision.

On August 9, as the Constitutional Convention was in full swing, Coxe addressed the Pennsylvania Society for the Encouragement of Manufactures and the Useful Arts, stating that the United States needed "methods of encouraging manufactories ... premiums for useful inventions and improvements" and should assist "the efforts of

industry, and hold out the noble incentive of honorable distinction to merit and genius” (Coxe, 1965).

He emphasized how technological innovation in machinery could liberate farmers and citizens by increasing the efficiency of manual labor. His argument encompassed both sides of the political spectrum, like industrialist Hamilton as well as agrarian Jefferson. He asserted that innovations would lead America to glory that nobody could predict (Marx, 1964):

Steam mills have not yet been adopted in America, but we shall probably see them after a short time...combinations of machines with fire and water have already accomplished much more than was formerly expected from them by the most visionary enthusiast.

In the end, Coxe persuaded the framers of the Constitution, including James Madison, who tabled the constitutional clause and created the inventor’s right. The clause includes the words “to promote the progress of science and useful arts,” which elucidates why government should receive petitions and grant exclusive rights to inventors and authors. Coxe’s utterances can be regarded as perlocutionary speech acts that induced, as a result, actual effects: the creation of inventor’s rights and the genre of patent applications.

### **Thomas Jefferson**

Thomas Jefferson played an important role, particularly as the U.S. patent system was established. After the constitutional clause was legislated, President George Washington, on April 10, 1790, signed the bill that became the foundation of the modern American patent system. With this first Patent Act, Thomas Jefferson was appointed as the first patent examiner until the second Patent Act in 1793, when he held the position of

Secretary of State. He reviewed patent petitions and passed them to the Secretary of War for a peer review. Jefferson then obtained signatures from the Attorney General and finally from President Washington (Matsuura, 2008).

One of Jefferson's exemplary actions occurred during a state affair about a shipboard seawater desalination system. Jacob Isaacks invented the system and approached the U.S. Congress about selling his idea to the U.S. Navy. In 1791, Congress asked Jefferson to evaluate the system and to recommend a necessary course of action. Jefferson composed a review panel consisting of two professional scientists and asked Isaacks to demonstrate the desalination system in front of the review panel.

Isaacks's system used a certain mixture of wood to make a fire for distilling seawater into drinkable water. It was proven more or less effective. However, the panel rejected purchasing the plans for his system and instead recommended public disclosure to develop optimum conditions for the method. Isaacks was displeased with the recommendation because it meant his intellectual propriety would be placed into the public domain without compensation. On the other hand, Jefferson thought that Isaacks could be rewarded with an exclusive right to make and sell products, not by selling the idea itself.

Jefferson was often placed in a position to consider how the patent system should work. His experience with the desalination system seemed to aggravate his thoughts about public benefits of the patent system. He was the single most influential person who established how to prepare patent applications and how to grant them in the early years of the nation. However, he was not much in favor of endowing extended rights to inventors

and was always critical of the patent system's status quo considering the public domain, which ultimately led to the harmonious development of the system.

## **SECTION TWO: THE KEY PLAYERS'S IDEOLOGICAL GOALS**

### **Ideology of Intellectual Property Rights**

Justification of intellectual property (IP) rights can be theorized based on to whom in the IP system the rights are granted (Patterson, 1991). The following is a list of five possible theories of IP rights (Mitchell, 2005):

- (1) Utilitarian/Instrumentalist: The IP system has no intrinsic philosophical interest. It is just tactics to increase the social utility of the whole system.
- (2) Author-Centered: The IP system exists to protect the rights of authors which could be justified on either a consequentialists' incentive theory or natural right framework.
- (3) Publisher-Centered: The IP system exists to enable entrepreneurs to invest in the production of IP, assuring the investment will not be expropriated.
- (4) User-Centered: The IP system exists to promote the greatest possible access to works by users.
- (5) Pluralistic Theory: Authors, users, and publishers all have rights simultaneously in an environment of balancing interests rather than zero-sum conflict.

Seen from the above ideological framework, the trend of intellectual property can be explained. For example, nowadays there are new but controversial forms of patents in the fields of genetic engineering, medical procedures, and business models. Proponents may argue that these patents are justifiable to encourage authors (inventors) standing at the edges of state-of-the-art technology. However, critics may argue that these new grants

tend to undermine IP justification based on the social contract ethic because they shift more power away from users.

### **Ideological Goals of Key Players at the Dawn of the U.S. Patent System**

When the patent system was first established in the United States, author-centered justification was well accepted by leading inventors and politicians. Particularly, it was a time when “incentive theory” was crystallized. Jessica Litman (1990) described the reasoning behind the theory:

The cost of creating works is often high, the cost of reproducing them is low, and once created, the works may be reproduced rapaciously without depleting the original. In a world in which such reproduction is not restrained, an author will be unable to recover the costs of creating the work and will therefore forgo the creative endeavor in favor of something more remunerative...Thus, the copyright system encourages authors to create and encourage distributors to purchase rights in author's creation so that the distributors may sell these creations to the rest of us.

This approach says that the social contract ethic justifies IP rights. It is believed that the state created IP rights in the interest of society as a whole because authors were granted privileges in return for promising free use of inventions or writings after the expiration of a socially contracted time period. The privileges are incentives that motivate inventors to squeeze ideas out of their brains and report them to the state. In this process, science and the useful arts will progress. This philosophy is reflected in the Constitution's Article I, Section 8(8), which James Madison proposed at the Constitutional Convention in 1787 (Larson and Winship, 2005):

The Congress shall have power...To promote the progress of science and useful arts by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.

On the other hand, the publisher-centered theory seems inapplicable because the exclusive rights are given to natural persons—authors or inventors—rather than publishers who are economic entities of people and capital. Moreover, the utilitarian theory also seems unavailable. This approach, called an antitheory, is based on the belief that intellectual property rights are a tactical fiction to improve social utility. In some points of view, the utilitarian approach seems to be applicable because the patent system was established for “the greatest good for the greatest number.” However, it is difficult to explain why society should allow exclusive rights to “authors and inventors,” leaving alternative ways behind for the progress of science and useful arts. The inventor’s rights clause was not legislated just because no other effective way was found to advance science and useful arts.

In the late 18th century, leaders in the United States directly and indirectly experienced the impact of the Industrial Revolution from England. They realized that innovations like the steam engine could lead the nation to economic prosperity and military power. Inventors like John Fitch and Oliver Evans had dreamed of showing off their talents and earning their fortunes by creating a steamboat or milling machine. Fortunately, politicians at the time recognized that the ambitions of talented men could be guided to benefit society if they were motivated to create something.

Some framers of the United States were enthusiastic inventors themselves. Benjamin Franklin was arguably one of the first major American inventors. He flew a kite with a key attached to its string and invented the lightening rod. He also invented bifocal glasses and the medical catheter (Issacson, 2004). Thomas Jefferson, like

Franklin, was a polymath. Jefferson invented many household items, such as the Great Clock at Monticello that has faces on both sides of a wall, the portable desk he used when writing the Declaration of Independence, the polygraph, moldboard plow, and so on.

Tench Coxe was a political figure who was eloquent about the importance of legislating legal devices to motivate inventors. Framers of the country also must have witnessed the impact of the Industrial Revolution and assumed that a strong nation could be built based on technological innovations. Interestingly, even George Washington, a military man and politician, cared a great deal about patents. It is recorded that he intervened in a patent-ownership dispute between two men, John Fitch and James Rumsey. He considered who really deserved the patent, as revealed in a letter to Thomas Johnson (Washington, 1787). A single patent was something that Washington felt deserved his concern because patents were relatively rare, so that single patent was closely tied to social values.

Mr. Rumsey. . .at that time applying to the Assembly for an exclusive Act . . . spoke of the effect of Steam and . . . its application for the purpose of inland Navigation; but I did not conceive . . . that it was suggested as part of his original plan . . . It is proper however for me to add, that sometime after this Mr. Fitch called upon me on his way to Richmond and explaining his scheme, wanted a letter from me, introductory of it to the Assembly of this State the giving of which I declined; and went so [far] as to inform him that tho' I was bound not to disclose the principles of Mr. Rumsey's discovery I would venture to assure him, that the thought of applying steam for the purpose he mentioned was not original but had been mentioned to me by Mr. Rumsey. . .

The alternative justification for intellectual property rights is called the natural rights theory (Mitchell, 2005). This theory differs from the incentive theory with regard to the question of the origin of IP rights: the state simply recognizes IP rights given to

people rather than creating them for the common good. From this perspective, the product created by an author's intellectual labor should be his own property, much like a piece of furniture he might build.

John Locke was undoubtedly one of the prominent advocates who believed that property rights are natural rights. He emphasized that every individual has a right to the fruits of his labor, whether tangible or intangible. Locke believed that governments are instituted by people's consent to secure their own natural rights of life, liberty, or possession (Locke, 2005):

Reason, which is that law [of nature], teaches all mankind who will be consult it that being all equal and independent, no one ought to harm another in his life, liberty or possessions

However, although the majority of framers of the United States supported John Locke's social contract theory, they were unlikely to agree with the reasoning that intellectual property rights are a type of possession and therefore a natural right.

Jefferson thought that "ideas" incorporated in inventions could not be stably owned as a natural right but were a social right granted and controlled by governmental power and put in trust. This view can be seen in his 1813 letter to Isaac McPherson about Oliver Evans's invention (Jefferson, 2011).

By a universal law, indeed, whatever, whether fixed or movable, belongs to all men equally and in common, is the property for the moment of him who occupies it, but when he relinquishes the occupation, the property goes with it. Stable ownership is the gift of social law, and is given late in the progress of society. It would be curious then, if an idea, the fugitive fermentation of an individual brain, could, of natural right, be claimed in exclusive and stable property.

Jefferson emphasized that ownership rights to something might be naturally given to all men while they possess it, but those rights go away when he relinquishes ownership, so that stable ownership came from social admission. For this reason, Jefferson wondered if the idea that since it is impossible to exclusively possess something that comes from someone's brain, could it be an object of natural rights?

On top of that, Jefferson's thoughts reached to user-centered justification of intellectual property rights. Jefferson was an active inventor; however, he never tried to obtain patents for what he invented. He believed that useful inventions should be allowed for the good of the people. Throughout his life, he emphasized the public necessity of the patent system, considering the importance of distribution of knowledge to enlighten people as well as to develop the country. This is shown in a letter to Isaac McPherson (Jefferson, 2011):

He, who receives an idea from me, receives instruction himself without lessening mine; as he who lights his taper at mine, receives light without darkening me. That ideas should freely spread from one to another over the globe, for the moral and mutual instruction of man, and improvement of his condition, seems to have been peculiarly and benevolently designed by nature . . . Inventions then cannot, in nature, be a subject of property. Society may give an exclusive right to the profits arising from them, as an encouragement to men to pursue ideas which may produce utility, but this may or may not be done, according to the will and convenience of the society, without claim or complaint from anybody . . . it may be observed that the nations which refuse monopolies of invention, are as fruitful as England in new and useful devices.

Jefferson worried about the negative effects of inventor's rights rising from granting individuals a monopoly on ideas and from obstructing knowledge distribution. Such discretion is consistently found in another part of the same letter (Jefferson, 2011):

Considering the exclusive right to invention as given not of natural right, but for the benefit of society, I know well the difficulty of drawing a line between the things which are worth to the public the embarrassment of an exclusive patent, and those which are not. As a member of the patent board for several years, while the law authorized a board to grant or refuse patents, I saw with what slow progress a system of general rules could be matured.

All in all, key players—John Fitch, Oliver Evans, Tench Coxe, and Thomas Jefferson—at the dawn of the U.S. patent system were not on the same page with their ideological goals. Inventors, motivated by self-interest, urged the establishment of legal protections for their ideas. Social leaders agreed on permitting inventor's rights because they believed progress in science and useful arts would help to grow the national economy and military power. However, leaders such as Thomas Jefferson were alarmed about excessive endorsement of exclusive inventor's rights, believing it would obstruct knowledge distribution, particularly at the time of the Enlightenment, in the newborn country. Due to their efforts to meet their ideological goals, the U.S. patent system was established and in its early stage took significant steps toward the modern system.

### **SECTION THREE: THE GENRE PATENT APPLICATION RHETORICALLY SITUATED IN THE EARLY U.S. PATENT SYSTEM**

This section investigates the ways in which the genre of patent applications was rhetorically situated in the patent system in early days of the United States. The situation of the genre is analyzed through elements of theoretical rhetorical frameworks: Aristotle's rhetorical triangle, Gorrell's Venn diagram, the activity system, and the genre system.

### **Aristotle's Rhetorical Triangle and Gorrell's Venn Diagram**

Rhetors were inventors who filed patent applications to obtain patent rights. In the beginning, patent applications were a form of petition letter. However, after the Patent Act of 1790, the form changed to a brief explanatory description, a miniature working model, and a drawing. Miniature working models were to be submitted if the inventions were proper to build in nature. For example, inventions of machines were proper, whereas chemical inventions were not.

The audience for patent applications had authority to permit exclusive privileges. The audience was changed from the royal governors in colonial days to patent examiners in early days of the United States. The first examiners were cabinet members, but professional examiners were hired after the Patent Act of 1836. The main requirement was to be the first inventor, which was typically proven by demonstrating the invention. Inventors would prove they were the first to invent something by demonstrating their inventions to other people. Constraints included the burden to prove who was the first inventor, a burden that was often dramatized later during court disputes.

To diagram the change of the rhetorical situation, a hybrid type of Aristotle's rhetorical triangle and Gorrell's Venn diagram is shown in Figure 6. Each element of the fundamental framework is depicted.

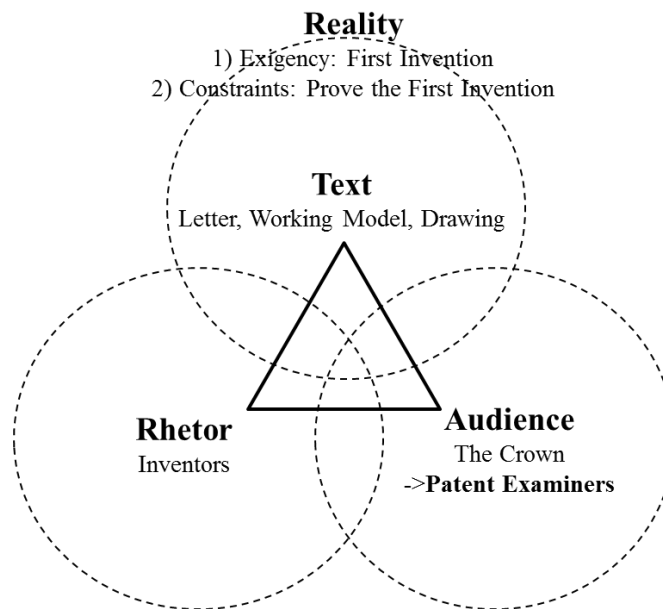


Figure 6 Aristotle's rhetorical triangle and Gorrell's Venn diagram showing the rhetorical situation of patent applications at the time the U.S. patent system was established

### 1. Rhetor: Inventors

In England, long before the 17th century, the patent system had been applied as a royal prerogative. The king or queen allowed some group of people the exclusive right to make and sell particular goods or services. However, this practice was abused and became a disaster. Patents were granted for almost all products and services, even some without meaningful economic value. Patentees hired private police to harass competitors. Licenses or monopolies increased to such an unreasonable level that King James I finally enacted the Statue of Monopolies in 1624, which repealed all monopolies except letter patents (Mitchell, 2005). The statue restricted monopoly rights to the first and true inventor, with new letter patents for fourteen years. This was the beginning of

inventorship, which became a foundation of the constitutional clause about inventor's rights in the United States.

In the early days of the U.S. patent system, one who created rhetoric for an audience was an independent inventor. At this time, inventors were natural persons who applied patent applications and owned patented rights. For the reason, there was no reason to discriminate between inventors and applicants or patent owners.

It was not until the second Industrial Revolution in the latter half of the 19th century, also known as also the Technical Revolution, that capital-intensive and technologically creative business enterprises emerged within the industries of electricity, railroad, steel, petroleum, and automobiles. As mass production systems increased, invention in connection with the duties under employment rapidly replaced independent inventors. It was probably at this point where inventors became differentiated from applicants or owners.

## **2. Audience: From the Crown to Patent Examiners**

In early days of the U.S. patent system, exclusive rights were given to inventors as incentives to promote the progress of science and useful arts. The purpose of patent applications is to propose and receive patent grants from authority powers. For this reason, the audience for patent applications is someone who examines the application and determines the permissibility of the patent.

When the constitutional clause was passed, inventors' petitions were read to the House of Representatives. In 1789, an inventor named John Church sought protection for

his invention, which was composed of two magnetic points and a needle to indicate direction. The House of Representatives appointed a committee to look into the matter.

The first Patent Act was enacted in 1790. Inventors could file petitions for patents to the Patent Board, which included the Secretary of State, the Secretary of War, and the Attorney General (Matsuura, 2008); the main reviewer was Secretary of State Thomas Jefferson. He examined the petitions. However, the examination of patent petitions was a hard job that required too much time and special knowledge for just a few busy cabinet members. As the number of patent petitions increased, the Patent Board came to realize that the examination system was no longer effective (Malone, 1951).

On the other hand, patent applications were not written, unlike in the modern patent system. “Letters patents” were simple forms of written order issued by a monarch or president to prove patented rights. Although certificates of patents were publicized, this was done so inventors could stand up to a third party who may be unaware of the patented rights. Therefore, it is difficult to say that the public, specifically a person having ordinary skill in the art (PHOSITA), was the audience for patent applications.

### **3. Text: Letter, Working Model, Drawing**

The patent system in the U.S. colonies replaced the English custom during this period of transition. There were two sources of authority: letters patent granted in England and granted by royal governors of each colonial state. America primarily depended on agriculture at the time of independence. Manufactured goods were generally restricted to local consumption. Framers of the Constitution felt that local grants of patents should be extended to a federal level so as to prevent duplication of grants and

improve interstate commerce. The U.S. patent system officially started anew with the birth of the U.S. Constitution.

In the new patent system, inventors were required to submit a miniature working model of the invention with a brief explanatory description or drawing. This was one of the most interesting features of the U.S. patent system, which continued until 1880. Petitions in letter asking for patents were not required to include a detailed written description of the invention. For inventors, the miniature working model was an easier way to show how the inventions were structured and how they worked compared to creating a detailed written description, like the patent applications written by patent attorneys in modern times that use professional terms and drawings (Riordan, 2002). The miniature models could not be larger than 12-by-12-by-12 inches (Janssen, 2010) and were kept in the Patent Office after examination.

#### **4. Exigency and Constraints: First Invention, Proving the First Invention**

Patent applications have been “typified in a recurrent situation” as a genre (Miller, 1984) in which inventors open discourse toward examiners motivated by an exigency to file inventions and protect them from being copied by others. However, historically it was the first inventors who were entitled to the inventor’s right in the constitutional clause rather than the first filers of patent applications. William Rawle (1829) left a record clarifying that the first inventors were entitled to the benefit if they independently conceived of the invention and made it public.

At common law, it seems to have been a question whether the inventor of any new art or improvement had such a special property in it, as to entitle him to pursue another who made use of it after the inventor had made it public. But there was no doubt that if another

person had fallen on the same invention, without knowledge of the first, he would be entitled to the benefit of his own talents. It has however been deemed in many countries politic and wise, to secure to the first inventor a reward for the time and study employed in such pursuits.

The battle between steamboat inventors John Fitch and James Rumsey over patent ownership seems to suggest clearly what were the exigencies or constraints to obtain patent rights. Fitch insisted that he was inspired to invent the steamboat in 1785. He began fundraising to build it in the summer of 1785 and began building in the winter of that year. John Fitch demonstrated an operational steamboat on the Delaware River in 1787 to the framers of the Constitution. On the other hand, James Rumsey who had also built a steamboat independently, asserted to have originally invented the steamboat in 1784. Rumsey's first public demonstration was in December 1787 in Shepherdstown, three months after Fitch's demonstration.

Since the U.S. Patent Office had not yet been established, the two men battled for many years through the newspapers and courts. Fitch won the legal battle in the courts of Delaware, New Jersey, New York, Pennsylvania, and Virginia, whereas tycoons such as George Washington, Thomas Jefferson, and Benjamin Franklin supported Rumsey. Rumsey had maintained a relationship with George Washington about his steamboat projects since 1784.

In the end, both received patents for the steamboat issued on the same day in 1791 but for different aspects of technology. However, Fitch failed to get additional financial support because he could not guarantee business that completely excluded other types of steamboats. Rumsey was also disappointed because he thought Fitch unfairly got too

broad of a monopoly even though Rumsey's steamboat was completely his own and unlike Fitch's.

Unfortunately, both men lost too much money and time on battles. To make matters worse, Rumsey died soon after the battle, and Fitch failed to make a commercially successful steamboat. However, ironically enough, the battle left a great legacy in the history of the U.S. patent system: the creation of the first patent examining system through the Patent Act of 1790.

This anecdote teaches us two important things: the importance of exigency of the first invention, and the constraints to prove the first invention. At the time of Fitch and Rumsey, it was important to demonstrate a working model to the public so that people could witness their first invention. It was the most useful and practical way to prove the first invention, which has been called "reduced to practice." Up until then, it had been a conundrum to discriminate who was the first inventor. Nonetheless, the United States has kept the first-to-invention policy over two hundred years until the Leahy-Smith America Invents Act (AIA) was signed into law in 2011.

#### **Activity System and Genre System: Author-Centered Ideology (Incentive Theory)**

The activity system came from the activity theory that analyzes the cultural and technical aspects of human actions (Bertelsen and Bødker, 2003), rejecting the isolated individual as a unit of analysis. Actions are created through tensions and contradictions within elements of the activity system that bridges the gap between individual subjects and social reality by the mediation. In this study, an activity system is modeled to

understand interactions between human actions and ideological goals mediated by the genre.

Figure 7 shows the activity system at the time when the U.S. patent system was established. Here, “subjects” correspond to key players engaged in social actions. “Objects” correspond to motives of their actions: the patent system of the newborn nation originated from the constitutional clause about inventor’s rights. “Outcome” corresponds to the ideological goal of the community that key players aimed for. At the time, the incentive theory was the mainstream ideology of the patent system: granting privileges to inventors as incentives to promote progress in science and national power. “Tools” correspond to inventions mediating between the subjects and the objects: what subjects utilize to accomplish the activity. Social actors brought the patent system to drive inventors’ desire and creativity to social benefits by encouraging their inventing activity.

“Rules” correspond to the constitutional clause about inventors’ rights and the early Patent Acts of 1790, 1793, and 1836 that subjects—social actors—adhered to while engaging in the activity. “Community” corresponds to the newborn nation of the United States of America, where once before there were American colonies, where subjects’ knowledge, interests, stakes, and goals shaped the activity. “Division of labor” corresponds to inventors, patent examiners (from the administrative cabinet members to professional examiners), judges, and legislators (from the framers of the United States to assemblies), which is how the labor is divided among participants in the activity. Judges presided over the litigations and created case laws to shape the patent system

independently, which is a unique power different from that of legislators or administrators.

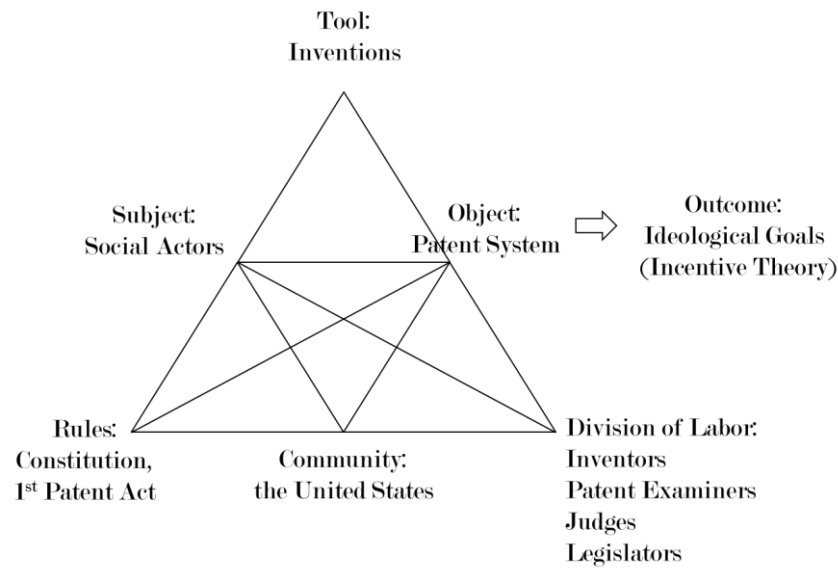


Figure 7 Activity system at the time the U. S. patent system was established

Genre systems can be drawn by cutting out any inner triangle composed of three vertices. Figure 8 is a schematic diagram of a genre system including genre sets and genres inside of the triangle. The genre system shows relationships among entities in each vertex. For example, subjects correspond to participants in the division of labor, such as inventors, patent examiners, judges, and legislators. The mediational means between the subjects and object “patent system” correspond to the constitutional clause and the first Patent Act. Namely, “social actors” created “the patent system” to protect “inventions” in

a community, “the United States.” Then subjects in “division of labor” cooperate and support “the patent system” under the rules of “Constitution and the first Patent Act.”

There is a plurality of genre sets classifiable according to the division of labor of the activity system: “patent applications” used by inventors, a variety of correspondences from the Patent Office, judicial documents from courts, and conference documents from legislators. Genre sets include a variety of genres. The foremost genre set is the “patent application,” which is the focus of this study. However, strictly speaking, “patent application” is an ambiguous term that indicates a genre set including all forms necessary to file patent applications—a petition letter, a miniature working model, and inventors’ oath/declarations—as well as a genre with a form of document meaning the written description of the invention. The term “patent application” is used in either usage depending on the circumstance.

Genres are related to each other not only inside a genre set but also between genres from different genre sets. For example, “miniature working model” as a genre inside the genre set “patent application” induces a genre called “notice of examination” from the U.S. patent office inside another genre set. Sometimes, a genre set as a whole affects a genre inside another genre set. For example, all genres inside the genre set “judicial document” from a certain lawsuit can affect how to write the “written description” genre inside the genre set “patent application.” Sometimes, a genre inside the genre system is related to a genre outside the genre system. For example, a court judgment is related to an article in a newspaper, which is not inside of this genre system.

Ultimately, there are many possible relationships between genres, between a genre and genre set, and between genre sets.

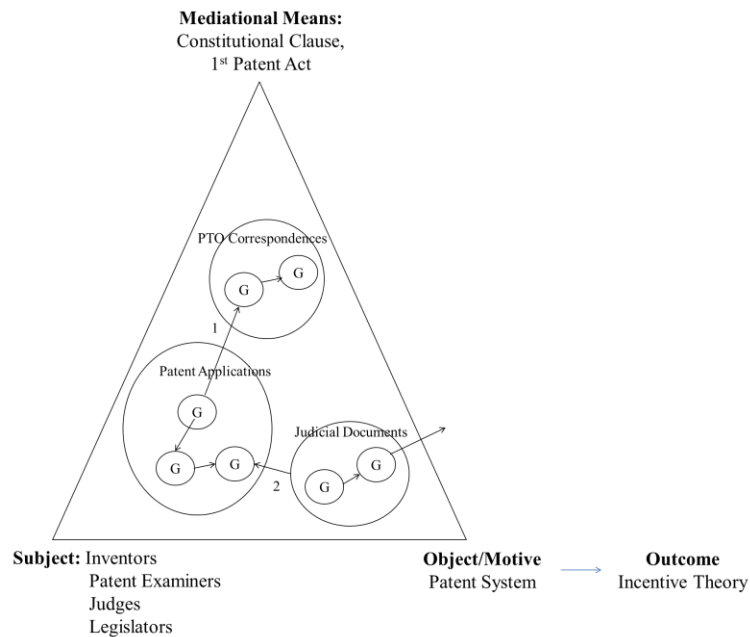


Figure 8 Genre sets within a genre system within an activity system at the time the U.S. patent system was established

#### SECTION FOUR: IDEOLOGICAL GOALS OF THE COMMUNITY REFLECTED IN THE RHETORICAL SITUATION OF THE GENRE OF PATENT APPLICATIONS

In Chapter 1, to prove whether the hypothesis is universal irrespective of the time period, this study contemplated the relationship among a genre, social actions, and ideological goals by looking back the early days when the United States was created and

when the patent system was initially established. Previous sections discussed some precedent reasoning to verify a thematic hypothesis: a genre that mediates social actions and ideological goals of the United States.

The first section traced how some exemplary social actions of key players contributed to creation of the U.S. patent system embedded in the genre of patent applications. The second section studied how justification of the patent system can be classified and what ideological goals the social actors aimed for. The third section showed how the genre of patent applications was situated in the patent system and how they are explained through theoretical lenses such as Aristotle's and Gorrell's rhetorical situation models, an activity system model, and a genre system model.

This fourth section will describe how the ideological goals of key social actors are reflected in the rhetorical situation of the genre of patent applications. The effect will be analyzed and shown using theoretical models of rhetorical situations, activity systems, and genre systems. This section will eventually combine all reasoning from the previous four sections into one complete hypothesis: the genre of patent applications that mediates between social actions and ideological goals of the community.

### **Aristotle's Rhetorical Triangle and Gorrell's Venn diagram**

Ideological goals of social actions, the key players of which were introduced in the first section, had been reflected in the rhetorical situation of the genre of patent applications. Figure 9 shows a new description of Aristotle's rhetorical triangle and Gorrell's Venn diagram reflecting the changes in the rhetorical situation of patent applications. The time period is from colonial times in North America to after the U.S.

patent system was initially established. The social actors' ideological goals changed the rhetorical situation of patent applications from text and audience perspectives to rhetor, exigency, and constraints perspectives.

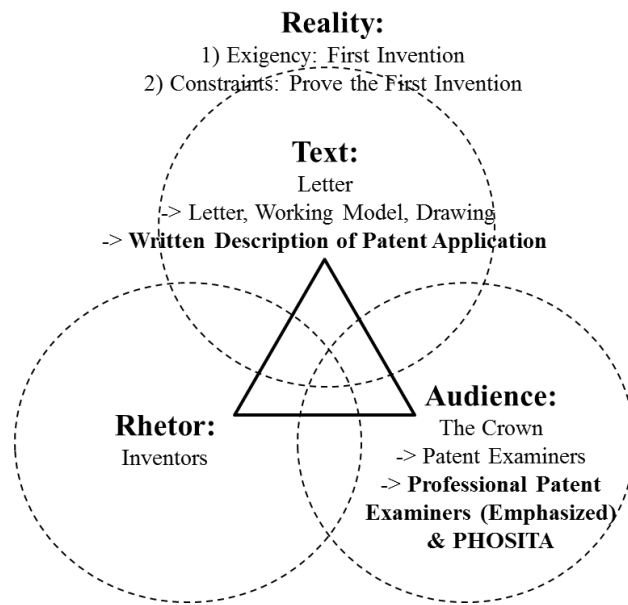


Figure 9 Change in the rhetorical situation of patent applications in reflection of the ideological goals of key players of social actions

The earliest form of patent applications in colonial America was a traditional petition letter to the crown or royal governors. After independence, the petition letter was still used until the constitutional clause about inventors' rights and the first patent bill were enacted. From 1790 to 1793, when the three cabinet members approved patents, inventors would submit applications as a brief description, a drawing, and a miniature

working model. According to Bazerman's study (1995), the earliest patent application dated from 1790 and was submitted by William Pollard. It consisted of "details of the spinning industry in Britain to establish the value of the machine," "difficulties in obtaining a model," and "a drawing." The brief description was likely a background of the invention appealing to its social value or impact rather than specifications showing its structure and operation. It seems the miniature working model could be waived if it was difficult to obtain in nature. Unfortunately, we cannot know more about this application because all patents and models from this period were destroyed in the 1836 Great Patent Office Fire.

It was not until 1813 that Jefferson asserted that patent applications must include written description that shows the invention's novelty over prior arts. By 1830, a few years before the Patent Office was established in 1836, litigation drastically increased due to the no-examination policy. As a result, patent applications were required to include a "formulaic opening identifying the putative inventor and a closing statement identifying the claim."

The Patent Act of 1836 was a monumental patent reform that established the U.S. Patent Office. Patent applications were officially required to "particularly specify and point out the part, improvement or combination, which he claims as his own invention or discovery." This change was an official result of Jefferson's efforts to intensify written information about inventions in patent applications.

The next year, the U.S. Patent Office demanded submission of two copies of drawings. In 1850, *Hotchkiss v. Greenwood* resulted in the next important step in the

history of written descriptions of patent applications. To be patentable, an invention must be only novel but also nonobvious from prior arts. Rockman (2004) introduced the key reasoning for being nonobvious:

Unless more ingenuity and skill.... than were possessed by an ordinary mechanic acquainted with the business, there was an absence of that degree of skill and ingenuity which constitute essential element of every invention.

The Patent Act of 1870 introduced a requirement that the written description should include the best mode requirement in patent applications, which is “a safeguard against the desire on the part of some people to obtain patent protection without making a full disclosure as required by the statute. The requirement does not permit inventors to disclose only what they know to be their second-best embodiment, while retaining the best for themselves (*In re Nelson*, 1960).” This change can be regarded as an emphasis on user-centered ideology considering readers rather than authors.

The audience of patent applications has changed dynamically, and it is one of the most important features on which to focus. In England, the king or queen granted their favorite people exclusive the privilege of making and selling articles domestically or of importing foreign articles as royal prerogatives. Therefore, it can be said that the audience for patent applications was the crown.

As mentioned in the third section, patent examiners became the main audience for patent applications. The president and a few U.S. cabinet members, including Thomas Jefferson, took over as patent examiners. They probably tried to replace the sovereignty of the crown, which granted patents. However, they soon realized that they could not hold that role due to the number of petitions poured onto their desks. For this reason, the

patent examining system stopped from 1793 to 1836. Congress passed the Patent Act of 1793, which allowed patent applications to be registered without examinations, and only judges in courts were given the burden of determining the validity of patents (Walterscheid, 1998). Accordingly, frivolous patents were issued and lawsuits were filed over time. It was eventually decided that this system could no longer function.

Annual records of U.S. patent applications and grants from 1790 to 1850 are shown in Figure 10 (USPTO, 2014). Only three patents were granted in 1790, which became 33 cases the next year and started to burden Secretary of State Thomas Jefferson. At the time of the Patent Act of 1836, when the two full-time professional patent examiners were hired, the annual number of registered patents reached 702 cases. A library was established to assist with examinations at this time. Trained examiners scrutinized each patent application and determined whether it deserved a patent in conformity to the laws and standards. Additionally, the new audience appeared as the U.S. patent system was established, which is the main point of the change related to the ideological goals and is described in the following section with activity system and genre system models.

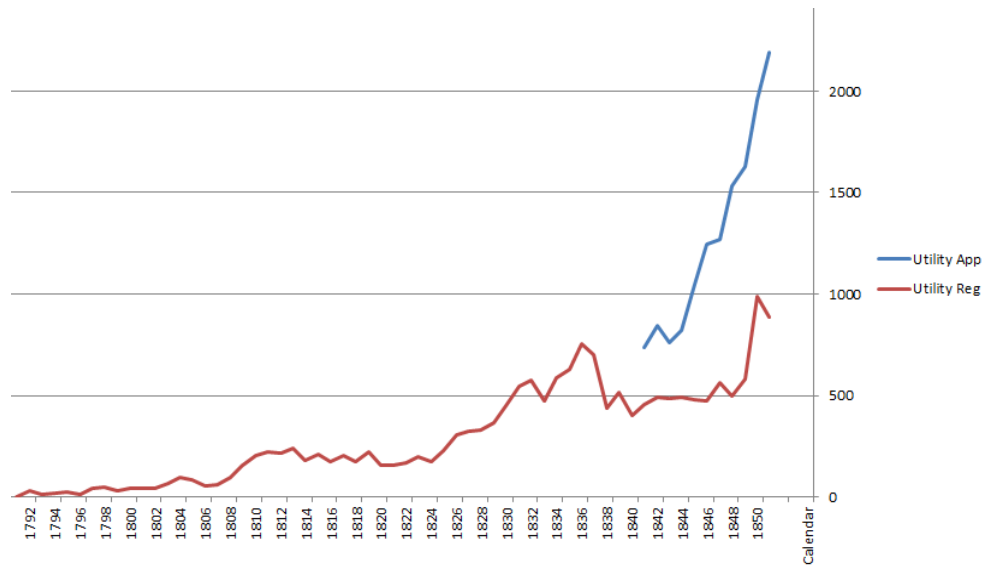


Figure 10 Annual records of U.S. patent applications and grants since 1790

### Activity System and Genre System

Bitzer and Vatz's argument is useful to explain how ideological goals of social actors changed the activity system as the U.S. patent system settled down. Bitzer (1968) stated that "discourse is called into existence by the given rhetorical situation formed by exigency," meaning that situation creates rhetoric. Vatz (1968) refuted Bitzer's theory, stating that "the rhetoric is antecedent, not subsequent, to a situation's impact," meaning that rhetoric creates a situation.

An inventor seems to first create a situation by filing a patent application in the U.S. Patent Office; however, it is not a simple problem. It is a question of "which came first, the chicken or the egg?" An inventor can generate the discourse only if the preexisting system allows him or her to do so. Therefore, it is reasonable to think a situation creates rhetoric, as Bitzer said. Nonetheless, it insufficiently describes the whole

picture if we ask, “Then who made the preexisting system?” Key players of social actions were possibly original rhetors who create new situations by establishing the system. Rhetoric creates situation, and then situation creates rhetoric, and then rhetoric creates situation again, and so on. All in all, it is likely that rhetoric and situation work for each other by turns.

Figure 7 in the previous section illustrated the activity system at the time when the U.S. patent system was established. Social actors noticed the necessity to promote inventions and created the U.S. patent system. Based on incentive theory, they believed the patent system would motivate talented people to invent and create innovative goods or services, which would eventually promote science and boost the newborn nation’s power.

In applying Bitzer and Vatz’s argument, this activity system explains the theorem “rhetoric creates situation.” However, it is the first turn of sequential interactions between rhetoric and situation. Once the activity system is established, participants in the system open the new discourse so that “situation creates rhetoric” works: inventors file patent applications to obtain patents, and patent examiners reject or grant patents for the applications. The reestablished activity system is shown in Figure 11.

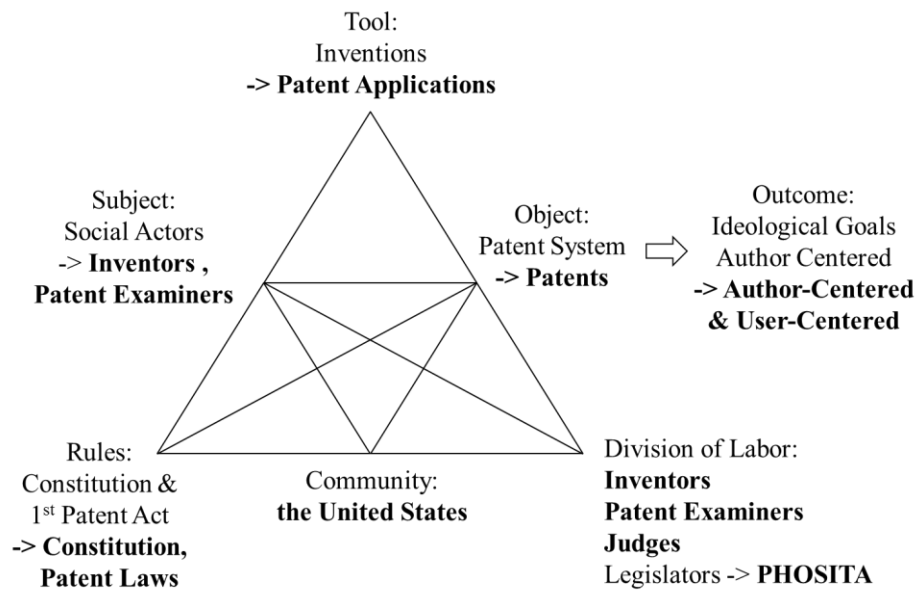


Figure 11 Reestablished activity system as the U.S. patent system settled down

As the U.S. patent system settled down, a new ideology focusing on users emerged to fill the gap of incentive theory based on author-centered ideology. When the patent system was first established, people didn't think the audience for patent applications could be someone in the public who would utilize the contents of the inventions. In the modern patent system, the new audience is called "person having ordinary skills in the art (PHOSITA)." This person is now an essential participant in the system who improves their knowledge from the publicized patent applications and creates other innovations.

Admittedly, there was public expectation that inventions would be used or sold as useful items free of restrictions after expiration of patented rights. However, it was not an

aspect of the genre of patent applications that benefits users by giving information. It originated from the author-centered philosophy that a monopoly should be granted with time limitations.

Jefferson opened the door to user-centered ideology. From the beginning, he was concerned about side-effects of the patent system from the users' standpoint and shaped various aspects of the patent system, particularly the contents of the genre of patent applications. When he was a reviewer and grantor of patents, he meticulously read petitions for patents and strictly granted them when the inventions were sufficiently useful and important. In 1797, he exhorted the son of inventor John Oliver to make an invention's performance so perfect so as to prove itself without question (Jefferson, 1984). This effort came from his belief that a patent is useful information for readers—users in terms of user-centered theory—because an invention solves problems using a new approach. Therefore, the invention's specifications need to be explained well enough to enable readers to reproduce the invention after reading them.

Jefferson pointed out the importance of the “nonobviousness over prior arts” standard for patent applications from his experience with Oliver Evans. This became a general requirement for patent applications in the modern patent system. Oliver Evans held the patent for his automated milling machine composed of bucket elevators, conveyors, and a hopper-boy. He was a new breed of inventors who approached a number of millers and forbade them from milling operations, asking for loyalty payment for using the patented invention. His actions were controversial and sparked debate over whether they were socially admissible. Jefferson criticized Evans's patents, asserting that

they were granted too broadly, and that granting easy patents obvious over prior arts were the cause of problems (Jefferson, 1854):

Your letter of August 3d asking information on the subject of Mr. Oliver Evans' exclusive right to the use of what he calls his Elevators, Conveyers, and Hopper-boys, has been duly received. . . The question then whether such a string of buckets was invented first by Oliver Evans, is a mere question of fact in mathematical history. Now, turning to such books only as I happen to possess, I find abundant proof that this simple machinery has been in use from time immemorial. Doctor Shaw, who visited Egypt and the Barbary coast in the years 1727-8-9, in the margin of his map of Egypt, gives us the figure of what he calls a Persian wheel, which is a string of round cups or buckets hanging on a pull, over which they revolved, bringing up water from a well and delivering it into a trough above. He found this used at Cairo, in a well 264 feet deep, which the inhabitants believe to have been the work of the patriarch Joseph. . . Mortimer's husbandry, I. I8, Duhamel III. II., Ferguson's Mechanic's plate, XIII; but his figure, and the verbal description of the Universal History, prove that the string of buckets is meant under that name. His figure differs from Evans' construction in the circumstances of the buckets being round, and strung through their bottom on a chain.

Figure 12 is a schematic diagram of a new genre system at the time when the U.S. patent system had initially settled down after it was established. In this model, PHOSITA is incorporated as a major subject, like inventors and patent examiners, who avails himself of the patent application to obtain and use patents.

Due to the change of ideological goals from author-centered justification to user (PHOSITA)-centered, patent applications required intensive written descriptions of the inventions. Brief sentences in the petition letter were replaced with detailed specifications of the inventions such that a PHOSITA could follow them like a recipe and create further innovations. Standards of patentable written descriptions depended on imaginary persons,

the PHOSITA, to whom the inventions applied must be novel and nonobvious over prior arts.

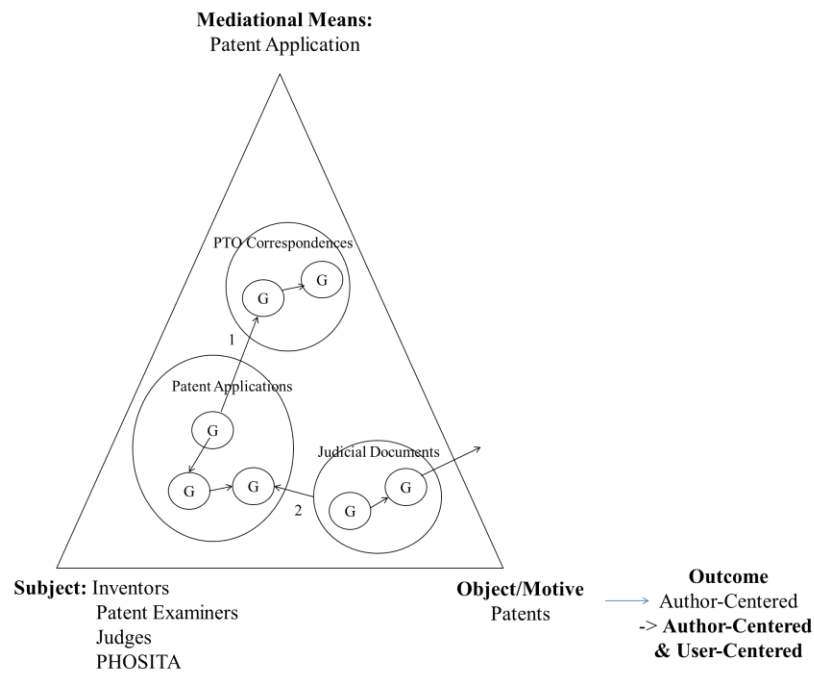


Figure 12 Reestablished genre sets within a genre system within an activity system at the time when the U.S. patent system settled down

On the other hand, if the genre system is “the full set of genres that instantiate the participation of all the parties” as defined by Bazerman (1995), the genre system overlaps with the activity system where all participants are geared toward the ideological goals. The genre system extends to the national scale, as does the activity system. Because the patent system is applied to the nation and regulated by the Constitution and federal laws,

the ideological goals of the system cover not only a state but also the nation as a whole. However, worldwide scaled systems are not allowed because every country has its own patent system. In other words, when focusing on worldwide issues of patent systems, multiple activity systems should be considered as having their own genre systems.

## **CHAPTER FOUR: A GENRE “PATENT APPLICATION” MEIDATING BETWEEN SOCIAL ACTIONS AND IDEOLOGICAL GOALS OF THE UNITED STATES WHEN THE AMERICA INVENTS ACT WAS ESTABLISHED**

### **SECTION ONE: SOCIAL ACTIONS OF KEY PLAYERS WHO SHAPED THE U.S. PATENT SYSTEM OF THE 21<sup>ST</sup> CENTURY**

#### **Lamar Smith and Patrick Leahy**

From 2005 to 2011, three consecutive U.S. congressional sessions suspended and revised patent-reform bills that finally became the America Invents Act (AIA). In 109th Congress, Lamar Smith, chairman of the House Judiciary Committee’s Intellectual Property Subcommittee, introduced the first version of the patent-reform bill on June 8, 2005 (Manz, 2012). This bill included the main ideas of the patent reform later enacted into the AIA: (1) introduction of the first-to-file system, (2) establishment of post-grant review proceedings, (3) renovation of inventor’s oath or declaration process, (4) renovation of the third-party submission of information, and (5) elimination of deceptive content in information disclosure statements. Senators Patrick Leahy and Orrin Hatch introduced a similar bill in the Senate in 2006. Neither of them were marked up or reported; however, each committee gathered important public opinions through numerous hearings (Atkins, 2011).

Senator Leahy kept the initiative in 110th Congress. On April 18, 2007, Senator Leahy, the new chairman of the Senate Judiciary Committee, and Representative Howard Berman, the new chairman of House Judiciary Committee’s Intellectual Property

Subcommittee, introduced a substantially identical patent-reform bill and brought it to the table (S. 1145, H.R. 1908). This bill flagged the following issues: (1) moving to the first-inventor-to-file system and a new definition of “prior art,” (2) renovating the inventor’s oath or declaration process, (3) modifying how to calculate royalty damages based on specific contributions to innovation over the prior art, (4) broadening the prior-user right, (5) establishing post-grant review available on any grounds during an inventor’s lifetime if the patent causes significant economic harm, (6) renovating the third-party submission of information, (7) restricting the venue for patent infringement, (8) immediate interlocutory appeal to court’s claim construction, and (9) empowering the director of the USPTO to make patent rules.

On July 18, 2007, the House Judiciary Committee voted whether to report; the Senate Judiciary Committee voted the next day. However, the bill was turned down, provoking severe disputes mainly surrounding the renovation of damages standard, unbound post-grant review proceedings, reform of venues for patent-infringement litigation, and interlocutory appeal to court’s claim construction.

The bill was suspended for years. The House became inactive on the patent-reform legislation, even in committee, until 2011. In 2008, Senate Majority Leader Harry Reid showed a possibility of bringing the bill to the floor but retracted. In the closing days of the 110th Congress, Senator Jon Kyl introduced an alternative patent-reform bill that omitted almost all of the controversial provisions of Leahy and Berman’s version except for the substantially revised post-grant review proceedings.

In the 111th Congress (2009–2010), the House did not report its bill from the committee, whereas the Senate Judiciary Committee voted to report its bill on April 2, 2009, but it failed to be brought to the floor. During the markup of the Senate bill, the committee adopted a Leahy-Specter-Feinstein amendment that eliminated the most controversial provisions. Other revisions made it through the Senate bill, resulting in a Leahy-Sessions managers' amendment in March 2010. The amendment included several important changes, including elimination of interlocutory appeals of claim construction and addition of supplemental examination. However, Senator Leahy and his Session members were unable to generate unanimous consent due to the irreconcilable objections from other senators.

In the 112th Congress (2011), on January 25, 2011, Senator Leahy introduced Senate Bill 23, substantially identical to the 2010 managers' amendment except for the addition of a section banning tax-strategy patents. Senator Leahy immediately listed the bill for the committee's markup agenda, and it was reported on February 3, 2011. The committee made significant changes, such as elimination of the remaining provisions of accelerating damage calculations for willful infringement.

On February 28, 2011, when the patent-reform bill was an inch away from being frustrated, Senator Leahy asserted that the legislation must go on, even with compromise. This was a turning point. He tabled the bill and remarked to his colleagues that the Senate should pass the bill in a bipartisan manner to create jobs, energize the economy, and promote innovation.

He supported the legislation with letters from business and labor, including the National Association of Manufacturers, the United Steelworkers, the National Venture Capital Association, the AFLCIO, the Association of American Universities, and companies representing all sectors of the patent community that have been urging action on patent reform proposals for years. He also mentioned that the courts had already addressed these issues by reversing the precedent judgments and added that the Obama administration supported the reform based on the result of research from the Department of Commerce (2010) indicating that patent reforms would create jobs without adding to the deficit.

On March 1, 2011, the Senate adopted a floor managers' amendment resulting in significant changes in damages, venue, publication, and the addition of USPTO's access to revolving funds for Business Model (BM) patents. From this version, the patent-reform bill was named the America Invents Act. This act excluded compromises on the most disputed issues: damage calculation, venue of patent litigation, interlocutory appeal to court's claim construction, and disclosure to the public of all patent applications.

On March 30, 2011, the Senate adopted the bill with a vote of 95 to five. Representative Smith suggested the AIA bill (HR1249) to House, which passed it in a vote of 304 to 117. The bill was then adjusted with a slight difference between Congress's and the Senate's versions. On September 8, 2011, the Senate passed the bill in a vote of 89 to nine after being passed in the House. President Obama signed it into law on September 16, 2011.

**Anthony Kennedy**

While the patent-reform act was pending in Congress, the U.S. Supreme Court established some important precedents that influenced Congress or Administration. Judge Anthony Kennedy has played an important role in changing the precedents of patent litigations, sometimes as a voter with the majority and sometimes as a leading writer of a unanimous judgment.

MercExchange LLC, a patent-holding company, sued eBay Inc. for infringement of its business-method patents surrounding “the electronic sale of goods between private individuals with a central authority to promote trust among participants.” The Federal Circuit Court reversed the district court’s denial of a permanent injunction on eBay.

Under Supreme Court discretion, Chief Justice John Roberts Jr. joined by Justices Antonin Scalia and Ruth Bader Ginsburg, granted injunctive relief relying on the vast majority of cases for two centuries, stating that “a page of history is worth a volume of logic.”

However, Justice Anthony Kennedy, leading a majority with Justices John Paul Stevens, David Souter, and Stephen Breyer, noted the recent rise of patent-holding companies using patents not for producing and selling goods but primarily for obtaining exorbitant licensing fees. Justice Kennedy wrote a majority opinion that the current patent system was suffering ill effects from business-method patents and so-called patent troll companies so that a patent holder must satisfy a four-prong test to achieve injunctive remedies:

- That the plaintiff has suffered irreparable injury;
- That remedies available at law, such as monetary damages, are inadequate to compensate for that injury;

- That, considering the balance of hardships between the patent holder and patent infringer, a remedy in equity is warranted; and
- That the public interest would not be disserved by a permanent injunction.

The lower court's rulings originated from an understanding that patents are just like other forms of property and have the same rights and remedies. However, Supreme Court rulings stressed that patents are also designed to achieve promotion of scientific and industrial progress for the purpose of the public interest of the patent system.

The *eBay* decision will lead nonpracticing patent holders no longer expecting automatic injunctive relief as leverage in negotiations against manufacturers of goods or providers of services to obtain exorbitant monetary judgments. A subsequent case following the *eBay* decision supports this forecast. On June 14, 2006, Microsoft succeeded in persuading a district court to deny an injunction, using the *eBay* case as reasoning, in a case where Microsoft was charged for willful infringement of patents owned by a nonpracticing company asking for an astronomical amount of money for licensing.

On the other hand, on April 30, 2007, the Supreme Court ruled that a disputed patent claim by Teleflex Inc. was invalid, applying violation of the nonobviousness requirement, 35 U.S.C. §103, for patent applications based on the KSR case (2007). Initially, Teleflex filed against KSR International Co. for patent infringement; KSR rebutted that the patent was invalid because it is obvious to attach an electronic sensor to an automobile pedal system in eyes of a PHOSITA. The Court of Appeals for the Federal Circuit reversed the district court's decision based on the TSM test, where a patent examiner or accused infringer must show enough explicit evidence or at least some

implicit teaching, suggestion, or motivation existing in prior arts to combine known claim elements of the invention to show its invalidity (Teleflex, 2005).

Justice Kennedy, in a majority opinion, rejected the longstanding TSM test in favor of a more expansive and flexible approach to invalidate poor-quality patents. He emphasized that “a person of ordinary skill is a person of ordinary creativity, not an automaton” who could find motivation “implicitly in the prior art” with the “common sense” of a PHOSITA (KSR, 2007).

This decision gave patent examiners or judges more extensive discretion in rejecting or invalidating patents based on the nonobviousness requirement. In this context, on October 10, 2007, the USPTO published “Examination Guidelines for Determining Obviousness Under 35 U.S.C. §103 in View of the Supreme Court Decision of Case KSR International Co. v. Teleflex Inc.” The guidelines suggested seven new rationales supporting the grounds of rejection pursuant to 35 U.S.C. §103 (USPTO, 2007).

- (1) Combining prior art elements according to known methods to yield predictable results;
- (2) Simple substitution of one known element for another to obtain predictable results;
- (3) Use of known technique to improve similar devices (methods, or products) in the same way;
- (4) Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;
- (5) “Obvious to try” — choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success;
- (6) Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to one of ordinary skills in the art;

- (7) Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.

In 2010, Justice Kennedy authored the majority opinion for the Supreme Court in *Bilski v. Kappos*. Bernard Bilski and Rand Warsaw filed a patent application in 1997 for a method of hedging risk under a fixed-bill energy contract, where consumers pay monthly prices for their future energy consumption in advance of the season based on their past energy use. The patent examiner rejected all claims because “the invention is not implemented on a specific apparatus and merely manipulates [an] abstract idea and solves a purely mathematical problem without any limitation to a practical application, therefore, the invention is not directed to the technological arts.” The Board of Patent Appeals and Interferences (BPAI) affirmed the rejection on the ground that transformation of nonphysical financial risks and legal liabilities of the commodity provider, the consumer, and the market participants is not patent-eligible subject matter.

The U.S. Court of Appeals for the Federal Circuit (CAFC) upheld the rejection. Judges Dyk and Mayer emphasized that the framers of the Constitution intended to exclude from the operation of the U.S. patent system the “method for organizing human activity that do not involve manufactures, machine, or compositions of matter.” Judge Rader, known as a strongly pro-patent judge, gave a dissenting opinion that “transformation” or “representative of physical object” left too many unanswerable questions and criticisms of business-method patents and generally missed the needs of 21st-century innovation and entrepreneurship.

The Supreme Court affirmed the rejection of Bilski’s patent application. All nine

justices agreed that the application was properly rejected because an abstract investment strategy set forth in the application was not a patentable subject matter under 35 U.S.C. §101. However, five justices—Kennedy, Roberts, Thomas, Alito, and Scalia—all agreed that the machine-or-transformation test is not the sole test for deciding whether an invention is a patent-eligible process.

Justice Kennedy has been known as a deciding voter between liberalism vs. conservatism. He approaches cases on an individual basis instead of following a set of guiding principles or ideologies. He is known to fall slightly on the conservative side of the political spectrum but often veers to the left when casting tie-breaking votes in divisive cases. For example, he wrote the majority opinion striking down the federal Defense of Marriage Act (DOMA) against the same-sex marriage. He also sided with the majority in recognizing the right to abortion under the due process clause of the Fourteenth Amendment in *Roe v. Wade* (1992). In the 2008–2009 term, Justice Kennedy broke 23 cases into five-to-four votes (Liptak, 2009), and in the 2010–2011 term, he joined the majority in 14 decisions of 16 cases by a five-to-four vote (Bravin, 2011). IP cases are not aligned with ideological issues from the commonly used frame of liberalism vs. conservatism. However, he showed a tendency to regulate abuse of patented rights in monumentally decisive cases such as the eBay, KSR, and Bilski cases. The eBay case moderated abuse of injunction reliefs by introducing the four-prong test. The KSR case intensified the nonobviousness patentability requirement. The Bilski case regulated business-model patents by setting a guideline of patentability.

**David Kappos**

David Kappos took the role of Secretary of Commerce for Intellectual Property and Director of the U.S. Patent and Trademark Office in August 2009 with an unprecedented challenge. At times, the user community was unhappy with the low quality of patents granted by the USPTO and with delays in processing patent applications due to an ever-growing backlog. Political partisanship was at its highest point ever. Patent reform had been drifting in Congress for years without no settlement in sight.

Despite these obstacles, 16 pieces of legislation related to intellectual property were signed into law due to Kappos's efforts. Many of these have influenced and will continue to profoundly influence the USPTO, inventors, businesses, and eventually the national economy. The following are representative legislations: the Foreign and Economic Espionage Penalty Enhancement Act; the Patent Law Treaties Implementation Act; the Trademark Technical and Conforming Amendment Act; the Indian Arts and Crafts Amendments Act; the U.S. Patent and Trademark Office Supplemental Appropriations Act; the America Competes Reauthorization Act; the Leahy-Smith America Invents Act; and the Leahy-Smith America Invents Technical Correction Act.

David Kappos sent a letter to the Senate Judiciary Committee providing the administration's explicit and specific positions on patent reform in an unprecedented strong tone. The letter was not well received by House members and some user communities; however, he kept working to persuade them. He passionately communicated with the media and legislators. Although he had no prior administration or

Capitol Hill experience, Kappos knew what the user community wanted based on his long career experience and knowledge obtained from the user community.

As director of the USPTO, Kappos pushed the patent reform forward by swaying public opinion through press releases, speeches, and House testimonies. He started with a press conference call on October 6, 2009, to discuss the administration's views on patent reform, and announced on February 1, 2010, "President Obama's fiscal year 2011 budget request for the USPTO" amounting to \$2.322 billion. On June 2, 2010, Kappos held a press conference to discuss a proposed initiative allowing applicants to choose different patent-processing options, the "multiple-track patent examination." This service was designed to enable applicants to prioritize their applications and the USPTO's workload to meet the needs of the marketplace.

On June 28, 2010, Kappos released a statement in response to the Supreme Court ruling in *Bilski v. Kappos*. On July 27, 2010, the USPTO pressed for interim guidance on the patent examination in view of the decision in *Bilski v. Kappos*. Business-method claims drawn from an abstract idea would not be patentable subject matter as a result of the more extensive eligibility test than the previous "machine or transformation" test.

On February 14, 2011, Kappos announced President Obama's fiscal year 2012 budget request for the USPTO amounting to \$2.71 billion, specifically designating how to accomplish patent reform, such as cutting the average overall processing time of a patent application from 35 months to 20 months by 2015, three-track patent processing including an accelerated one within 12 months, and hiring 1,500 examiners and IT systems for the USPTO. On March 1, 2011, Kappos hosted a call with members of the

media on patent reform to discuss the administration's position on patent reform and its critical role in supporting innovation and job creation.

On June 21, 2011, Kappos issued a statement to congratulate Judiciary Chairman Smith, Subcommittee Chairman Goodlatte, and Ranking Member Watt as well as the House Leadership for their stewardship in ushering the Leahy-Smith America Invents Act onto the floor for consideration before the full House. He emphasized that the USPTO would need full access to all of its fees to carry out its core mission and said, "I look forward to continuing to work with Congress on this important matter as the bill moves toward final passage." Kappos made a statement on June 23, 2011, following House passage of the Leahy-Smith America Invents Act, and another one on September 8, 2011, following the final Senate passage of the AIA.

Kappos officially made 11 speeches and two congressional testimonies in 2010 and 20 speeches and three congressional testimonies in 2011 until the AIA was finally signed into law. Interviews with magazines or media were often difficult to trace, and speeches were made in universities, conferences, symposiums, and ceremonies across the country.

All testimonies before the House of Representatives directly dealt with subjects of patent reform at important moments in legislation, and Kappos assured them every time of the reasons the United States could not avoid reforming the patent system by putting the USPTO back at the center of the system. The first testimony was made on March 25, 2010, to discuss USPTO operations, programs, and initiatives with the requirements outlined in the president's fiscal year 2011 budget request to fund those efforts before the

subcommittee on Commerce, Justice, Science, and Related Agencies of the United States House Committee on Appropriations. On May 5, 2010, Kappos testified about USPTO oversight before the Committee on the Judiciary of the U.S. House of Representatives to support the work of the House and Senate to reform U.S. patent laws in currently pending legislation.

On January 25, 2011, Kappos testified titled “How an Improved U.S. Patent and Trademark Office Can Create Jobs” before the Subcommittee on Intellectual Property, Competition, and Internet Committee in the Judiciary of the U.S. House of Representatives. On March 3, 2011, he testified about the USPTO fiscal year 2012 budget request before the subcommittee on Commerce, Justice, Science, and Related Agencies of the United States House Committee on Appropriations . On March 30, 2011, he testified about the USPTO’s views on the America Invents Act before the Subcommittee on Intellectual Property, Competition, and the Internet of Committee in the judiciary of the U.S. House of Representatives. His point was that the administration supported passage of S. 23 and looked forward to working with the House to support moving forward the House’s version of the important legislation.

Kappos’s legacy is that he managed to put the USPTO back on track. The agency is open for business and issuing patents. It is odd to say, but the USPTO had become so dysfunctional over the years that the allowance rate had slipped to unprecedented lows. The feeling was that the USPTO was the “No Patent for Your Office,” which did nothing to help foster the growth of innovation, and, more important, jobs. At Kappos’s

retirement in the end of January 2013, Acting Commerce Secretary Rebecca Blank said in retrospect:

David Kappos has done a terrific job of helping to shape and implement the administration's innovation agenda. His three-and-a-half year tenure is marked by many notable accomplishments which have helped improve the IP system both here and abroad...We are fortunate to have had Dave on our leadership team. We all benefited from his deep knowledge, strong management skills, and passion for the issues before the USPTO. I thank him for his distinguished service.

Kappos worked closely with Senator Patrick Leahy, who chaired the Senate Judiciary Committee and took a lead role over the years for the AIA. On learning of Kappos's decision to step down in January 2013, Senator Leahy made this statement:

I have had the distinct pleasure of working with Dave Kappos over the last three years in his capacity as Director of the Patent and Trademark Office, and for many years before that in Mr. Kappos' role in the private sector. Director Kappos was instrumental in the development and enactment of the Leahy-Smith America Invents Act. He and his team have set the PTO on course to implement the key provisions of the Act, which will improve the patent system for decades to come. Director Kappos' leadership of the PTO has been applauded by Democrats and Republicans, and by all sectors of the business community. I was sad to hear of his decision to step down; the President and the Commerce Department have lost a valuable member of their economic team. I wish Dave all the best.

### **Barack Obama**

President Obama signed the America Invents Act (AIA) at Thomas Jefferson High School for Science and Technology in Alexandria, Virginia, on September 16, 2011, with this remark:

I am pleased to sign the America Invents Act. This much-needed reform will speed up the patent process so that innovators and

entrepreneurs can turn a new invention into a business as quickly as possible.

On that day, White House Press (2011) posted five ways that the AIA would help business, inventors, and entrepreneurs: (1) providing a fast-track option for patent processing within 12 months, (2) reducing the current backlog of patent applications in the USPTO, (3) reducing patent litigation, (4) increasing patent quality issued by the USPTO, (5) increasing the ability of American inventors to protect their intellectual property abroad.

The average wait time to obtain a patent from the patent office was almost three years after filing an application because there was a backlog of more than 650,000 unexamined patent applications. The additional resources from the AIA were expected to allow the Patent and Trademark Office to continue to combat the backlog and guarantee a new fast-track 12-month option. Patent ownership is a critical factor for venture capital companies considering when to invest in entrepreneurs hoping to grow their business. In this way, the AIA will help entrepreneurs as well as currently operating businesses.

Moreover, entrepreneurs and businesses were suffering from patent litigation, often because of poor-quality patents. It was promised that the patent office would offer entrepreneurs “new ways to avoid litigation regarding patent validity, at costs significantly less expensive than going to court.” To improve patent quality, the USPTO would present tools and resources to allow patent challenges to be resolved “in-house through expedited post-grant processes.”

It was lastly introduced that “the new law will harmonize the American patent process with the rest of the world to make it more efficient and predictable.” The patent

office would no longer be apart from the world and would expand to “work-sharing with other patent offices around the world to increase efficiency of patent processing for applicants seeking protection in multiple jurisdictions.” Entrepreneurs could easily market products abroad with a higher certainty and compatibility with U.S. patents.

The AIA includes a lot of detailed features. Many essential features took effect on the expiration of the one-year period beginning on the enactment date. As of September 16, 2012, the Board of Patent Appeals and Interferences became the Patent Trial and Appeals Board, where patent quality, once granted, is controlled. Inter partes review replaced inter partes reexamination and “covered business-method patents” were subjected to post-grant review. The due date of third-party submission of prior arts was prolonged. Applicants other than inventors were allowed to file patent applications. Inequitable conduct of applicants was allowed to be cured through supplemental reexamination.

Some of the biggest changes with the AIA, such as first-inventor-to-file, took effect on March 16, 2013. In July 2012, the first satellite office was opened in Detroit. Other offices will open in Denver and California’s Silicon Valley in 2014, and in Dallas in 2015. The AIA required the USPTO to establish three or more satellite offices for the purpose of increasing outreach and decreasing the application backlog to improve examination quality.

In the meantime, as social problems associated with “patent trolls,” who abusively file litigations and blackmail businesses, became acute, the post-AIA period developed into preventing these abusive activities, resulting in a skyrocketing number of litigations.

President Barack Obama plainly targeted the patent trolls and took initiatives in new policies and legislative developments.

In February 27, 2013, Congress introduced H.R. 845 to curb abusive patent litigation by Non-Practicing Entities (NPE), or so-called patent trolls. The sponsors were House Representatives Peter DeFazio and Jason Chaffetz. This bill, titled the Saving High-Tech Innovators from Egregious Legal Duties (SHIELD) Act of 2013, would make losing NPE plaintiffs pay the entire litigation costs, including reasonable attorney fees. The defendant could make an early motion to ask whether the patent owner is an NPE. If the patent owner is deemed an NPE, then the NPE would be required to post a bond to cover the full costs of litigation, which would be paid when the NPE loses the case due to poor validity of patents or noninfringements. The SHIELD Act defined the NPE as the party asserting the patented right and who is (1) not the inventor or original assignee, (2) not a university or technology transfer organization associated with a university, or (3) not exploiting the patent through production or sale of an item covered by the patent.

In May 6, 2013, Senator Chuck Schumer introduced Senate bill S.866, the Patent Quality Improvement Act. The bill expanded the meaning of business-method patents beyond financial products or services to apparatus for performing data processing. Then, the special post-grant review program was made for particularly covered business-method patents, which was introduced in Congress as H.R. 2766, the STOP Act, by House representative Darrell Issa on July 22, 2013.

In May 16, 2013, congressional bill H.R. 2024, the End Anonymous Patent Act, was introduced by House Representative Ted Deutch. This bill required disclosure of

patent owners' identity to the U.S. Patent and Trademark Office (USPTO) and required buyers of patents to disclose the sale, grant, or conveyance to the USPTO. Damages for entities that failed to comply with the disclosure requirements would be limited to damages occurring from the date disclosure requirements were met.

In May 22, 2013, Senate bill S. 1013, the Patent Abuse Reduction Act of 2013, was introduced by Senator John Cornyn. This bill required that the party alleging infringement must clarify in the court pleading details and identity who (1) owns or co-owns the patent, (2) is the assignee of or an exclusive licensee to such patent, or (2) has a legal or financial right to enforce the patent. This bill was introduced in Congress as H.R. 2639, the Patent Litigation Innovation Act of 2013, by House Representative Hakeem Jeffries on July 10, 2013.

On the state level, Vermont enacted the first law combating patent trolls called the Bad Faith Assertion of Patent Infringements. It enlists factors to help judges distinguish legitimate from illegitimate patent assertions and allows Vermont's attorney general to bring civil enforcement actions against the bad-faith patent asserters. In May 22, 2013, Vermont Attorney General William Sorrell filed suit against MPHJ Technology Investments, LLC, for violation of the Vermont Consumer Protection Act. MPHJ sent unfair and deceptive letters threatening patent-infringement litigation to small businesses.

Minnesota Attorney General Lori Swanson has also filed suit against MPHJ to stop the company from sending licensing letters to anyone in Minnesota without first giving the attorney general's office two months' notice and gaining consent.

Nebraska Attorney General Jon Bruning initiated an investigation of law firm Farney Daniels to determine if the firm violated the Nebraska Consumer Protection Act. Farney Daniels has been restrained from initiating any new patent-infringement enforcement efforts in Nebraska until the investigation is resolved.

On June 4, the White House (2013) released a fact sheet called “White House Task Force on High-Tech Patent Issues,” which included a series of legislative recommendations regulating patent trolls:

- (1) **Require patentees and applicants to disclose the “Real Party-in-Interest,”** by requiring that any party sending demand letters, filing an infringement suit or seeking PTO review of a patent to file updated ownership information, and enabling the PTO or district courts to impose sanctions for non-compliance.
- (2) **Permit more discretion in awarding fees to prevailing parties in patent cases,** providing district courts with more discretion to award attorney’s fees under 35 USC 285 as a sanction for abusive court filings (similar to the legal standard that applies in copyright infringement cases).
- (3) **Expand the PTO’s transitional program** for covered business method patents to include a broader category of computer-enabled patents and permit a wider range of challengers to petition for review of issued patents before the Patent Trial and Appeals Board (PTAB).
- (4) **Protect off-the-shelf use by consumers and businesses** by providing them with better legal protection against liability for a product being used off-the-shelf and solely for its intended use. Also, stay judicial proceedings against such consumers when an infringement suit has also been brought against a vendor, retailer, or manufacturer.
- (5) **Change the ITC standard for obtaining an injunction** to better align it with the traditional four-factor test in *eBay Inc. v. MercExchange*, to enhance consistency in the standards applied at the ITC and district courts.

- (6) **Use demand letter transparency to help curb abusive suits,** incentivizing public filing of demand letters in a way that makes them accessible and searchable to the public.
- (7) **Ensure the ITC has adequate flexibility in hiring** qualified Administrative Law Judges

The White House Press also included five executive actions to take practical steps to

improve transparency in the patent system and to level the playing field for innovators:

- **Making “Real Party-in-Interest” the New Default.** Patent trolls often set up shell companies to hide their activities and enable their abusive litigation and extraction of settlements. This tactic prevents those facing litigation from knowing the full extent of the patents that their adversaries hold when negotiating settlements, or even knowing connections between multiple trolls. The PTO will begin a rulemaking process to require patent applicants and owners to regularly update ownership information when they are involved in proceedings before the PTO, specifically designating the “ultimate parent entity” in control of the patent or application.
- **Tightening Functional Claiming.** The AIA made important improvements to the examination process and overall patent quality, but stakeholders remain concerned about patents with overly broad claims — particularly in the context of software. The PTO will provide new targeted training to its examiners on scrutiny of functional claims and will, over the next six months develop strategies to improve claim clarity, such as by use of glossaries in patent specifications to assist examiners in the software field.
- **Empowering Downstream Users.** Patent trolls are increasingly targeting Main Street retailers, consumers and other end-users of products containing patented technology — for instance, for using point-of-sale software or a particular business method. End-users should not be subject to lawsuits for simply using a product as intended, and need an easier way to know their rights before entering into costly litigation or settlement. The PTO will publish new education and outreach materials, including an accessible, plain-English web site offering answers to common questions by those facing demands from a possible troll.

- **Expanding Dedicated Outreach and Study.** Challenges to U.S. innovation using tools available in the patent space are particularly dynamic, and require both dedicated attention and meaningful data. Engagement with stakeholders — including patent holders, research institutions, consumer advocates, public interest groups, and the general public — is also an important part of our work moving forward. Roundtables and workshops that the PTO, DOJ, and FTC have held in 2012 have offered invaluable input to this process. We are announcing an expansion of our outreach efforts, including six months of high-profile events across the country to develop new ideas and consensus around updates to patent policies and laws. We are also announcing an expansion of the PTO Edison Scholars Program, which will bring distinguished academic experts to the PTO to develop — and make available to the public — more robust data and research on the issues bearing on abusive litigation.
- **Strengthen Enforcement Process of Exclusion Orders.** Once the U.S. International Trade Commission (ITC) finds a violation of Section 337 and issues an exclusion order barring the importation of infringing goods, Customs and Border Protection (CBP) and the ITC are responsible for determining whether imported articles fall within the scope of the exclusion order. Implementing these orders present unique challenges given these shared responsibilities and the complexity of making this determination, particularly in cases in which a technologically sophisticated product such as a smartphone has been successfully redesigned to not fall within the scope of the exclusion order. To address this concern, the U.S. Intellectual Property Enforcement Coordinator will launch an interagency review of existing procedures that CBP and the ITC use to evaluate the scope of exclusion orders and work to ensure the process and standards utilized during exclusion order enforcement activities are transparent, effective, and efficient.

Following Obama's executive actions, the Federal Trade Commission (FTC) commenced a sweeping investigation of patent trolls, including the issuance of subpoenas to patent trolls. On June 20, 2013, Chairwoman Edith Ramirez pledged to protect small businesses from deceptive NPE practices using its Section 5 authority under the FTA Act. She stated, "NPE lawsuits are no longer filed primarily against IT firms. Retailers and

financial services providers that incorporate software into their products and services are now common targets.”

In August 27, 2013, the USPTO announced that a rule package will be released requiring enrollment of real-party-interest of patents. Real party interest would be those entities having legal right to enforce the patent or the legal title holders’ ultimate parent entity that is not controlled by any other entity.

However, anti-patent troll bills are still gridlocked in legislation. President Obama urged Congress in the State of the Union address on January 28, 2014, “Let’s pass a patent reform bill that allows our businesses to stay focused on innovation, not costly, needless litigation.” He added that not only tech companies, but also retailers, coffee shops, and banks have been accused of infringement and joined the ranks of those lobbying lawmakers for protection.

On February 20, the White House (2014) released a secondary set of executive actions, including updates on the previous five executive actions of June 2013 and three new executive actions. Updates on the 2013 executive actions are summarized as follows. First, the USPTO recently proposed a new rule requiring the reporting of people or companies with ownership interests in a patent or application, called the “attributable owners.” The USPTO is currently soliciting and accepting written comments from the public here, and hosting stakeholder engagement events to solicit additional valuable feedback. Second, USPTO will launch a pilot program aimed at encouraging the use of clearer language within patent claims through the use of glossaries in patent specifications. Third, to help level the playing fields and ensure individuals and

businesses know their rights and are aware of available resources before entering into costly litigation or settlements, the USPTO is launching today a robust online toolkit of information, available at [www.uspto.gov](http://www.uspto.gov) or [www.uspto.gov/patentlitigation](http://www.uspto.gov/patentlitigation). Fourth, the USPTO has also expanded its Thomas Alva Edison Visiting Scholars Program and has now selected three new scholars who will engage in focused study of various aspects of our patent system, to provide insights on how to further reduce unnecessary litigation and improve the quality of issued patents. Fifth, U.S. Intellectual Property Enforcement Coordinator has launched a review of the processes and standards used during exclusion order enforcement activities and, in the coming months, will issue recommendations and guidance to executive agencies to improve the efficacy, transparency, and efficiency of exclusion order enforcement activities.

The new three executive actions described in Fact Sheet from the White House (2014) are summarized as follows. First, crowdsourcing Prior Art: USPTO will seek public input on these efforts, as the Administration calls on the public and expert stakeholders to partner with us to encourage the disclosure and sharing of prior art, particularly hard-to-find references. Second, more Robust Technical Training and Expertise: The Administration is calling upon volunteers to assist in this training effort and ensure that training is systematic, robust, and covers all disciplines. Third, patent Pro Bono and Pro Se Assistance: The USPTO will be providing dedicated educational and practical resources to those who lack legal representation (i.e., pro se applicants) and will work with the AIA Pro Bono Advisory Council—and through a newly appointed full-

time Pro Bono Coordinator—to expand the existing pro bono program established under the AIA to cover all 50 states.

## **SECTION TWO: IDEOLOGICAL GOALS OF THE KEY PLAYERS**

It is difficult to trace and determine the ideological goals of a contemporary event. For this reason, individual and focus group interviews on professional patent practitioners in the workplace will be performed to gather their opinions and grasp the main ideas of the AIA. It will be good to know if there are similarities or differences between patent practitioners' responses. Furthermore, it will be helpful to compare ideological goals drawn from textual or intertextual analysis on key players' utterances and writings for the AIA with those from professional patent practitioners' interviews.

### **Methodology I: Individual and Focused Group Interviews**

Interviews and focus groups were conducted with practitioners involved in the patent industry. Recruiting e-mails were sent to potential participants at least two weeks before the interview (Appendix 1). Interviews were done in conference rooms at participants' workplaces. Participants signed consent forms before the interviews; the forms informed them about the interview's purpose, confidentiality, benefits/risks, and contact correspondence (Appendix 2). There was no time limit on interviews. The AIA is not a single change in patent law, but a series of changes that include different aspects of

issues in dispute. Because this study deals with professional subjects, it took time to dig into factual things and discuss backgrounds. I took notes on their attitudes and key points.

As an interviewer, I tried to remind interviewees of features of the AIA and to consider the ideological goals implicated in the AIA holistically covering specific aspects as many as possible. I developed a list of features delivered it in advance to interviewees within the recruiting e-mails:

- First inventor to file
- Inventor's oath/declaration (permitting signatures of assignees)
- Defense to infringement based on prior commercial use
- Post-grant review proceedings
- Pre-issuance submissions by third part
- Change of fees for patent service
- Supplemental examination
- Best mode requirement

For individual interviews, four new patent practitioners were recruited who work in the Washington, DC, metropolitan area: one patent attorney mostly working for a university, one patent attorney mostly working for small businesses, one former patent examiner in the USPTO, and one former patent director in a global company. For focus group interviews, four patent attorneys were recruited who work for a patent law firm in Fairfax, Virginia. They have a great deal of experience in patent prosecution or litigation and represent diverse customers. I led the group interview in three sessions to help them maintain concentration; however, the participants were allowed to discuss freely in each session. The following is a list of directions introduced to participants about sessions.

- Session 1: Discuss what ideal goals are implicated in each feature of the AIA.
- Session 2: Clarify what you discovered through the discussion.
- Session 3: Discuss how effectively the ideal goals of the AIA you clarified will be achieved.

### **Findings I: Individual and Focused Group Interviews**

Although the interviewees are professionals who have worked in the field of patent law for more than 10 years, most had difficulty thinking beyond the legal mechanics of the AIA. I had to repeatedly ask “Would you please consider it again from larger perspective than that?” until they were able to “think as big as possible.” On the other hand, I tried to gather professional information about the AIA so that I could understand it thoroughly and remind them of factual aspects of the AIA if they were distracted. Anyhow, interviews were not designed to measure their professional knowledge but to gather their thoughts about the social movement. It was interesting that participants tended to illuminate different aspects of the AIA, particularly depending on their main customers.

#### **1. Individual Interviews**

The following tables summarize key points of ideas from four individual interviewees. I could roughly classify the responses of interviewees into two groups. The answers of practitioners from the USPTO and from a global company were similar, whereas the answers of practitioners working for universities and small businesses had some similarity. I numbered the interviewees sequentially to identify them conveniently.

Table 1 Responses of First and Second Interviewees about Ideological Goals of the AIA

Features of the AIA	First Interviewee (USPTO)	Second Interviewee (Global Co.)
(1) First inventor to File	<p>– To harmonize with the rest of the world and increase efficiency and certainty of U.S. patents.</p>	<p>– To repeal traditional but outdated system and harmonize with the rest of the world to recapture U.S. leadership in international stage.</p> <p>– To improve international trade of IP or its services.</p>
(2) Inventor's oath or declarations (Substitute statement)		
(3) Defense to infringement based on prior commercial use		
(4) Post-grant review proceedings (incl. EPR, IPR)	<p>– To empower USPTO and bailing the U.S. patent system out of backlog of patent applications and litigations.</p>	<p>– To decrease diseconomy factors in administration of USPTO and jurisdiction of courts.</p>
(5) Preissuance submissions by third party		
(6) Change of fees for patent service		
(7) Supplemental examination		
(8) Best mode		

requirement		
(9) Governmental funding  policy for Patent and  Trademark Office		

Table 2 Responses of Third and Fourth Interviewees about Ideological Goals of the AIA

Features of the AIA	Third Interviewee (University)	Fourth Interviewee (Small Business)
(1) First inventor to File	– To increase legal certainty in determining the first inventors, but is some disadvantage to universities lacking funds.	– To remove inefficient or ineffective process on First-to-inventor system, but is some disadvantage to small businesses to race to file patent applications against large businesses in FITF.
(2) Inventor's oath/declarations (Substitute statement)	– To unburden applicants, including universities.	– To unburden applicants, including small businesses, but it's
(3) Defense to infringement based on prior commercial use	– Nothing to do with universities.	risky to decrease inventors' standing on patent prosecution.

(4) Post-grant review proceedings (including EPR, IPR)	– To grant patents to real innovations	– To make the U.S. patent system function by eliminating poor-quality patents, but it is disadvantageous to small businesses with low investment in R&D and patents
(5) Preissuance submissions by third party		
(6) Change of fees for patent services	– To unburden university applicants.	– To unburden small business applicants, but it is questionable due to attorney fees how much this helps in racing to file patent applications under the AIA.
(7) Supplemental examination	– To unburden applicants, including universities,	– To remove inefficient or ineffective processes.
(8) Best-mode requirement		
(9) Governmental funding policy for Patent and Trademark Office	– To use money for improving the function of the USPTO.	– To use money for strengthening reexamination of the USPTO and to remove inefficient or ineffective processes in courts.

#### **(1) First Inventor to File**

The first and second interviewees answered that the first-to-invention system is no longer available in a practical sense in the 21st century, although the United States had

proudly kept the system for over two hundred years. Most major IP countries, including the EU, Japan, China, and Korea, currently apply the first-to-file system.

The first interviewee, the former examiner in the USPTO, emphasized that “this first-inventor-to-file (FITF) system is more advantageous to the first inventors. If they file patent applications without delay, then they can find justice by paying thousand dollars for a filing fee. However, under the first-to-invention system, the genuine first inventors might lose hundreds of thousands dollars for nothing even after knocking the door of justice.” The first interviewee added, “It is time to harmonize with the rest of the world by adopting the FITF system.” He explained that if the United States were to adopt the FITF system, the USPTO could easily cooperate with patent offices in foreign countries when examining patent applications. Inventors and applicants would benefit more in this global era by expanding their enforcement to foreign countries.

The second interviewee was a patent director of a global company who currently works in a patent law firm. He also named “patent harmonization,” but added “world leadership of USA” as an ideology behind the AIA. He emphasized that the AIA is a by-product of the United States’ struggle to keep its leadership position in the intellectual property field. In the 21st century, business innovation is happening across borders, and the patent system needs to support this new reality. Harmonization in a substantial part of patent laws in different countries became a hot topic between member states of World Intellectual Property Organization (WIPO). Nevertheless, the United States maintained a passive stance about patent harmonization until the country faced new economic environments and its role in the patent world had been challenged. The most stunning

change in the world market is undoubtedly the rise of East Asia, including China, Japan, and South Korea, from the aspect of intellectual property as well as goods and services. The EU is becoming a federation from the perspective of intellectual property, immaterial goods economy, and material goods economy.

The second interviewee tried to describe this trend in detail, and I show this here with the results of quick research of my own. A WIPO (2012) reported that sales of smartphones in China surpassed those in the United States—246 million versus 230 million, respectively. As the market grows, the number of patent applications grows accordingly. China surpassed the United States in receiving patent applications in 2011, recording 526,412 versus 503,582 in the United States. China already overtook Japan in 2010. The five largest patent offices, so-called IP5, in number of patent applications received are, in order from largest to smallest, SIPO in China, USPTO in the United States, JPO in Japan, EPO in the European Union, and KIPO in South Korea. Disadvantages from differences in patent systems outweighed advantages. Processes for filing and examining patent applications should be simplified and made compatible with other countries. Otherwise, the patent business may move to China and the material economy will follow. The choice for the United States is to synchronize the patent system with other countries including IP5 and fight for hegemony.

On the other hand, the third and fourth interviewees focused on “legal certainty” as an ideology of the first-inventor-to-file system. Both were skeptical in finding the first inventors on disputes under the first-to-inventor system. The third interviewee argued there had been an “interference” procedure in the USPTO where the genuine first

inventor is sought. However, it is difficult to prove the first invention such that the final resolutions are still unsatisfied and unpredictable at the expense of hundreds of thousands of dollars. The fourth interviewee responded that he can understand the FITF as an effort to remove inefficient or ineffective aspects of the first-to-inventor system, but he disagrees with the idea that FITF is better holistically.

Both were concerned about the disadvantage the FITF places on small entities such as small businesses, universities, and individual inventors. The fourth interviewee said, “Large companies will get more benefit from AIA than small entities. They can win the first-to-file race with money backup. Main part of cost to get a patent is not Patent Office fee but attorney fee. With money backup, inventors can make quick decision without haste.”

## **(2) Inventor’s Oath/Declarations (Substitute Statement)**

Applicants are allowed to sign the inventor’s oath or declaration form on behalf of inventors in certain circumstances, such as when inventors were unavailable. The second interviewee discussed his experience where a co-inventor, a former employee, refused to sign the oath and declaration statement not because he had a justifiable reason in a legal sense, but because the company he moved to intentionally wanted to delay filing the patent application owned by the inventor’s former company. Under the first-to-file system, this is not possible because applicants obtain all procedural rights once assigned from inventors. The first interviewee remarked, “This is another patent harmonization introducing applicant-centered systems the rest of world applies.” The third and fourth interviewees described this change as intended “to unburden applicants.” The fourth

interviewee remarked, “However, it is dangerous to decrease inventors’ influence on patent prosecution like this. It’s bad for inventorship.”

### **(3) Defense to Infringement Based on Prior Commercial Use**

U.S. patent law, unlike in other countries, had not allowed so far prior users the right to defend themselves against patentees. The second interviewee illustrated that many companies in the United States still produce commercial goods without understanding that the manufacturing technology they used is patentable. Many companies also believe that it is too costly to obtain patents for such manufacturing technology and that it is difficult to prove that others have infringed on those patents. However, they are vulnerable to patentees who make patents knowing these situations or by chance and attacked them only to make money. At least it is legally stabilized to allow “prior commercial user” to keep using the technology without paying royalties, like in other countries. He said, “The U.S. manufacturers have to enjoy the benefit from ‘prior-use defense’ because almost all other countries admit the policy to protect manufacturers against patentees.”

The third interviewee stated that this change has nothing to do with universities, because universities do research and do not produce and sell goods or services commercially. The fourth interviewee stated that this change is a good way to protect small businesses, which often fail to file patent applications and apply technologies they developed to manufacturing methods, apparatus, or materials.

### **(4) Post-Grant Review Proceedings, and (5) Preissuance Submissions by Third Party**

Although examiners in the patent office took responsibility for evaluating the patentability of inventions, the patent system guarantees some procedures that third parties or stakeholders can inform the office of any material that is helpful for examination (preissuance submission) or reexamination (post-grant proceedings). Post-grant proceedings include post-grant review and inter partes review. It was shown by interviewees that the post-grant review was newly made where anyone can challenge patentability within nine months after registration of patents. The inter partes review is a procedure to challenge the validity of patent claims based on prior arts after a nine-month window of eligibility for post-grant review. These preissuance and post-grant proceedings were strengthened under the AIA. The first interviewee remarked that the “number of patent litigations in 2012 was almost double the number in 2006. The courts system will be paralyzed soon in this trend. The new proceedings in USPTO will replace fact-finding proceedings at a trial court. ... They will hire professional administrative judges.”

The third interviewee emphasized that these proceedings to intensify patent quality are an effort to grant patents to real innovations over prior arts. He added, “We are in too much pro-patent era. We grant patents too easily.” The fourth interviewee stated that this effort to eliminate poor-quality patents intends to make the U.S. patent system function well. However, he added that it is disadvantageous for small businesses investing on R&D and patents.

#### **(6) Change of Fees for Patent Service, and (9) Governmental Funding Policy for Patent and Trademark Office**

Before the AIA, Congress had authority to set patent fees. It is said that AIA the provides new authority for the director of the USPTO to set or adjust, by rule, any patent fee established under Title 35, as long as the aggregate revenue recovers the USPTO's aggregate estimated costs for patent-related services. The new fees include a 50 percent reduction for small entities and a 75 percent reduction for micro-entities for filing, searching, examining, issuing, appealing, and maintaining patent applications and patents, whereas there is a 15 percent increase in all fees for other entities. This is an outcome of the USPTO's new authority to set patent fees as given by the AIA.

The first and second interviewee discussed an aspect of empowering the USPTO by endowing fee controls. The third and fourth interviewees granted that a reduction in fees for small entities is beneficial. However, the fourth interviewee pointed out that attorney fees for patent applications are still burdensome for small entities, so it is still difficult for them to win the race to file patent applications.

On the other hand, as a government funding policy to USPTO, the AIA established in Section 20 that if USPTO fee collections in a fiscal year exceed the amount appropriated to the office for that fiscal year, the fees collected in excess of the appropriated amount shall be deposited in the USPTO Fee Reserve Fund. However, it is unstated that the USPTO is allowed by Congress to use the reserved money, which was a topic of severe debate in the process of legislating the AIA that failed to be enacted. Many people in the patent community, such as the American Intellectual Property Law Association (AIPLA), Intellectual Property Owners Association (IPO), and the USPTO, believe that the USPTO needs to use the money that it earned.

The first interviewee was concerned that the USPTO is not likely to use a significant amount of user fees and send back to the U.S. Treasury as it has been. In this situation, USPTO is making an effort to use that money to increase the quality and speed of patent examinations. The second, third, and fourth interviewees agreed that it's for the USPTO to use the money it earned for its improvement. The fourth interviewee said this money would be used mostly for strengthening reexamination of the USPTO and removing inefficient or ineffective processes in courts.

#### **(7) Supplemental Examination**

Under the AIA, any defective information improperly or wrongly considered in the previous examining prosecution of the patent application can be remedied by correction afterward through the “supplemental examination.” Patentees will prevent their patents from being unenforceable due to procedural deficits. The first interviewee offered an example. After the AIA, patentees can submit an Information Disclosure Statement (IDS) after registration until opening litigation on patent infringement, which was a frequent method of patent litigation incapacitating patented rights under the name of “inequitable conduct.” However, this will not exonerate liability for criminal conduct such as fraud or perjury, if included in the misrepresentation. The second interviewee pointed out that this new procedure is to reduce the courts’ burden where most patent litigators raise the “inequitable conduct” issue and receive unpredictable decisions from the courts. He added, “It is difficult to prove the state of mind of people whether they were on purpose ... It is so wasteful to track down mountainous material to discover proofs. And it is not much wrongdoing to nullify all efforts of applicants.” The third

interviewee explained that this new procedure is to unburden applicants by giving them a chance to fix procedural deficits before they appear and have to prove their unwillingness in court later. The fourth interviewee explained that the supplemental reexamination was an effort to remove inefficient or ineffective processes in litigation.

#### **(8) Best-Mode Requirement**

The written description requirement for patent applications is regulated by 35 U.S.C. §112: “the written description...shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention.” The third interviewee explained that applicants should not intentionally omit any best mode of the invention in the written description at the time of filing. Violation of this requirement was grounds for rejection by the USPTO and grounds for invalidation in court. Under the AIA, however, the violation is no longer grounds for invalidation in court. The best-mode requirement is a good instruction to applicants in light of patent publication. However, he added that the standard is too subjective to be judged efficiently and correctly. It is unjustifiable to burden applicants that might not be proven at great expense on discovery in court. The first and second interviewees understood this to mean it would unburden courts by empowering the USPTO, whereas the third and fourth interviewees took this change to mean it would unburden applicants by removing inefficient or ineffective processes.

## **2. Focus Group Interview**

Table 3 summarizes key points of the focus group interview, which included four patent professionals. At the beginning, the participants were careful to avoid expressing their opinions. However, as time passed, they felt comfortable and relaxed enough to

offer their thoughts more freely than the individual interviews, possibly because they were stimulated by others' opinions. Nonetheless, their description of ideas were less organized and detailed due to their limited opportunities to speak given the format of the focus group.

Table 3 Responses of Focus Group Interviewees about Ideological Goals of the AIA

Features of the AIA	Focused Group interview
(1) First inventor to File	<ul style="list-style-type: none"> <li>– Violation of constitutional clause on inventor's right vs. "inventor" is not just the first inventor but also the first inventor who applies for disclosure.</li> <li>– To assist large businesses with a gesture of balancing small businesses.</li> <li>– To renovate the outdated USPTO and save the U.S. patent system in a crisis of backlogs.</li> <li>– To harmonize the U.S. patent system with the rest of world as an unavoidable choice to hold the U.S. hegemony of intellectual property market against East Asian countries and the European Union.</li> <li>– To increase certainty of the U.S. patent system by changing from a subjective to objective standard.</li> </ul>
(2) Inventor's oath/declarations (Substitute Statement)	
(3) Defense to infringement based on prior commercial use	
(4) Post-grant review proceedings (incl. EPR, IPR)	
(5) Preissuance submissions by third party	
(6) Change of fees for patent service	
(7) Supplemental examination	

(8) Best mode requirement	<ul style="list-style-type: none"> <li>– To make U.S. patents strong and make the U.S. patent system sound and useful.</li> </ul>
(9) Governmental funding policy for Patent and Trademark Office	<ul style="list-style-type: none"> <li>– To encourage entrepreneurs out of their garages with timely made patents. (Entrepreneurs are not simply small-sized corporations or patent trolls but innovators.)</li> <li>– To create jobs and grow the national economy</li> </ul>

At the beginning of the discussion, one participant raised the unconstitutional issue of the AIA. The point was that the AIA may infringe inventors’ constitutional rights because the Constitution defines “authors and inventors” as beneficiaries of the exclusive right to their respective writings and discoveries. The attorney zeroed in on the word “inventors” in the constitutional clause for debate. First, she argued that under the AIA an inventor may not be granted a patent if an inventor who independently devised the same invention files a patent application in the USPTO earlier than the other inventor. Second, applicants may push forward patent prosecutions against the inventor’s will under the AIA. Therefore, it is unconstitutional.

Another party, who opposed this opinion, rebutted her arguments. First, the meaning of “inventors” in the constitutional clause does not necessarily indicate the first inventors. The opposing party asserted that the inventors who independently devised the inventions and file patent applications to disclose and contribute to society may be granted a patent for it by law. Second, applicants can file substitute documents for the

inventor's oath or declaration only if they cannot contact inventors after intensive due diligence. In the meantime, a company named MadStad Engineering Inc. filed a complaint claiming the unconstitutionality of the AIA. In May 2013, the court dismissed the plaintiff's challenge to the first-inventor-to-file provision of the AIA for lack of standing.

In the middle of the discussion, several arguable points were brought up. One person emphasized the AIA was supported by lobbyists for large businesses and made for their sake with a little gesture of balance to small businesses. Another asserted that the AIA was harmonizing patents with the rest of world, which was unavoidable if the United States were to hold its hegemony of the intellectual property market against East Asian countries and European Union. The other participant insisted that the AIA was an effort to renovate the outdated USPTO and save the U.S. patent system from its backlog crisis. Many poor-quality patents had been approved over the decades. It is because technology develops drastically and advances into new fields that the USPTO fails to set consistent and reliable patentability standards, so that examiners and courts struggle with so many patent applications. He asserted that this is why the USPTO tried to retain the Fee Reserve Fund, cross-check patent examinations by expanding third-party participation, and allow curing defects in patent prosecution before going to court.

One participant emphasized that the AIA is a change from subjective to objective standards. Finding the first inventor is no longer a practical way to protect inventors' rights, according to statistics from the USPTO. Finding the first filer is a more objective and certain way. The AIA opened the door wide to improve patent quality by reinforcing

examinations of patentability and creating a chance to fix procedural deficits that might make patents unenforceable. As a result, the improvement of patent quality will increase to a level of certainty in enforcing patent rights. Elimination of the best-mode requirement in patent litigation will decrease the uncertainty of patent enforceability. Applicants can finish filing patent applications even when inventors disappear. All conditions in the AIA could be interpreted in the same context and explained by the word “certainty.” That certainty will make the patent system sound and useful.

Another participant emphasized that the AIA encourages entrepreneurs out of the garage with timely made patents. Venture capitalists tend to invest on entrepreneurs when the entrepreneurs have prospective technologies covered by patents and when it is certain that they can exclude others from following up easily and rapidly. The AIA is an effort to shorten the lead time to register patents by reducing the backlog of patent applications and to certify the validity of the patents granted.

Meanwhile, another participant raised an issue on the definition of “entrepreneurs.” She argued that people may think of only small entities when it comes to entrepreneurs. However, this is misleading. Entrepreneurs differ from small-sized corporations or patent trolls. The patent system endorses innovators who give away innovations and enable people to make and use the invention. This is why society needs to give special rights to them. They create value in society and pay taxes when they succeed commercially. Small-sized corporations are not entrepreneurs if they cannot produce innovations.

Furthermore, as the pro-patent trends were rampant, a large portion of patents stayed on paper, and the patent owner tried to make money with them by threatening

others. Most patents in this category are poorly written with excessive legal tactics and without enough content for the PHOSITA to read and utilize. Most patent owners in this category are driven purely by monetary gain. People who invest money on making, buying, and gathering patents do not want to implement businesses using those technologies, but just want to generate high profits. Therefore, patent trolls are not entrepreneurs. When real entrepreneurs are encouraged in society, jobs are created and the economy grows.

### **Conclusion I: Individual and Focused Group Interviews**

During the individual interviews, the first interviewee, the former examiner in the USPTO, and the second interviewee, the former patent director in a global company, believed that the AIA is an effort to harmonize the U.S. patent system with rest of the world to increase the efficiency and certainty of U.S. patents. Although the United States had kept a theoretically reasonable system to protect inventors, it is outdated in two critical aspects: the patent environment of the 21st century requires (1) legal stability to enhance the value of U.S. patents on the international stage, and (2) more efficient and effective procedures in the USPTO and courts. The AIA is an attempt to empower the USPTO to accomplish these goals. In short, both of the first and the second interviewees mostly understand that the goal of the AIA is to emphasize and recover public interest in the patent system due to the disruption caused by excessive pro-patent trends for private interests.

The third interviewee, a patent attorney working for universities, and the fourth interviewee, a patent attorney working for small businesses, said that goal of the AIA is

to increase legal stability and efficiency or effectiveness of procedures. Granted, the AIA drastically decreased USPTO fees for small entities. However, they believed small entities such as universities, small businesses, and individual inventors were still at a disadvantage in the race to file patent applications and intensifying patent qualities due to the lack of funds. Moreover, the AIA unburdens applicants by deregulating procedural duties. However, this includes a risky part that may deteriorate inventorship of inventors in duties under employment by solidifying applicants' place instead. In short, both of them in many ways understand that the AIA is to liberate and deregulate the patent system so that large capital is advantageous.

The atmosphere of the focus group interview was different from the individual interviews. Focused interviewees looked relaxed and showed flexible attitudes. Sometimes they looked like they forgot they were in an interview. As a result, fresh arguments arose that were never mentioned in individual interviews. In the beginning, I could sense some cynicism or sarcasm. The first argument was that AIA's first-inventor-to-file system was unconstitutional and in violation of the inventor's rights clause. Actually, the response was a little beside the point of the topic, "ideological goals of the AIA," that I brought up for conversation. The second argument was that the AIA was designed to assist large businesses with a little gesture to help small businesses. The third argument was like "of the USPTO, by the USPTO, and for the USPTO."

In the middle of conversation came common responses such as "reducing backlog of patent applications," "global harmonization," and "increasing certainty." However, their remarks were deep. For example, someone pointed out that global harmonization of

the U.S. patent system is an unavoidable choice to maintain the U.S. hegemony of the intellectual property market against East Asian countries and European Union.

In the last part, participants tended to wrap up ideas with what they had learned from others or had seen in the media. These ideas were naturally aligned with what key players of the AIA remarked, such as “encourage entrepreneurs out of the garage with timely made patents” and “create jobs and grow the national economy.”

### **Methodology II: Intertextual Analysis**

Intertextual analysis was used to qualitatively identify positions of writers or speakers behind the text. The inference of meaning can be made by relating the text to some other frame of reference or its dialogue. As Bazerman (2004) remarked, because we create, distribute, and select words out of “the sea of language we live in,” intertextuality is useful to examine how writers or speakers use words and position them in relation to other words.

I gathered data of key players’ actions from open sources such as Web archives of governmental organizations. It was not difficult to trace what they did and what they said because the key players in the AIA are all currently working public figures. For example, from the USPTO Web archive, I found all press releases, testimonies, speeches by former USPTO director David Kappos. It was the same with President Barack Obama’s sources found in White House Web archive, and with Justice Kennedy’s sources in the U.S. Supreme Court Web archive. Data for Lamar Smith and Patrick Leahy was found in the U.S. House of Representatives Web archive and the U.S. Senate Web archive,

respectively. Once all data was listed in time sequence, I put the puzzle together to grasp how the key players' remarks were interconnected.

## **Findings II: Intertextual Analysis**

David Kappos was a key person who advised the Obama administration and drove Congress to pass the AIA. Putting it all together, his testimonies in the House of Representatives show the goals of patent reform.

First, David Kappos delivered mission statements of the USPTO. In his 2010 congressional testimony for the USPTO FY2011 budget request, he remarked, "The USPTO's work in fostering innovation and bringing patented goods and services to market is a crucial driver of job creation and economic recovery." To be specific, to foster innovation and bring it to market, he added that the president's budget request would support a five-year plan designed to enable the USPTO to achieve the strategic objectives:

- A significant reduction in patent pendency periods and the existing patent inventory backlog
- Improvement in patent quality
- Enhanced intellectual property (IP) protection and enforcement
- Global IP policy leadership
- Investment in information technology (IT) infrastructure and tools to achieve a 21st century system that permits end-to-end electronic processing in patents and trademark IT systems.

Second, in his House testimony on January 25, 2011, Kappos clarified this in his speech, “How an Improved U.S. Patent and Trademark Office Can Create Jobs.” His point was that innovation is a principal driver of economic growth and job creation in the United States, and intellectual property delivers that innovation to the marketplace. Therefore, the empowering the USPTO is to create jobs by serving America’s innovators and granting the patents and trademarks to secure investment capital, build companies, and bring new products and services to the marketplace.

Third, on March 30, 2011, Kappos testified in the House regarding the administration’s views on the America Invents Act. He emphasized that the AIA would ultimately improve American competitiveness, economic prosperity, and job growth by establishing effective and efficient patent procedures—evaluating patent applications more quickly and improving the quality of issued patents—and reducing litigation uncertainties and costs.

Fourth, Kappos advocated for the USPTO’s confidence on positive views of the patent reform. The first one was that the first-to-invent system would benefit patent owners in all entities, not just the large entities. He showed statistics showing that this is unfounded because only 25 patents out of 3 million applications filed in the past seven years were granted to small entities that were the second inventor to file but proved to be the first inventor in the end. The total number of interference cases that sought the true first inventor was seven out of all 441,637 filings in 2007, and only one out of seven cases was won by small entities. The statistics show that finding the true first inventor is an extremely ineffective process and that small entities are not at an advantage. With this

data, David Kappos (Quinn, 2009), the previous director of the USPTO, pushed forward the AIA in the 14th Annual Inventors Conference by stating, “We already essentially have a FITF system.” Furthermore, the cost of proving oneself as the first inventor is prohibitive to small business and independent inventors at approximately \$400,000 to \$500,000 in legal fees to engage in the process known as “interference proceedings” to determine who invented first. On the other hand, it costs only \$110 for a provisional application to guarantee the first inventor’s right without risk of subsequent disputes. Secondly, he advocated that the USPTO’s fee-setting authority would permit the USPTO to engage in multiyear budget planning and significantly reduce problems of long waits and the backlog of patent applications. Third, he showed confidence against some questions about the ability of the USPTO that post-grant review proceedings and preissuance submissions of prior arts by third parties would be effectively implemented by the USPTO to increase issued-patent quality. Fourth, he supported removal of some litigation-related issues, such as damage assessment, determination of willfulness, and appropriate venue consideration, which had not been settled in the House between groups of pros and cons.

Undoubtedly, President Obama played a role as a superior authority leading the administration’s view delivered by the director of USPTO, David Kappos. It was President Obama who appointed Kappos to the position, knowing he is an activist and strongly supported patent reform. President Obama emphasized job creation and economic growth as ultimate goals of the AIA when he made his statement while signing

the America Invents Act (AIA) bill at the Thomas Jefferson High School for Science and Technology in Alexandria, Virginia, on September 16, 2011.

I'm also announcing even more steps today that will help bring these inventions to market faster and create jobs. Here in America, our creativity has always set us apart, and in order to continue to grow our economy, we need to encourage that spirit wherever we find it.

Again, the president remarked in a statement about the AIA through the White House representatives on that day, "This long-overdue reform is vital to our ongoing efforts to modernize America's patent laws and reduce the backlog of 700,000 patent applications—which won't just increase transparency and certainty for inventors, entrepreneurs and businesses, but help grow our economy and create good jobs." It is notable that he considered specific ways the AIA or the AIA's lower level of goals to achieve the goals of reducing the backlog of patent applications and increasing the transparency and certainty of the process.

In the statement, he detailed the specific ways, which can be summarized to three categories. The first is to speed up administration of patent applications by reducing waiting time and increasing processing speed. The second is to reduce social costs induced by abuse of process in the patent system: production of poor-quality patents and misuse of patent litigation. The third is to harmonize the process of the U.S. patent system with the rest of the world.

Compared to Kappos's testimony in the House on March, 2013, the first-inventor-to-file system was euphemistically reflected in the third category, "patent harmonization." Second, asserting the necessity of the USPTO's fee-setting authority was translated into the first category, focusing on speeding up the process of patent applications in the

USPTO. Third, his confidence about post-grant review proceedings became the foundation of reducing social costs based on the abuse of litigation of poor quality. Fourth, some litigation issues that he supported removing were actually excluded from the AIA and the way of achieving its goals. It is notable that most of Kappos's leading ideas were reflected in the Obama administration's version of the patent reform AIA.

Senator Patrick Leahy consistently tabled the patent reform. In his single short statement in the Senate, he mentioned the words "innovation" 16 times, "reform" 14 times, "economy" or "economic" 11 times, "job" 10 times, "quality" 10 times, and "bipartisan" four times. A key message was "a balanced and efficient intellectual property system that rewards invention and promotes innovation through high-quality patents is crucial to our nation's economic prosperity and job growth."

Likewise, Senator Leahy summarized that the bill included legislation as a means to achieve the biggest goals of economic growth and job creation: improving operations at the USPTO and the quality of patents issued; providing more certainty in litigation; moving the nation's patent system to a first-inventor-to-file system; providing the PTO with fee setting authority to work through its backlog.

He also discussed how the AIA was aligned with the courts and the Obama administration. He said the courts already addressed issues by opening new case laws and the Obama administration supported these efforts based on research from the Department of Commerce (2010). The research found that these patent reforms would create jobs without adding to the deficit by including legislations that improve operations at the USPTO and the quality of patents issued; provide more certainty in litigation; move the

nation's patent system to a first-inventor-to-file system; provide the USPTO with fee-setting authority to work through its backlog.

By the way, President Obama saved his breath about patent trolls before the AIA faced the second phase, when he officially confronted the patent trolls. President Obama called on Congress to pass additional patent-reform legislation. In his 2013 State of the Union address, President Obama called on Congress to pass additional patent-reform legislation by stating that “the AIA only went about halfway to where we need to go.” Congress and the states had participated in the agenda. He called for involvement from more stakeholders to build consensus on “smarter” patent laws. He castigated patent trolls, saying they don't actually produce anything but are “just trying to essentially leverage and hijack somebody else's idea and see if they can extort some money out of them.”

Justice Kennedy played an important role in promoting passage of patent reform from the anti-patent troll perspective. In *eBay vs. MercExchange*, while the decision primarily concerns itself with the proper test for injunctions, Justice Kennedy's concurrence clarified concerns on the controversial topics of patent trolls and business-method patents where the patent system seemingly failed in its purpose.

An industry has developed in which firms use patents not as a basis for producing and selling goods but, instead, primarily for obtaining licensing fees. . . . For these firms, an injunction, and the potentially serious sanctions arising from its violation, can be employed as a bargaining tool to charge exorbitant fees to companies that seek to buy licenses to practice the patent...When the patented invention is but a small component of the product the companies seek to produce and the threat of an injunction is employed simply for undue leverage in negotiations, legal damages may well be sufficient to compensate for the infringement and an injunction may not serve the public

interest...In addition injunctive relief may have different consequences for the burgeoning number of patents over business methods, which were not of much economic and legal significance in earlier times. The potential vagueness and suspect validity of some of these patents may affect the calculus under the four-factor test..

The justices decided it is inadmissible to allow patent trolls an abusive grant of injunctive relief. Therefore, they included a four-prong test for injunction, “plaintiff has suffered irreparable injury,” which generally cannot be satisfied by nonpracticing entities such as patent trolls. When Congress was in gridlock over proposed patent-reform legislation, Justice Kennedy ushered their actions by updating case law against the potential threat of both patent trolls and business methods to innovation.

### **Conclusion II: Intertextual Analysis**

The AIA is the fruit of the efforts pro-AIA players made to fix problems in the U.S. patent system in the 21st century. Ideological goals of the AIA were implicated and delivered by utterances and statements of key players of social actions. Legislators such as Lamar Smith and Patrick Leahy tried to reflect the wishes of the majority in the patent community and industries by collecting their opinions. Judges such as Anthony Kennedy laid the foundation for patent reform by ruling patent litigation in consideration of the needs of the times. Most of all, President Obama and USPTO Director David Kappos spearheaded patent reform and successfully pushed it forward.

Although the AIA is not the end of patent reforms and is a result of compromise, its goals were delivered to the public clearly with the help of the media and the controversy it stimulated. For this reason, words of key players drawn from textual and intertextual analysis were not different from words professional patent practitioners made

during their interviews. In other words, words of key players like “entrepreneurs,” “creating jobs,” “economic growth,” “patent harmonization,” “USPTO,” and “patent trolls” had been said frequently. Anyhow, this textual and intertextual analysis was useful to clearly define goals that the AIA’s key players had claimed to advocate.

On the other hand, information drawn from interviews was much more rich and detailed to fully estimate the ideological goals of the patent reform. Individual interviews were advantageous in gathering factual information about what the patent reform was and how it will work in the U.S. patent system. Focus group interviews were advantageous in drawing something unexpected but useful to understand how the patent system and society actually work together.

### **SECTION THREE: THE GENRE OF PATENT APPLICATIONS RHETORICALLY SITUATED IN THE 21<sup>st</sup>-CENTURY U.S. PATENT SYSTEM**

It is investigated in what ways the genre of “patent application” was rhetorically situated in the 21st-century patent system of the United States. The situation of the genre was analyzed by discovering elements of rhetorical situations of theoretical frameworks: Aristotle’s rhetorical triangle, Gorrell’s Venn diagram, activity systems, and genre systems.

#### **Aristotle’s Rhetorical Triangle and Gorrell’s Venn Diagram**

In the 21st century, assignees showed up conspicuously as rhetors in addition to inventors, who received all inventors’ rights for patent applications in prosecution and

registration in USPTO. Patent trolls affected this most as a representative group of assignees. Patentability standards on written description of patent applications went up and down to meet the needs of the times. As pro-patent keynotes signify from the 1980s to the 21st century, deregulation on patent quality accelerated. Exigency to invent first and prove it was slackened by introducing grace periods and ways of obtaining priority dates for the invention. In this situation, patent trolls came to roam the ground of the patent system at will. To diagram the change of rhetorical situation, a hybrid type of Aristotle's rhetorical triangle and Gorrell's Venn diagram is shown in Figure 13. All elements of the fundamental frameworks are depicted.

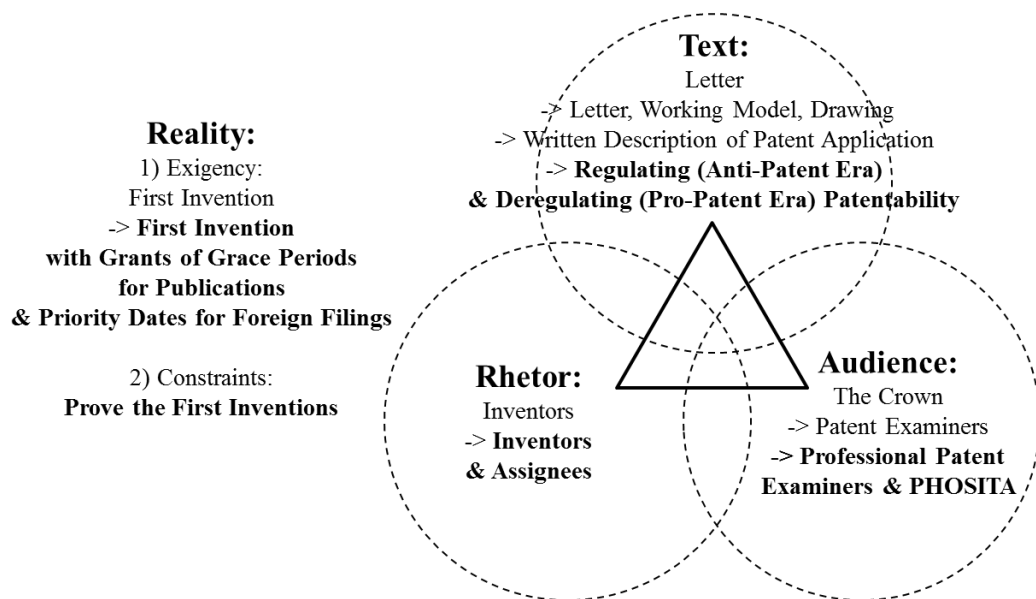


Figure 13 Rhetorical situation of patent applications of the 21st century (before the AIA)

## **1. Rhetor: Inventors and Assignees**

Inventors were traditionally rhetors of patent applications under the first-to-invent system. However, after the Second Industrial Revolution, when capital-intensive enterprises emerged, assignees of patents started to be separate from inventors. In the 21st century, products or services became too technologically complicated to be designed by sole independent inventors. The majority of patent applications were being filed by corporations assigned by duty inventors, which are no longer owned by inventors but by companies according to employment contracts.

One surprising feature of the 21st century patent system was the appearance of new types of assignees called patent trolls. The term “patent troll” was coined by Peter Detkin, a former assistant general counsel of Intel (Sandburg, 2001), and describes a person or company who does not create goods or services but only enforces patented rights against entrepreneurs or businesses to amass large sums of money. Patent trolls, mostly having patented claims with a high probability of invalidation or with minor features from innovation perspectives, blackmail enterprises or businesses creating goods and services. In other words, they buy up inventors’ rights in inventive steps, prosecuting steps, or registration-maintaining steps and become assignees of those patents and patent applications. Then they aggressively find ways to reap income from their investments.

The burden of manufacturers due to gridlocked patents reached the climax as nonpracticing entities (NPE), the so-called patent trolls, started in full swing in the 2000s. According to Bessen and Meurer (2012), the direct costs related to patent trolls amounted to \$29 billion in 2011, including licensing fees and lawyers’ bills. This calculation does not include indirect costs from “diversion of resources, delays in new products, and loss

of market share.” Considering the total U.S. spending on R&D in 2009 was \$247 billion, \$29 billion is a big enough figure to suppress R&D investments.

According to Chien (2013), patent litigations have increased from 2,450 cases in 2006 to 4,700 cases in 2012. Patent litigation issued by nonpracticing entities (NPEs) increased from 15% to 62% in the same time period (Table 2). Here, NPE is defined as an entity that does not have the capability to design, manufacture, or distribute products with features protected by the patent.

Table 4 Proportion of Patent Cases Brought by NPE

Year	Cases	NPE(%)	Non-NPE(%)	Year	Cases	NPE(%)	Non-NPE(%)
2006	2450	15	81	2010	2515	29	71
2007	2475	23	77	2011	3350	45	55
2008	2375	25	75	2012	4700	62	38
2009	2300	27	73				

## 2. Audience: Professional Patent Examiners and PHOSITA

The audience for patent applications was still professional patent examiners and PHOSITA. However, it was PHOSITA who shed new light on the audience of patent applications because the quality of patents granted by the USPTO had deteriorated significantly due to basic pro-patent conditions and patent trolls. The quality of patent applications can be measured by figuring out how much the inventions contributed to the

innovation of science and technology. The contribution can be achieved by disclosing inventions in details to the extent PHOSITA can implement the inventions in best mode.

In Jefferson's time, inventions were something that worked in effect. Inventors must show a functioning invention by demonstrating it or submitting models to patent examiners, with some exceptions, such as when working models were practically impossible to make in nature. Working models were required from the start until 1880. Some inventors still willingly submitted models at the turn of 20th century to support their patent applications. However, as written descriptions and schematic drawings completely substituted the working models, it became difficult to discriminate high-quality patent applications showing enough practicability to be useful knowledge for PHOSITA.

Many efforts have been made for several years before the Patent Reform Act was issued in 2005, a prior form of the AIA. One foundational work was a 2003 Federal Trade Commission report in which data were gathered from hearings from February to November 2002. The hearings took place over 24 days with more than 300 panelists gathered from the business sector, independent-inventor communities, patent and antitrust organizations, and scholarly groups. Participants expressed concerns about questionable patents that had increased social costs by "unwarranted market power," preventing "competition and innovation that otherwise would benefit consumers." They also unanimously expressed that the USPTO lacked the funding necessary to address patent quality issues. The Patent Public Advisory Committee stated that the USPTO faced a crisis in funding that seriously influenced the quality of issued patents. Patent

applications had increased 10 percent per year: 1,000 cases each working day for 3,000 examiners. The commission finally offered 10 recommendations, including legislation of post-grant review (PGR), adequate funding to the USPTO, and abolishing exceptions against patent application publication (FTC, 2003).

The National Research Council's recommendation (Merrill, 2004) included improving patent quality granted by the USPTO. It stated that to improve performance of the USPTO, the current USPTO budget should be expanded to accomplish these objectives, let alone to finance an efficient open review system. The budget included funding for additional resources to hire and train examiners and fully implement an electronic processing capability. Moreover, it was suggested that Congress should consider legislating a proceeding for third parties to challenge patents after their issuance in regard to novelty, nonobviousness, utility, disclosure, or enablement, the proceedings of which would reduce time and litigation cost.

### **3. Text: Regulating and Deregulating Patentability**

Text of patent applications developed since the late 20th century in two contradictory ways. First, during the anti-patent era, roughly from the 1890s to the 1980s, the patentability standard was intensified from the perspective of written descriptions (35 USC §112), novelty (35 USC §102), and nonobviousness requirements (35 USC §103).

For this reason, writing patent applications became professionalized compared to previous days when submission of a working model with a brief description satisfied the requirements. Patent attorneys typically prepare applications because skillful legal

writing has been required for patent examinations. Patent applications must include specific descriptions of the invention in terms of technological and legal aspects, drawings showing all elements of claims, and claims.

To be specific, the economic depression in 1890 resulted in the Sherman Antitrust Act (Shlaes, 2013), which forbade business activities from disrupting competition in the marketplace. Although this act still provides a useful basis to limit cartels and monopolies in the 21st century, it originally came from negative views on patent system drawn from an economic depression. Then the patent system underwent a series of dark ages from the Great Depression and World War II. Courts tried to limit enforcement of patents in the private sector. For example, in *Cuno Engineering vs. Automatic Devices Co.*, the Supreme Court held that an invention must “reveal the flash of creative genius, not merely the skill of the calling” to be patentable. After World War II, the basic structure of present patent law was established in 1952. The statute codified case laws of the past century, including novelty and nonobviousness of the invention, infringement, means plus function claims, and time limits on reissue of a patent with broadened claims.

On the other hand, subsidiary legal documents started to be incorporated in patent applications. For example, the “inventor’s oath or declaration” form must be submitted to confirm that the applicant is the original inventor of the claimed invention. An “information disclosure statement” must be submitted to disclose prior art or background information that may be relevant to the patentability of the invention. If a patent applicant knowingly or intentionally fails to submit prior art to the USPTO, then any patent later issued from the patent applications may be declared unenforceable as a penalty.

Second, during the second pro-patent era, from the 1980s to the 2000s (the first era is often said to be roughly from the 1790s to the 1890s), the patentability standard was lowered from the perspective of patentable subject matter (35 USC §101), written description (35 USC §112), novelty (35 USC §102), and nonobviousness requirements (35 USC §103). One distinguished area was the patentable subject matter. As advances of science and technology grew, patentable subject matters have been expanded to new fields. To be specific, patents have been traditionally banned for methods of curing the human body. However, this became patentable in 1972 (*Bernhard Joos vs. Commissioner of Patents*). Mathematical algorithms were determined to be patentable in the form of tangible media in 1981 (*Diamond, Commissioner of Patent and Trademarks vs. Diehr and Lutton*). Likewise, computer software was deemed patentable in the form of tangible media in 1991 (*International Business Machines Corporate vs. The Commissioner*). Business methods became patentable subject matter when combined with mechanical or electronic system (*Welcome Real-Time SA vs. Catuity Inc.*).

Another area was written description, novelty, and nonobviousness of patent applications, of which validity of patent applications is still mainly qualified:

- 35 USC §102 (a), Novelty over prior arts - A person shall be entitled to a patent unless (1) the claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention; or (2) the claimed invention was described in a patent issued under section 151, or in an application for patent published or deemed published under section 122(b), in which the patent or application, as the case

may be, names another inventor and was effectively filed before the effective filing date of the claimed invention.

- 35 USC §103, Non-obviousness to the person having ordinary skills in the art - A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.
- 35 USC §112 (a), Appropriateness of written description - The written description shall contain a written description of invention, and of the manner and process of making and using it in such full, clear, concise, and exact terms as to enable any person skilled in the art (PHOSITA) to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the invention of carrying out his invention.

Admittedly, it seems difficult to expect perfect patent examinations in principle, because examiners cannot search and review all prior publications in the world without missing a single important document. Although electronic data systems have been developed and the patent examiners cooperate with professional search companies, it is still difficult to expect flawless examinations because the patent examination is not merely a data-searching task but an appraisal effort dealing with qualitative standards such as novelty, nonobviousness, and written description.

However, statistics of patent-invalidation cases in district courts remind us of the fact that many poor-quality patents are being produced in the current patent system. Smyth (2012) presented that at least one patent claim from 243 of 283 cases was determined invalid by a federal district court between 2007 and 2011. This means that 86

percent of patents granted by the USPTO include at least one invalid claim, as shown in Table 4 (Smyth, 2012).

Table 5 Patent Cases in District Courts Involving Validity, by Year

Year	2007	2008	2009	2010	2011	Total
Cases where claims in patent held invalid	46	49	54	49	45	43
Cases where claims in patent held valid	12	8	11	5	3	9
Percent where claims in patent held valid	20%	14%	17%	9%	6%	14%
Total	58	57	65	54	48	283

On the other hand, due to the pro-patent trend in the 21st century, the number of patent applications filed in the USPTO has passed 500,000 cases per year, and the number of patent infringement allegations filed in courts passed 3,000 cases per year (Quinn, 2013). Putting it together, it is worth saying that the patent system, originally designed to promote innovations, in some ways obstructed innovation with overflowing numbers of patents, mostly of poor quality.

University of Michigan law professors Michael A. Heller and Rebecca S. Eisenberg (1998) discussed this unexpected effect. They emphasized that the privatization of biomedical research “promises to spur private investment but risks creating a tragedy of the anti-commons through a proliferation of fragmented and overlapping intellectual property rights.” Heller (2008) later described an economic

depression of the 21st century with a “gridlock” mechanism: too much ownership of patents deteriorates a free-market system by obstructing the flow of economic goods. When too many people own pieces of one thing, cooperation breaks down, wealth disappears, and everybody loses. For example, he stated that the “gridlock” of patented rights is why useful drugs for Alzheimer’s disease sit on the shelf and more than 90 percent of airwaves are still unused in the United States.

In the same context, James Bessen and Robert Hunt (2007) suggested that overproliferation of software patents are obstructing software R&D and slowing down innovation. This retarding effect is more serious in the field of high-tech products composed of thousands of elements of technology covered by featured claims scattered to thousands of patents for a single item. The blockage to innovation often originates from immense royalty expenses to a large number of patent owners of each piece of fragmented technology.

In 2004, the National Research Council, organized by the National Academy of Science offered seven recommendations for the 21st-century patent system (Merrill, 2004). More than 150 people assisted in the research committee’s study, conducting and reporting on research, speaking at conferences, presenting views at open meetings, and providing other useful information through communication with staff. The committee also benefited from nine diverse groups of scholars in different disciplines to conduct a series of policy-related empirical studies. The following are three recommendations out of seven related to patentability standards:

The patent system should open to new technologies allowing flexible treatment within unitary standard. For example, the USPTO should

develop examination guideline for newly patented technologies as it had been done for computer programs, superconductivity, and genetic inventions. Court of Appeals for the Federal Circuit (CAFC) court should encourage the submission of amicus briefs to keep themselves well informed and should include people familiar with innovations in diverse disciplines including non-patent areas. Second, non-obviousness standard must be reinvigorated. For example, it is because Federal Circuit ruling made it difficult to set up obviousness standard against a biological macromolecule claimed by its structure: gene sequence patents... Sixth, in infringement litigation, an accusing party's state of mind such as "willfulness," "best-mode," and "inequitable conduct" is questionable and unpredictable to be proven. Therefore, these rules need to be modified or eliminated to increase certainty of patent dispute.

#### **4. Exigency and Constraints: First Invention (Grace periods & Priority Dates)**

There had been several changes to legal devices that influenced the exigency of the rhetorical situation in filing patent applications, sometimes weakening them and sometimes strengthening them. The first distinctive feature was a grace period for publication before invention date, which was designed to induce early publication of inventions and protect inventors or assignees. The second feature was priority dates of original filing dates in the USPTO as effective filing dates, which was designed to protect U.S. inventors or assignees in the international trade era. Although the second feature looks like a move toward the first filing system from the first invention system, it is not. Inventors could still move up a priority date to an invention date from the filing date, which means the first invention system. For the same reason, the constraints of the rhetorical situation had not changed from proving the first invention to anywhere under the first invention system until the AIA was signed into law.

To be specific, in 1839, a grace period was allowed to a novel patentability requirement. That is, an application could still be filed validly from a novelty requirement

perspective over publication, but only if the filing was made within the grace period of one year after the publication of printed matters made by inventors themselves. In addition, the grace period for public use or sale of inventions was two years after the publication irrespective of whether the sale or use was done by inventors. The grace period was introduced to protect inventors or assignees by weakening the time exigency. However, the two-year grace period was reduced to one year in 1939 because two years is unduly long and a handicap to industry (Boundy and Marquardt, 2010). This is an example of strengthening exigency.

On the other hand, there came more straightforward examples of weakening exigency as filing patent applications in foreign countries became important for international trade of goods and services. In 1887, the United States joined the Paris Convention (Rockman, 2004). Applicants who filed in one of the member countries of the treaty could file in other member countries with an effective filing date of the original filing date. However, patent application filings were required in subsequent countries within six months to gain a benefit; this was changed to one year for utility patents in 1900.

In the 1960s and 1970s, worldwide attention was paid to globalized patent cooperation. The United States joined the Patent Cooperation Treaty (PCT), which came into effect in 1978. Under the PCT, inventors or assignees could file patent applications first in the World Intellectual Property Organization (WIPO), then in any country joined in the treaty having priority date of the first filing.

According to the National Research Council's recommendations for the 21st-century patent system (Merrill, 2004), the United States, Europe, and Japan should further harmonize procedures or standards of patent examinations to reduce redundancy in search and examination in each country so that those countries eventually achieve mutual benefits. Current differences originated mostly from priority date (first-to-invent vs. first-inventor-to-file) and grace period.

### **Activity System and Genre System: Appearance of Capital-Centered Ideology**

Figure 14 is an activity system in the 21st century U.S. patent system. Here, "subjects" correspond to inventors, assignee, and patent examiners. As detailed under the term "patent troll," a remarkable appearance of "assignee" on the stage of the patent system is a unique phenomenon of the 21st century. Large capital investors started to buy up rights of patentable inventions or patent ownerships to exercise the rights against producers of goods or services as justifiable assignees.

"Objects," motives of actions by the subjects, correspond to "patents" and "capital incomes." "Outcome" corresponds to the ideological goal of the community "the United States" to be achieved by objects, which was moved from its position from the center position between author-centered ideology and user-centered ideology to a new horizon of capital-centered ideology. People discovered how to earn money with just some capital investment in patents without taking a long time to make, promote, sell, and gain profits under patent protection.

"Tools" correspond to "patent applications" mediating between the subjects and the objects: what subjects utilize to accomplish the activity. "Community" corresponds to

“the United States of America,” where subjects’ knowledge, interests, stakes, and goals shaped the activity. “Division of labor” corresponds to inventors, patent examiners, judges, and PHOSITA, which is the way the “labor” is divided among participants in the activity.

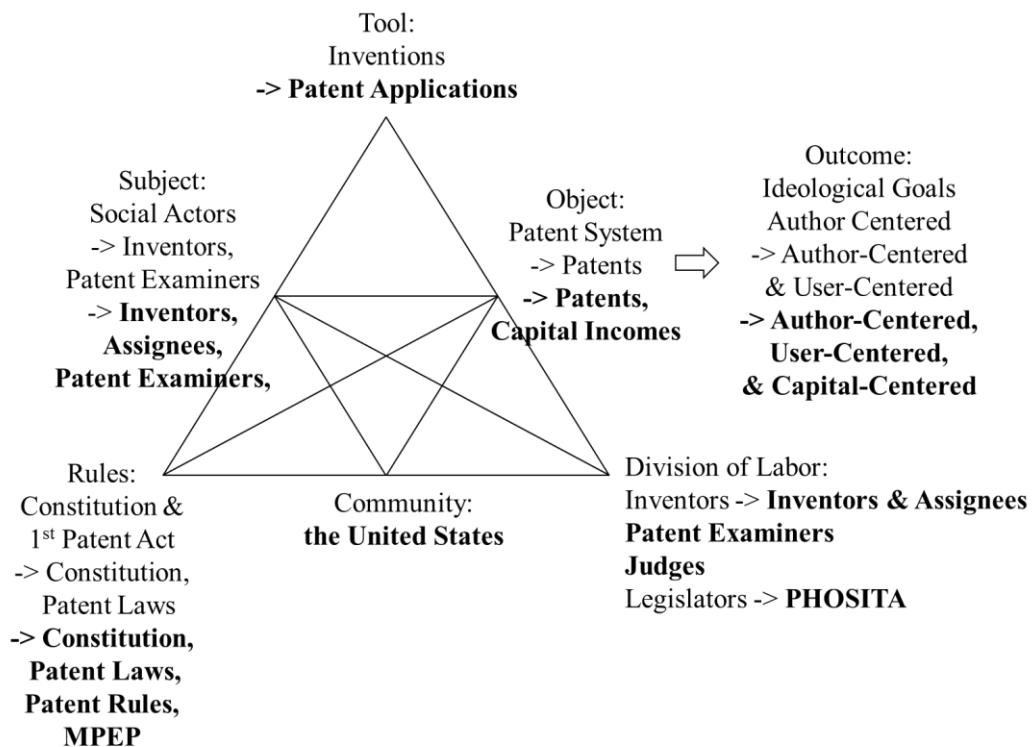


Figure 14 Activity system of the 21st-century U.S. patent system (Before the AIA)

“Rules” correspond to “patent rules,” “MPEP,” “patent laws,” and “Constitution.”

Patent rules are codified in one of 50 titles comprising the U.S. Code of Federal Regulations (CFR), published in 1938 (LLSDC, 2014). Patent regulations are listed in

chapter 1, volume 1, of Title 37 issued by federal agencies of the United States regarding patents, trademarks, and copyrights. On the other hand, the procedural manual for patent attorneys and examiners was first written by two employees of the office and published in 1920 by the Patent and Trademark Office Society, often referred as Wolcott's Manual (PTOS, 2006). Then, the USPTO officially published the first Manual of Patent Examining Procedure (MPEP) in 1948 for three purposes:

The purpose of the manual is three fold, first, to serve as an adequate text for the new Examiners to study, second, to serve as a standard reference work for the examining corps, third, [and] to assist in producing uniformity of practice among all the divisions of the Office.

Figure 15 is a schematic diagram showing the relationship among genre sets, the genre system, and the activity system in the 21st century. One distinctive feature is patent trolls. Subjects corresponding to assignees' patent trolls, other than inventors, patent examiners, judges, and PHOSITA, who bought up inventions and prosecuted patent applications to obtain patents under constitutional law, patent laws, patent rules, and MPEP. However, they sought short-term capital income through transactions or enforcements rather than by producing goods or services using the inventions. Capital-centered ideology was newly put in the outcome of the genre system due to activities of patent trolls.

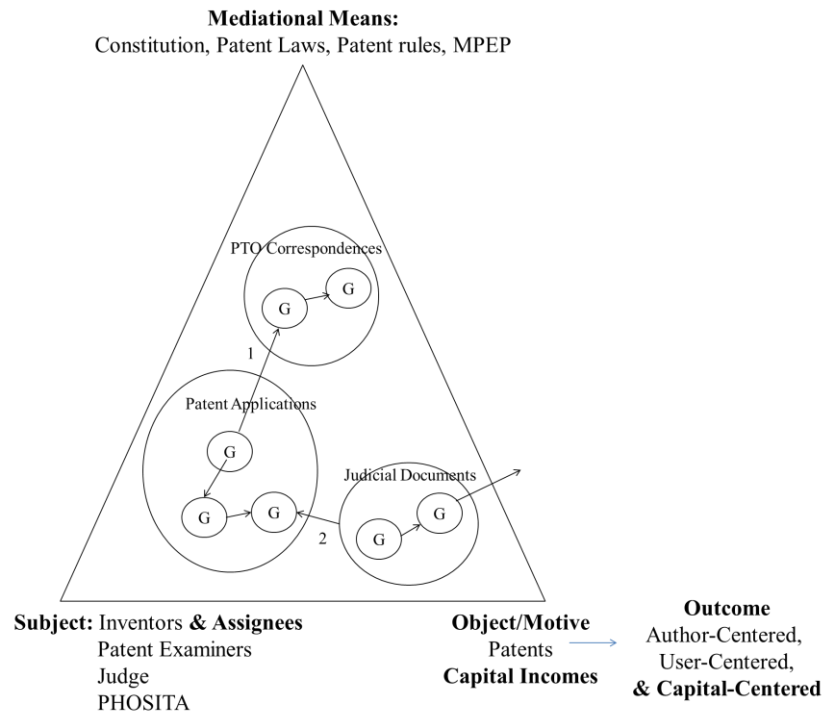


Figure 15 Genre Sets within a Genre System within an Activity System in the 21st  
Century (Before the AIA)

#### SECTION FOUR: IDEOLOGICAL GOALS OF THE COMMUNITY REFLECTED IN THE RHETORICAL SITUATION OF THE GENRE OF PATENT APPLICATIONS

It is investigated in what ways the genre of “patent applications” was rhetorically situated in the 21st-century patent system of the United States after the AIA. The situation of the genre was analyzed by discovering elements of the rhetorical situation of

theoretical frameworks: Aristotle's rhetorical triangle, Gorrell's Venn diagram, activity systems, and genre systems.

### **Rhetorical Situation after the AIA: Aristotle's and Gorrell's Models**

In section 3, the rhetorical situation of patent applications during the first decade of the 21st century before the AIA was introduced using theoretical lenses such as Aristotle's and Gorrell's model, an activity system model, and a genre system model. In section 4, it was discovered how the ideological goals of key social actors were reflected in the rhetorical situation of the genre of patent applications positioned in the AIA patent reform of the 21st-century patent system.

#### **1. Rhetor: From Inventors to Applicants**

After the AIA, rhetors of patent applications were changed from inventors or assignees to applicants. Applicants can be either natural persons who are original inventors or someone, including juristic persons, who obtained assignments of an inventor's rights. However, applicants are distinguished from inventors or assignees in that someone showing sufficient proprietary interest in the matter can be applicants and take charge of prosecution of patent applications.

According to the new first-inventor-to-file (FITF) system under the AIA, patents are not allowed only to the first inventors, but also to the first filers who invented independently and agreed to disclose the invention to the public. It is notable that the FITF system does not mean that applicants who misappropriated others' inventions can receive patents; only true inventors who independently conceived of innovative ideas can contest in the first-filing race.

During the process of legislation, anti-AIAs expressed serious concern that a rush to the USPTO in the FITF system may foster unfair situations where true and first inventors can lose races to file patent applications. As a result, anti-AIAs warned that the AIA may deteriorate inventorship and entrepreneurship in the end. On the other hand, pro-AIAs refuted that idea, saying that granting priority to the first-invention-to-filer is more justifiable because they tried to benefit the community by opening their innovative ideas to the public, which will eventually benefit industry and society particularly in today's rapidly changing world. Before the AIA, inventors could intentionally or negligently open their ideas to the public by keeping their ideas in a cabinet, which eventually contradicts to the purpose of the patent system: allowing exclusive rights to the private sector in return for disseminating knowledge to the public.

A patent attorney in practice in Washington, DC, explained this more in detail during the author's interview research: "The interference proceeding is very expensive due to attorney fees. It is much more advantageous to file patent applications in a hurry. Due to the advanced information technology and devices enabling pirating or fabricating others' ideas, it is unrealistic to fairly discriminate the true first inventor." According to AIPLA's survey (AIPLA, 2005), the mean total cost of interference proceedings, calculated from 120 cases, was \$656,306, whereas costs to prepare and file a patent application were around \$5,000 to \$20,000.

It is an undeniable fact that inventors became rhetors only if they became the first filers of a patent application. This means that applicants, not inventors, became rhetors of patent applications after the AIA. Traditionally, only signors of the inventor's oath could

be regarded as rhetors. However, the AIA distinguishes applicants from the signors. For example, according to AIA §115(d)(2)(B), assignees or any parties sufficiently interested are allowed to file patent applications by submitting a “substitute statement” if an inventor is not reachable during due diligence although they are not signors of the inventor’s oath. Before the AIA, when one co-inventor refuses to sign the inventor’s oath even though he or she is obliged to assign, the patent application could not be filed.

## **2. Audience: From PHOSITA to the Third Party in Public**

As mentioned, granting innovators exclusive rights is balanced by dissemination of their innovative knowledge to the public. Strictly speaking, the public corresponds to PHOSITA who can make and use the innovative ideas. Before the AIA, the role of PHOSITA was confined to readers of patent applications; however, the AIA opened a new horizon; the third party in public not only falls short of passively reading but also participates in the process of granting patent applications. The new post-grant procedures such as PGR and IPR, introduced in the AIA, allow the third party—anybody in public except inventors and the USPTO—to challenge the validity of poor-quality patents easily but extensively. In this context, we can say that the audience of patent applications was extended from PHOSITA to the third party including PHOSITA.

## **3. Text: High-Quality Written Description**

In the early days of the U.S. patent system, founding father Thomas Jefferson was concerned about the quality of patent applications to balance between public benefits and private incentives as creators of innovation. The AIA could be considered a revival of Jefferson’s spirit in that it tries to fix today’s chaos in the free market system that

originated from overflowing poor-quality patents and patent trolls' abuse of litigation. As detailed in the previous intertextual analysis section, more than 50 percent of lawsuits were raised by patent trolls and an average of 86 percent of patent litigations resulted in including invalid claims, which obstructed the normal business activity of manufacturers. Patent trolls sue or blackmail manufacturers for settlement money. This unexpected expense trickles down to customers in the end. For this reason, it is a widely held belief that patent trolls both abuse the patent system and harm the economy.

The written descriptions and drawings must be specific, not mere concepts, so that inventors can justifiably obtain exclusive rights against others in return for disclosing their innovations and contributing to the public. However, many patent applications have been too generously granted along the lines of expanding pro-patent trend and rising new fields of technology as patent subject matter.

To improve patent quality, the pro-AIAs tried to reinforce patent examinations by empowering human forces and updating the infrastructure of the USPTO with its new budget plan and control of fees. Before the AIA, the USPTO's budget was set directly by Congress; when the USPTO earns more money than it spends, the difference was assigned to other government programs. However, the AIA allows the USPTO to set its own fees and save them in a separate account, although there remain some issues about using those funds.

At the same time, the AIA established watchdog proceedings to intensify the quality of examination by allowing public participation. To be specific, according to AIA section 5(d) §321–329 and 37 CFR 42.202, post-grant review (PGR) proceeding permits

the public to challenge validity of newly granted patent applications for nine months after the registration date. According to AIA §316(e), Inter parte review (IPR) proceeding permits the public to challenge the validity of registered patents without time limitation, but limit the reason of invalidity to novelty and nonobviousness conditions.

#### **4. Exigency: Domestic to World-Wide Filing Race, First-to-Publish Race**

As the FITF system substitutes the first-inventor system, even true inventors cannot avoid races to file patent applications first in the USPTO. Previously, true inventors could keep their ideas to themselves until they filed patent applications without losing priority only if they paid due diligence in materializing the invention. However, they are now required to file their patent applications to obtain inventors' rights. Furthermore, the FITF system expanded the boundary of prior arts from domestic to international, which fits the globalization age where people share information with anyone around the world in real time. According to AIA §102(a), a person shall be entitled to a patent unless the claimed invention was described in a patent issued or patent applications publicized before they are "effectively filed before the effective filing date," which was previously "filed in the United States before the invention." In other words, patent applications filed in the United States can be rejected by earlier patent applications filed in foreign countries. The race is on a worldwide track.

Many people say FITF is a part of patent harmonization—international efforts to unify the world's patent law. The advantages of patent harmonization are known as increasing the certainty of patented rights and reducing fees for legal and administrative services (Kaminski, 2001). Under standards of the AIA regulated by the "effective filing

date,” U.S. companies overseas, such as in China will obtain the same benefits to prevent others from filing patent applications for the same inventions in the United States by filing in a Chinese patent office. Foreign patent applications have generally been used as evidence to prove the first invention under the previous first-to-invention system. This “effective filing date” standard had been incorporated under the FITF system to compensate for the disappearance of the first-invention priority. It is notable that China has recently overtaken the United States in the number of patent filings. In 2011, China filed more than 526,000 patent applications, whereas the United States filed 503,500 (Smith, 2013).

Pro-AIAs believe that the FITF system will eventually benefit American society in two ways. First, an exigency to first file will lead U.S. entrepreneurs and businesses to jump into the market, creating new businesses and new jobs (White House, 2011). Patents under the first-to-inventor system are inherently unstable because there is the possibility that a first inventor will come up suddenly. FITF is helpful for them to promote their goods or services and convince investors with higher certainty of patent validity. However, it remains to be seen whether FITF will encourage entrepreneurs to the market, as pro-AIAs expect, since the FITF system may result in discouraging them due to a disadvantage in time and money to compete with large businesses. Second, and more important, the earlier filing race under the FITF system will automatically lead to earlier publication of the inventions to PHOSITA, which makes the United States competitive in a rapidly changing world. For pro-AIAs, FITF is an effort to maintain the

soundness of the patent system having developed to balance the benefits of the private and public sectors.

Historically, the patent system has always evolved into a new system by changing its structure to keep this balance when it was disturbed. For example, there were well-known patent pirates possessing “submarine patents,” the publication of which were intentionally delayed for many years without registering/publicizing and suddenly attack manufacturers who happen to use the inventions without knowing their existence. This was against the ideology of the patent system: granting privilege in return for contributing to innovations of others by disclosing the inventions. Although the submarine patent became a serious problem in the patent system, it was not illegal because patent applications were published only after they were finally registered in the USPTO. In November 2000, submarine patents disappeared by legislating the mandatory publication of patent applications one and half year after filing dates.

On the other hand, AIA §102(b) clearly support another exigency, “first publication,” implicated in the first filing system. According to this revised regulation, disclosure of the invention within one year before the effective filing date will not constitute a prior art, but only if the disclosure is made by an inventor or assignee. As a result, someone who discloses his or her invention first will obtain higher priority over someone who files the same invention first but later than the disclosure—logically, someone who tries to benefit the public earlier gets the advantage. For this reason, FITF could be called the “first-to-publish system,” which Thomas Jefferson would be happy to

hear since he espoused the importance of knowledge distribution as the top ideological goal of the patent system (see Chapter 1).

## **5. Constraints: Time and Cost for Patent Applications**

We can count as constraints the lead time and money paid to prepare patent applications for filing. First, under the FITF system, the lead-time constraints were tightened because inventors should file patent applications as soon as possible after they conceive of inventions. What's worse, patent applications must be prepared to higher standards with the AIA introducing new invalidation proceedings and prior arts on the international stage. Applicants should chase two hares at once: speed and quality.

In addition, we can count as constraints a lead time from filing to the registering of patent applications. Framers of the AIA have asserted that this act is to shorten this lead time by decreasing the chronic backlog of patent applications and by suggesting multitrack patent examinations including several highways. Nonetheless, it remains to be seen whether the lead time will decrease by empowering patent examiners and IT systems of the USPTO or increase with patent applications rushing to the patent office in the race to file first.

Second, the constraints are also tightened from a cost perspective. According to AIA Sec. 11(i)(1), as of September 2011, almost every fee in the USPTO was raised by 15 percent, including an additional \$400 fees for nonelectronic applications. Although small entities and micro-entities will benefit from a 50 percent and 75 percent exemption, respectively, lawyer fees to prepare patent applications remain the same. In addition, it seems that small entities and micro-entities will be required to circulate money for patent

applications in a shorter period than ever to file them earlier while also attempting to improve quality.

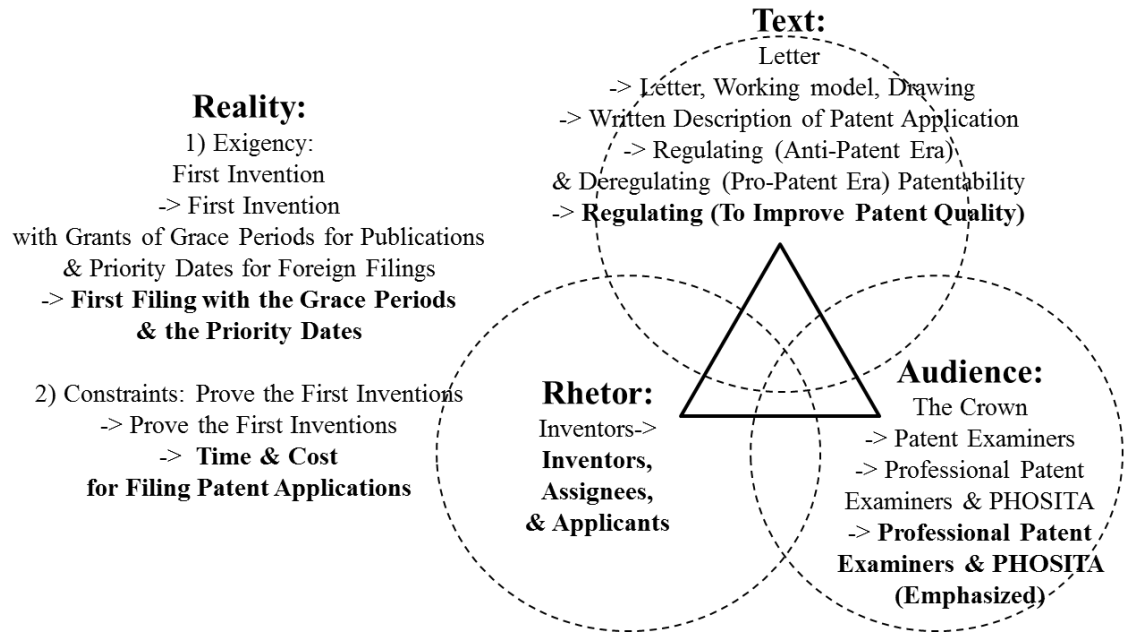


Figure 16 Rhetorical situation of patent applications of the 21st century (after AIA)

### Activity System and Genre System: Pluralistic-Centered Ideology

Figure 17 is an activity system after the AIA in the 21st-century U.S. patent system. Here, “subjects” are newly included applicants and PHOSITA, in addition to inventors, assignee, and patent examiners. Before the AIA, there was no distinctively separate definition for “applicants” since inventors were intrinsically regarded as applicants. After the AIA, as described in the analysis of the rhetorical situation,

“applicants” became rhetors of patent applications. Noninventors can be applicants if they are 1) an assignee; 2) a party to which an inventor has an obligation to assign, or 3) a party that otherwise shows a sufficient proprietary interest. Furthermore, PHOSITA showed up as a player, while they are still a major audience of patent applications. The AIA opened the door wide to PHOSITA in post-grant proceedings where they can actively participate in challenging the validity of patents. Stakeholders for grants of patents did not fall short of applicants and USPTO, but clearly expanded this time to PHOSITA, for example, who may run businesses related to claimed inventions or who may have filed the same invention before.

The AIA is an effort to exclude pure “capital income” from the “object” of filing patent applications, which is obtained mostly by patent trolls without adding innovation to the world or producing goods and services. For the reason, “object” in this activity system after the AIA returned to the original purpose, “patent.” “Tools” still correspond to “patent applications” mediating between the subjects and the objects.

“Community” still corresponds to “the United States,” where the patent system works under the territorial principle; however, “community” under the AIA includes some aspects of the worldwide stage due to an effort of patent harmonization. For example, due to the introduction of the FITF system of AIA, the USPTO can easily cooperate with foreign patent offices on patent examinations. If a patent application was granted by examination of the EPO, SIPO, JPO, or KPO, then the USPTO can grant a patent for the application without investigating new prior arts and substantially examining them. This is called the patent prosecution highway (PPH). “Community” will

be worldwide in the future if patent harmonization is completed so that an inventor can file a patent application in an office anywhere and prosecute it under uniform standards. The AIA incorporating the FITF system was a significant step toward the completion of patent harmonization.

“Division of labor” corresponds to inventors, assignees, applicants, patent examiners, judges, and PHOSITA. Applicants, newly added, work for patent prosecution. “Rules” correspond to “patent rules,” “MPEP,” and “patent laws,” which have not been changed. However, the Obama administration’s actions stimulated the patent reforms as forms of legislative recommendations regulating patent trolls and executive actions for the USPTO.

“Outcome” corresponds to the ideological goal of community “the United States” to be achieved by objects. The AIA is an effort to suppress and eliminate capital-centered ideology pursued by patent trolls. At the time when the patent system was first established in the United States, author-centered justification was prevalent for intellectual property rights. People believed that the IP system existed to protect inventors’ rights granted as incentives in return for benefiting the nation by making useful items and innovations in science and technology. As the patent system was settled down, user-centered ideology started to emerge. People noticed the importance of accessibility of inventions by public users to promote innovations in an ongoing cycle.

Nonetheless, for a long time in the United States, patents had been granted to the inventors who first conceived of and/or reduced the inventions to practice whether or not they kept them secret from people. Every nation besides the United States granted patents

to the inventors who first filed patent applications in patent offices and disclosed their inventions in a proper time. It seems the United States stressed author-centered ideology more than any other country.

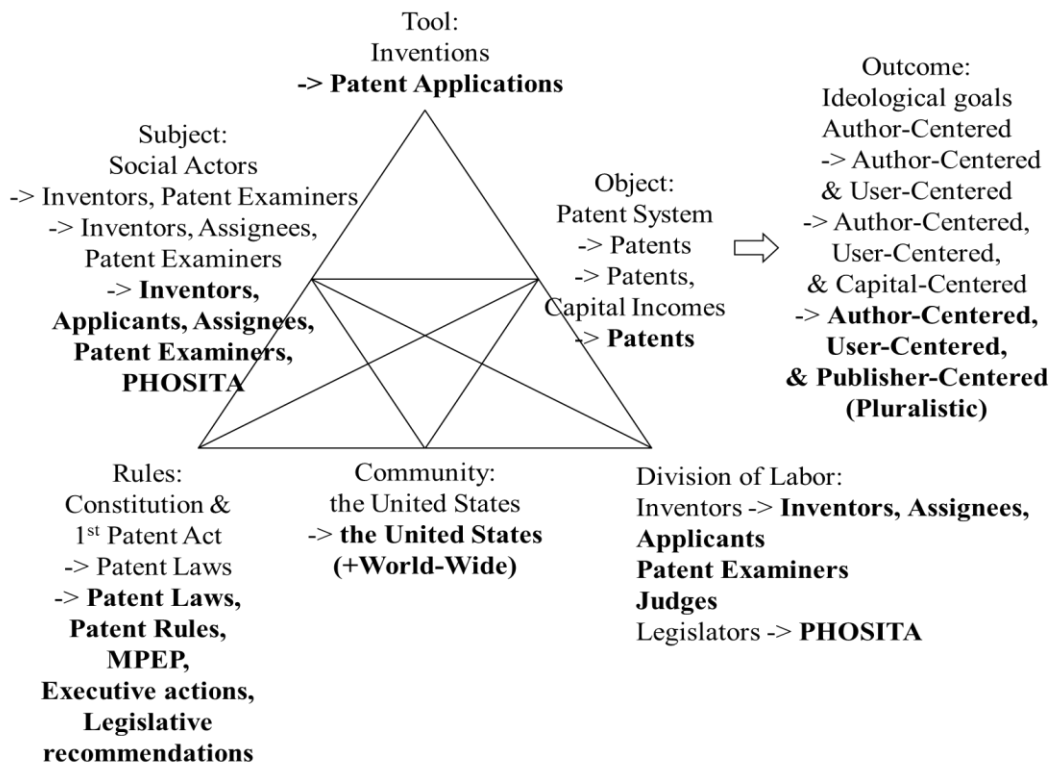


Figure 17 Activity system of the 21st-century U.S. patent system (after the AIA)

On the other hand, the patent system developed from an aspect of publisher-centered ideology. Particularly, the AIA promoted publisher-centered ideology by allowing noninventors applicants, such as an assignee, a party to which an inventor has an obligation to assign, or a party that otherwise shows a sufficient propriety interest. On

the other hand, entrepreneurs or companies composed of talented duty inventors started to aggressively invest in production of patents to translate results of research and development of technology into patents to succeed in their businesses. Entrepreneurs appealed to investors by showing competence on their business in terms of the patents they obtained, which possibly excludes others from using the inventions. Companies started to produce patents on a regular basis to increase their competitiveness by asserting patent infringement in competitors' current or potential products.

In the 21st century, people noticed that patents were neither simply given to inventors as incentives nor social duties to enlighten the public. The patent system is not simply working based on an ideology centered in any one of author, users, or publishers. All three have justifiable rights in an environment of balancing interests rather than zero-sum conflicts. This matches with the pluralistic theory.

Figure 18 is a schematic diagram showing the relationship among genre sets, the genre system, and the activity system in the 21st century. There are several distinctive features. Applicants joined subjects in division of labor of the genre system. The AIA and post-AIA actions were driven by executive actions and legislative recommendations made by executive leaders, including President Obama, to eliminate patent trolls from the patent system. Quality of patent applications and the certainty of the patent system are expected to improve with these measures. As a result, the object of the genre will be returned to the original target, "patents," excluding short-term capital income pursued by patent trolls. Ultimately, pluralistic ideology will be accomplished by balancing author-centered, user-centered, and publisher-centered ideology.

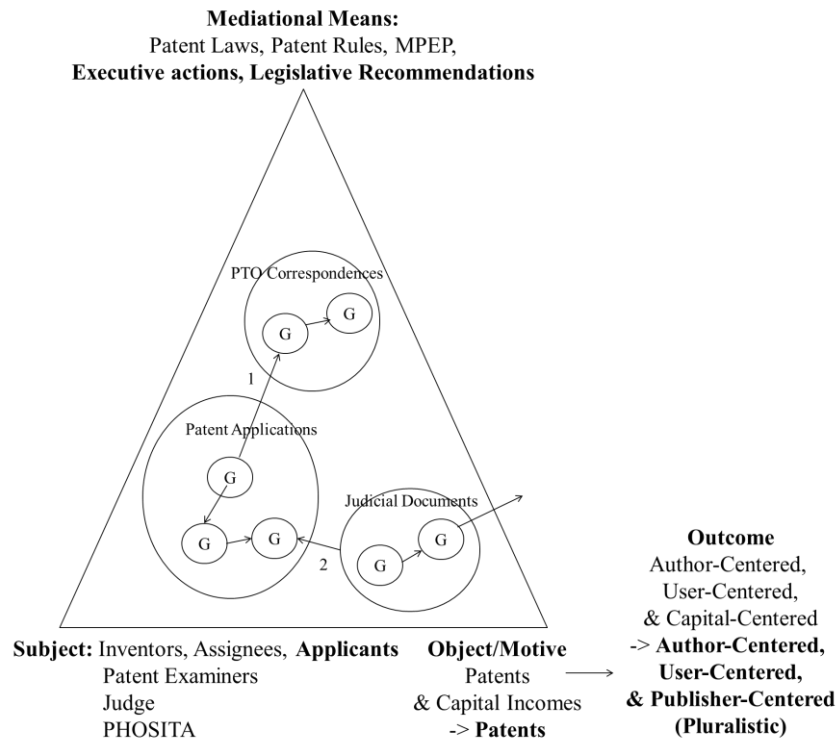


Figure 18 Genre sets within a genre system within an activity system in the 21st century  
(after the AIA)

## **CHAPTER FIVE: CONCLUSION**

This study hypothesized and examined a theoretical tool, “a genre mediates between social actions and ideological goals,” to fully understand the dynamic relations among social actors, their ideological goals, and the patent reforms embedded in the genre of patent applications. The present is interlinked with the past. This study started with the patent reform that established the U.S. patent system. Then the AIA, patent reform in the 21st century, was put into the hypothesis and case-studied, evidencing it as a useful framework. Four logical steps were taken to examine the hypothesis: 1) activities of key social actors, 2) ideological goals of the key social actors, 3) the rhetorical situation of the genre of patent applications embedded in patent reform, and 4) how the ideological goals of the key social actors were reflected in the rhetorical situation of the genre.

The U.S. patent system was established by the first Patent Act, which as based on the constitutional clause about inventors’ rights. Steam-engine inventors and young politicians motivated the Founding Fathers to guarantee inventors’ rights as an incentive to contribute to the development of science and technology, which would result in growing the economy and military power of the new nation. Thomas Jefferson helped establish the U.S. patent system with his continuous criticism of it. He believed the patent

system should be designed for enlightening people through dissemination of innovations in return for granting privileges. He was a pioneer of user-centered ideology.

In the 21st century, as pro-patent policies advocated the private domain's interest overly and new subject matters appeared in fields of new technology, side effects of the U.S. patent system emerged. Patent trolls sought short-term capital income without producing goods or services using the patented inventions. People recognized that overflowing patents with low validity impeded the development of science and technology and obstructed the exchange of qualified information through patent applications. The America Invents Act, though incomplete, was a step toward balance between the private and public domains' interest.

According to interviews with professional practitioners and intertextual analysis of words of key AIA players in the legislative, judicial, and administrative branches of the United States, the pro-AIAs tried to reflect the needs of the times in the patent system by reforming it. They advocated publisher-centered ideology and reinforced user-centered ideology to stand against the malfunction of the patent system and patent trolls' abuse of it.

Pro-AIAs have highly praised the importance of publicizing high-quality patents and controlling abusive patent rights, which is in line with Jefferson's priorities 200 years ago. Pro-AIAs seem to believe it is time to go back to the basics and revive Jefferson's legacy in attempting to grant patents that enable PHOSITA to make and use the inventions by requesting high-quality patent applications. Nonetheless, it is notable that some people still illuminated a different side of the AIA: a deterioration of inventorship

of individuals or small entities and U.S. hegemony of the patent market on the global stage.

This study shed light on how social actors, their ideological goals, and genre dynamically interact by investigating two important patent reforms in different time periods. The big picture could be obtained using the hypothesis suggested in this thesis. The key players' ideology was well reflected in the rhetorical situation of the genre of patent applications, which mediated between social actions and their ideological goals for the United States.

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