From: elaine chou
Sent: Monday, April 15, 2013 1:30 PM
To: SoftwareRoundtable2013; Sked, Matthew; QualityApplications_Comments
Subject: Comments re: Partnership for Enhancement of Quality of Software-Related Patents

Good Afternoon,

Attached please find my submission of written comments from the public with regard to the Partnership for Enhancement of Quality of Software-Related Patents: http://www.uspto.gov/patents/law/comments/comments_software_partnership.jsp. My comments exist in the form of a thesis, which served to complete my academic degree in Georgetown University's Master of Liberal Studies with a concentration in Ethics & the Professions earlier this April.

This thesis entitled: "A Strategy for American Innovation: Applying Immanuel Kant's Theory of Knowledge to Tech Patent Law," will also be available on ProQuest, accessible to the public in June 2013.

As a technologist specializing in human factors design, I've closely followed the software patent development intently over the past couple of years, including the Patent & Trademark Office's Software Roundtable Discussions. In 2002, I founded and served as a Principle Member of a boutique web firm located in Virginia and Illinois founded offering specialized services to mid-size institutions. Aside from presenting and publishing, I've instructed Fortune 100 companies nationally on emerging web design issues and served as a certified Adobe software instructor and web design expert.

Please confirm receipt of these comments. Based on the PTO website, I was unclear as to where exactly to send comments, and if these comments exist in an acceptable, though unique format.

Many thanks,

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A STRATEGY FOR AMERICAN INNOVATION:
APPLYING IMMANUEL KANT'S THEORY OF KNOWLEDGE TO TECH PATENT LAW

A Thesis
submitted to the Faculty of
The School of Continuing Studies
and of
The Graduate School of Arts and Sciences
in partial fulfillment of the requirements for the
degree of
Master of Arts in Liberal Studies

By

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Georgetown University
Washington, D.C.
April 1, 2013

A STRATEGY FOR AMERICAN INNOVATION:
APPLYING IMMANUEL KANT'S THEORY OF KNOWLEDGE TO TECH PATENT LAW

Elaine Chou, M.A.

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ABSTRACT

An investigation of Kant's theory of aesthetic creativity to the mechanical principles of causal productivity allows for the redesigning of regulatory and legislative attitudes toward innovation. Part of the contemporary issues in tech patent law stem from misconceptions about epistemological basis for intellectual property. More precisely, different functions of the mind allow for creative innovation. The faculty of understanding leads to conceptual designs that in turn imply the structure and boundaries of property. The other issue entails treating conceptual designs as external tangible assets for which private controls may be claimed.

Reframing the broken patent law system in the spirit of Kant's critical theories and value structure, Kant's theory of knowledge identifies the root to proper intellectual property application, and the fundamental underpinnings to encourage innovation in a technological interactive design environment. The theoretical philosophy of Kant's theory of knowledge provides a practical dimension to policy design and implementation. Thoroughly comprehending Kant's concept of aesthetic creativity and his explanation of the mechanical principles for causal productivity provides universal epistemological solutions to contemporary tech patent issues.

Actively attempting to create property out of creative insight inherently causes confusions in the courts. Because aspects of the faculty of reason, involve an essence of "innate plasticity," the aesthetic idea cannot be treated like property. Concepts, on the other hand, are externalizations - temporal constructs bound by space and time. Property rights may be

reasonably claimed over forms bound by clarity and scope. In applying Kant's theories of knowledge and metaphysics, we may rethink the role of intellectual property's "business-method process" in relation to technological interactive design processes that best allows humans the ability to socially, intellectually, and economically flourish across borders.

ACKNOWLEDGMENTS

Deepest, sincerest gratitude to my most amazing mentor, Professor Reuscher, who shows fascination with my topic and blesses me with hours of conversation each week about topics I love. Wise and judicious, non-judging attitude, Professor Reuscher is generous with his time. In all respects, it has been a stimulating experience working with Kant and a tremendous privilege conversing with Professor Reuscher and hearing his insights. Nearly every day I am appreciative and enlightened by Kantian theory.

Many thank you's to Assistant Dean Ridder for her wisdom, kind patience, generous assistance,and ongoing availability. Assistant Dean Ridder remains a stalwart of calmness in the sometimes turbulent sea of student deadlines. Also, with much gratitude, I thank Professor Gladys White for her time and perspective. Her Cyberethics course promoted interest in this Master's thesis topic. Mentors at Georgetown dedicate much of their busy schedules and goodness in their hearts to shared insights and wisdom. Their profound contributions lend deep intellectual insight and wisdom that moves the mind, spirit, and soul. While intensely challenging moments reside outside the typical comfort zone, the ethical and value-based components of the program makes for the most meaningful journey. Thank you for the honor to study amidst the warm, supportive community and the positive intellectual energy that Georgetown provides.

Many thanks, also, to dear friends who share compassion for the human spirit: the Inman's sharing their affections, nerdy dinner conversations, laughter, and a place to rest the head; Jenny Lagerquist's wise insights; Kristi's late night console; Julia's intellectual property law expertise. Thank you also to The Writing Center: Abby's eloquence, Mallory's therapeutic listening, Ellen's fresh perspective, Megan's straight talk, Clara's structural feedback, and Katie's close eye to detail. Their thoughtful and probing questions initiate intriguing conversations and explorations. Thanks also to my family who endure my prolonged commitment to academics.

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CHAPTER 1

INTRODUCTION

> Technology alone is not enough. It's technology married with liberal arts, married with the humanities, that yields us with the result, that makes our heart sing.
>
> -Steve Jobs, *Apple, Inc.* [1]

Case Study

The most illustrative tech patent lawsuit to date, in August 2012, the *Apple Inc. v. Samsung Electronics Co., Ltd.* in the Federal District Court in San Jose, California held the verdict that Apple's four valid utility and design patents were infringed by Samsung.[2] Awarding Apple over $1 billion in damages draws concerns in the tech industry over unnecessarily broad and vague patents such as rectangular shape, round edges, one-finger scrolling, and two-finger gestures that arguably contribute to the role standards play in creating meaningful user experiences.[3] While on one level, Samsung's copying infringement remains largely undisputed, these interactive design processes illustrate the increasingly important role that the graphical user interface (GUI) or application programming interface (API) affect the realm of software development and the patentability of such discoveries.[4] Interactive design types of claims largely depend on a compilation of patents filed, from design, utility, step-lock method patent, or functional patent, or the most recent "business model" patent. Patent adherence to classifications alter based on justifiable legal evidence used to support the type of patent. The interactive component of the user experience tends to allow these patents to be filed under business method patents.

Still, interactive design patents fall in to a larger category of "useful arts" that remains ambiguous for patent qualifications.[5] A quagmire of complex interactive design related lawsuits plague the court system and the ability to innovate.[6] While validating the importance of human

factors design, the Apple v. Samsung decision creates a war-zone for product designers, who interpret universal and obviously common notions similar to a "circular steering wheel" or a number touchpad, also known as "all-digit dialing," first created for the telephone.[7] Some argue that a language of gestures exist, in ubiquitous form for the total interactive user experience. Apple's patents are like claiming exclusivity over the gestural language of humans, at a time when "intellectual property is to the digital age what physical goods were to the Industrial Age." [8]

Problem

In spite of the ethical and legal complexities that direct technology patent law's demand for guidelines and regulations, federal and international law is strikingly lacking in tech policy. The "grand challenges" of the 21st century involve a national innovative strategy that include high-growth and innovative-based tech entrepreneurship. Special problems present themselves due to constantly changing techniques and technologies. Laws specifically geared towards the burgeoning tech field are relatively new and constantly developing.[9] It is therefore difficult to pinpoint accepted practices and procedures. Failure of concise patent guidelines limits a quickly-evolving industry; high-quality patents encourage innovative intellectual property.

More fundamentally, challenges in the intellectual property system exist because of the attempt to create private rights of control over the mind's internal processes, "which cannot be fully explained." Processes of the mind, particularly that of insight and reason, cannot be reduced to "a controlled formula." An aesthetic idea cannot be treated like property because it involves the inherently fluid and ephemeral spirit that "continually mutates." Only temporal constructs of property, that of conceptual design, are externalized. It follows that externalizations may be possessed on the basis for a claim or title, as presuppositions of real property and tangible assets.[10]

Appropriately sensitive to the ways in which inventiveness and creativity provide the real engine for economic growth, law through litigation, legislation, and regulation may best ensure a regulatory climate that best fosters innovation.[11] As it currently stands, technology patent lawsuits endanger innovation. Nearly every tech company becomes embroiled in legal patent contentions and reject claims that do not merit protection. According to the Electronic Frontier Foundation, the U.S. Patent and Trademark Office (USPTO) issued 40,000 software patents in recent years, with numbers due to grow.[12] The validity of almost 2/3 of tech patents are questionable; nearly 80% of all court cases involve the validity of tech patents.[13] In 2011, companies paid non-practicing patent entities $29 billion in direct payouts, with overall costs averaging over $80 billion in patent litigation and claims to the detriment of the U.S. economy every year.[14] Software programs accounted for the fastest-growing sector of patent applications between 1980 and 2005 according to the Brookings Institute.[15] Costly and ineffective patent wars between tech companies divert attention away from the primary business of creating and producing innovative technologies. Highly dependent on rapid development, tech innovation poses new challenges to an antiquated patent system.[16] Federal law functions on a traditionally slower development timeframe and thus lacks strikingly adequate protections in contemporary times.[17] Ill-equipped to resolve issues regarding patent types, categories and qualifications of "business methods" as software patents relate to humanistic interactive design principles, the cumbersome and burgeoning patent process hinders the ability to innovate rapidly in an information abundant, knowledge-based era that demands quick adaptation. The creation of a more sustainable patent system requires new modes of thinking about this Knowledge-based era.[18]

The absence of government regulation leaves tech companies and professional organizations to resolve the problem of patent validity. Invalid claims constitute the most serious economic problem posed by intellectual property legalists. Vague patent claims create serious

innovative risks for technologists and consumers. Societal welfare requires more than the free market alone to prosper. The National Economic Council's Strategy for American Innovation published that "The recent crisis illustrates that the free market itself does not promote the long-term benefit of society, and that certain fundamental investments and regulations are necessary to promote the social good." [19]U.S. innovation requires some protection of creator's rights. Finding balance between these protections while promoting the long-term benefit of society remains a continuous challenge to America's free culture environment. The current cost-of-doing-business results in abhorrent waste, in an era where waste in the recent economic crisis illustrates is practically insupportable.[20] The sustainable solution is not predicated on extremes in regulation or lack of regulation, but upon the balanced government initiatives sensitive to sustainably supporting innovation. Reasonable care in the practice of tech patent liability as well as adequate provisions stimulate the tech economy and lead to good policy and "good" law, with respect to the maximization of human dignity.[21]

Argument

This Master's thesis aims to provide a rigorous re-conception of tech patent law, taking into consideration the speed at which tech patent claims and contentions manifest themselves in the court system. Reframing the patent law argument requires architectural guidelines and boundaries grounded in sound philosophical discourse by which the language surrounding private rights for public well-being may be determined. The current philosophical interpretations surrounding intellectual property need elucidation. The theoretical philosophy of Kant's theory of knowledge provides a practical dimension to policy design and implementation. A thorough investigation of Kant's concept of aesthetic creativity combined with his mechanical principles for causal productivity provides normative solutions to contemporary dilemmas.

Kant draws a relationship between creativity and property. On the theory of knowledge, and the creative mind, Kant explains that reason and understanding play different functions. In creative discourse, the faculty of reason also known as "Das All" is a time-free series of spontaneous insight that creates systematic unity. The faculty of reason is involved in the generation of ideas. Meanwhile, the faculty of understanding is the appropriation of information data. While it is controlled by the rules for unity, it produces time-distinct connections between data units called concepts. Ensuring legislative control over property-bound component of intellect lies in issuing patents claims over external conceptual designs, not in what the mind creates internally. Externalizations are tangible assets that may be considered property and therefore controlled by ownership rights. Because intellectual property involves both the creative insight as well as the application of conceptual property, policymaking and legislative confusion about intellectual faculties can result. The mind's creation and the concept of property as a technical rule that governs production creates a mismatch in intellectual property application. This Kantian distinction between creativity and property provides an essential component to solving the tech patent wars.

Kant's epistemological study bears applicability to the challenges that this Age presents. His philosophical reasoning clearly delineates standard terminology and differences between the faculty of ideas and the faculty of concepts, creates precedence for patent standards that affect the legal reasoning behind intellectual property. The language of knowledge establishes clear conceptual guidelines and the scope for intellectual property constitutional provisions. An equitable balance between the public rights' need to continuously invent and respectful recognition of the creator's private rights may be developed. Kant's theory of knowledge contributes to a conceptual re-ordering in emergent tech intellectual property legalities. With creativity maximized, innovation and the spirit of commerce flourish. Restructuring the

underpinnings of intellectual property allows for a civil discourse where human dignity may best be maintained.

Methodology & Approach

One of the most significant issues with software inventions is identifying the scope of coverage of patent claims, which define the boundaries of the patent property rights. Without clear boundaries, patent examiners cannot effectively ensure that the claims define over the prior art, and the public is not adequately notified of the scope of the patent rights.[22] Defining the structure can be critical to setting clear claim boundaries. In particular, this study proposes to provide sufficient epistemological "structural" support to software patent and to clarify the scope of software functional language for legislative and regulatory purposes.

Given contemporary problems in tech patent law that plague the U.S. strategic vision for innovation, Chapter 1 outlines the complexities of interactive design software and tech development in the litigious atmosphere of tech patent liability. Responses to a malfunctioning patent system depend on a systematic approach to industry standards. Chapter 1 provides a broad overview of the general tech industry standards toward software development, in the promotion of competitive markets that spur productive entrepreneurship. Fundamental investments and certain regulations necessarily promote the social good. In harnessing the inherent ingenuity of the American people, a dynamic private sector generates innovation that help ensure expansion. Chapter 1 outlines these innovative developments in both private and public sector response. A strategy for American innovation lies in re-conceptualizing how the status quo may be improved.

In Chapter 2, I argue that Immanuel Kant's theory of knowledge offers a conceptual model that restructures tech patent law in a way that encourages a sustainable strategy for American innovation. One major question that plagues the patent system in the courts as well as the patent office is the theoretical abstraction of technological ideas and therefore inventions. To

address this need, Chapter 2 offers a conceptual model by an 18th century philosopher who addresses a few contemporary challenges to patent law interpretation. This chapter provides a conversation for Immanuel Kant's Theory Of Knowledge, informing what it means to be human, and it elucidates on the conceptual confusions riddling our tech patent system. In an exposition of the nature of ideas, I re-examine the roots of human knowledge, how it is created and what it means to the human generation of ideas. This chapter provides a coherent and consistent understanding to a misconceived notion of "ideas," where upon the linguistic term "concept," may provide greater better accuracy. In filtering the definition of abstract ideas using logic to reframe the language of intellectual property, Kant lays claim to truth and harmonizes contemporary incoherencies.

Chapter 3 defines a framework on external property limitations, setting expectations and the scope of human knowledge within that of good governance. Clarifying ambiguities of language, Kant's philosophical expositions translates vague language of intellectual property into clear, concise, and consistent terminology, disclosing contradictions, and allowing for minimal manipulation. Philosophic language serves more than jargon. To encourage a free and open global tech environment, conceptual discourse on language delineates legal finitude in patent requirements, helping to create a more equitable environment that benefits society at large.

Finally, Chapter 4 encourages legislative and regulatory governance toward the human imperative. It considers the applicability of reconceptualizing intellectual property for patent claims in conjunction with legal scholars' remedies to the tech patent system. Encouraging legislative and regulatory governance toward the human imperative. this section maximizes reforming the tech patent system for the conclusory ends of fulfilling what it means to be human. Some scholars contend that the law is conceptually a priori to politics under the emergent model, making it necessarily politically indeterminate, and therefore, fixes to a malfunctioning patent

system are virtually impossible. Innovative forums, lobbyists, the USPTO's willingness to hear ways of improving suggest otherwise. Patent law effectively supports the building blocks to innovative development. A modern, pragmatic intellectual property approach contributes to the necessary catalysts needed to jumpstart innovation in sectors of national importance, that only the government can provide. To develop an open and collaboratively competitive environment, appropriate legal tools support entrepreneurial growth. This type of governance, that which maximizes human dignity and autonomy, best benefits both the individual as well as society. The discussion moves from traditional points of conflict between the two schools of thought, one of private autonomy and the other of social welfare of innovation, and one toward a balanced discussion of what most benefits the human imperative, and finds that the economic and innovative imperative lie within that of the human imperative. Stable mechanisms that encourage innovative, flourishing Knowledge Age sustainably, then mitigates unnecessary litigiousness.

Related literature reviews as well as previous scholarship on tech patents and a restructured patent system exist in the supplemental Notes area. Appendixes provide the most current information as of the date of publication, considering that patent law changes day-to-day. Illustrations visually enhance the arguments.

Project Scope

Rather than propose to solve all questions related to patent law, this paper begins a conversation that explores and promotes an openly innovative culture, investigating the theoretical and legal implications of intellectual property as a means to maximizing human dignity and autonomy. Examining the classics allows for one understanding of creative genius, a fundamental component of innovation, and offers an epistemological dialogue about how intellectual property promotes economic viability for free cultural exchange.

Not limited to patent law legalese, this paper focuses primarily on the importance of an epistemological understanding of intellectual property in American society, supplemented by legal protections as part of our free culture, and mechanisms to do so in the context of a patentable process in a tech interactive design environ. Given the confines of time and space, this study inherently focuses on very narrow form. This discussion does not cover all aspects of the premise of free culture, defining free culture in an economic or legal sense. For that, I rely primarily on Lawrence Lessig's *Free Culture : The Nature and Future of Creativity* and his writing on *The Future of Ideas : The Fate of the Commons in the Connected World*.[23]

In more general terms, this study is not a discourse on the broken patent system, how broken it is, nor is this a study on what policymakers do wrong. A wealth of scholarship elucidates on these issues.[24] This work does not focus on an analysis of the Patent and Trademark Office, classic intellectual property theory, or the history of intellectual property development. Not a philosophy of law, an economic study on the benefits of innovation or information technology, nor offering expertise in information technology policy or a discussion on innovation threats, rather, this work provides a multidisciplinary study emphasizing the importance of a well-functioning intellectual property system in philosophical and cultural context. It emphasizes the highest order of what it means to be human in an intelligible world.[25]

For practical reasons, this work assumes core American values based on a philosophical framework. It serves as a philosophical entry into Kant's theory of knowledge as a foundation to tech patent intellectual property. Delving deeper into notions of innovation, ethical questions draw upon continuous studies in intellectual history and philosophy. Contemporary tech business solutions may draw upon these contextualizations, provided that elucidating on Kant's theory of knowledge may be one of the main, but certainly by far not the exclusive means of modification to contemporary innovative concerns. Immanuel Kant's theory of knowledge lends a leading

epistemological view that addresses the complexities faced in tech patent law. In applying the multidisciplinary, nuanced approach to fields of law, tech, and policy, we find that sharing various of epistemological methods carefully drafted and enacted upon, may alter tech patent law's approach to encourage universal ends. Exploring additional modes of knowledge enquiry to address contemporary issues require further investigation.

Complementary studies would provide practical application to today's intellectual property dilemmas, including contributions to software patenting, other countries' response to software patenting, the effectiveness of business model process patents , "means-plus-function" language implications, as well as application of aesthetic creativity and neuroscientific studies to intellectual property. Henceforth, more research in the field of software patenting including the implications of shorter patents, as well as analysis of software copyrighting may increase the quality and impact of tech innovation. Other studies involving the historical formation of software intellectual property, case law and rulings, in addition to the rationale behind the rulings and the application of philosophical understanding, extend beyond the purview of this study.

Accordingly, this work contains a survey of literature in specific areas of intellectual property, asking pertinent questions about the outstanding technological issues. Legislative and regulative mandates rely on the legal scholars' familiarity with logistics within the patent system as well as software technological wherewithal. Across the board, this work contextualizes an American culture-based movement driven in part by the benefits of technology. It focuses on the benefits of reframing an approach to intellectual property legislation in an age of intellectualism, embedded in a mindset of American democracy and justice.[26]

Overview of Tech Patent Law and the U.S. Patent System

Standards & Definitions of Intellectual Property

Legal principles in intellectual property remains an evolving field. A brief primer to the current standards and definitions of intellectual property include the U.S. Constitution's Article I, §8.8 reference to Congress's authority "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" in regards to patents and copyright.[27] By and large, patent eligibility must satisfy several procedural and substantive requirements. For statutory provisions, §§101, 102, 103, 112 determine patent eligibility. Among several hurdles, the application claims statutory subject matter within the meaning of 35 USC §101 of the Patent Act, relates to subject matter whether an invention is patentable.[28] Patents may be issued for a classification as a new and useful process, machine, manufacture, composition of matter, or any new and useful improvement thereof, subject to the conditions and requirements of this title. On the grounds deemed statutory subject matter, one of explicitly four "fundamental principle" named categories : processes, machines, manufactures, and composition of matter must be met.[29] Recent technology-based claims in Supreme Court of the United States (SCOTUS) decisions and USPTO guidelines focus on the process / method category.[30] The Federal Circuit's interpretation of the SCOTUS's opinions further emphasizes that "mental processes" do not qualify as statutory subject matter eligible for patent protection, specifically noting that "the patent statute does not allow patents on particular systems that depend for their their operation on human intelligence alone." [31]

Often, contentions in tech patent law lie in legal qualifications of "business model process" or "machine-or-transformation" tests. *Re: Bilski* and recent cases reject process claims on these software, business methods, and diagnostic tests to the three prime examples of

"knowledge products." [32] Categorical distinctions between "mental processes" and "business-method processes" of "knowledge products" remains universally nebulous. Not surprisingly, the Federal Circuit interprets these methods inconsistently. 35 USC §301 replaces the word "art" with "process," defined in section §100 whereby the courts determine the meaning to be that of process or method. In 2012 the unanimous decision in *Mayo Collaborative Services v. Prometheus Laboratories, Inc*. raised questions about the mental steps or law of nature regarding software patent claims.[33] The tests for statutory subject matter substantially abrogated prior formulation. Each of these Constitutional provisions and established guidelines affects the implementation of patent law. 35 USC §102 defines the statutory novelty and other conditions for patentability, which offers one frequent method of tech patent invalidation, stating that "Any new and useful improvement thereof" begs vagueness in novel development. 35 USC §103 discusses the non-obviousness of the subject matter.[34]

The reality of inventions involves the cumulative nature of inventions, with knowledge of an invention serving as input for future inventions. Special problems exist due to constantly changing techniques and technologies as well as interpretation. Sources of authority for tech patent standards remain ever changing in this evolving field that evokes limited professional guidelines. The contemporary environment encourages new business and opportunities for the Patent & Trademark office, legislative resources, and policymaking to transition to higher-quality standards setting, issued with an intent to support innovative intellectual property.[35]

The Problem of Interactive Design Software and Tech Patent Liability

To compound issues in conceptualizing intellectual property, software production elements encourage human factors interactive design, which philosophically abstracts the qualification of "useful arts" legal jargon. The difficulty in specifically defining "useful arts" legally as well as philosophically makes for vague claims. The "limits of abstract patent claims in

an intangible economy" lead to further abstractions compel defining what "abstract ideas" convey in the context of "useful arts" in both design and production.[36] With the prolific issuing of patents, unanswered questions in the court system remain. Chapter 2 elucidates an epistemological discussion about idea abstraction. In *CLS Bank In't v. Alice Corp* held July 2012, the court expressed concern over the effectiveness of the "abstract ideas" test and the potential adverse economic impact resulting from the test's uncertainty.[37] The U.S. Court system struggles to answer these questions or altogether neglects addressing esoteric epistemological issues. Another recent decision merely concluded that "a claim that is drawn to a *specific way* of doing something with a computer is likely to be patent eligible whereas a claim to *nothing more than the idea* of doing that than on a computer may not." [38]

Paramount to intellectual property protections, the fundamental issue of what an "abstract idea" entails pervades. Without arriving to consensus on this extraordinarily rudimentary, yet inherently complex, question incites outstanding legislative and policy matters and results in continual struggles with overly-broad and vague interpretations to intellectual property claims.[39] Like many judges who have encountered patent claims, Judge Newman, recognizes how modern issues raise philosophical intellectual property concerns, blatantly asking if the *Mayo Collaborative Services v. Prometheus Labs., Inc*. case in 2012, indeed, illustrated a "search for a universal truth: in the broad sweep of modern innovative technologies, does this invention fall outside the breadth of human endeavor that possibly can be patented under §101?" [40] Avoiding potentially metaphysical discussions risks consequences associated with impeding America's free culture environment.[41] In developing balanced governance for public welfare while maintaining private interest, a human factors element exists in the compilation and execution of machine code for the benefit of the end-user experience.[42] Ideas that underlie an invention may be broken down

to different levels of abstraction. The more abstract a claim, the greater the scope, the broader result of patent coverage.

Interactive design features are, in themselves, an abstraction of underlying machine functionality. Key inventive features often lie in the essence of the invention of human factors design.[43] This level of abstraction corresponds directly to the scope of the claim. Societal welfare requires more than free markets and market economics, and U.S. innovation requires necessary protection of creator's rights.[44]

Developing an Advanced IT Ecosystem

Along the vein of applying philosophical insights to modern life, innovation subsists as the cornerstone to genius and prosperity, where the culture of innovation lies in a culture of what it means to be human. Bridging legal and social issues in a multidisciplinary values approach that every human life is of inestimable value, it is in the tradition and mission of liberal studies, that of a classical understanding that lends a discerning mind to contemporary issues.[45] For a broader world view, understanding the classics contributes to deeper strategic analyses and discerning judgement. Production provides tremendous support to these strategic needs.[46]

Creating concrete, measurable, and reproducible progress, pragmatic approaches turn to new developments in today's science and industry response to the U.S. political strategy on innovation.[47] Transitioning from serving industrial age technology needs, MIT transformed itself into a leading incubator for the digital era.[48] A stimulating and collaborative environment brings together the world's best and brightest entrepreneurs, to help them nurture and transform ideas into real-world business solutions. Tech entrepreneurship is the "new sexy." Harvard Business School's I-Lab ("I" for innovation) embraces a full-throttle effort to transform itself into a leader in the increasingly important world of tech entrepreneurship.[49] Meanwhile, Stanford's d.School Design Group offers "innovative masters series" curriculums, pioneering strategic leadership in

innovation.[50] Major universities dramatically reinvent themselves in this thriving, new economy. In creative cooperation, lies the premise that motivating energies change the world. A world-class education in science and industry responds by recognizing that technology has the ability to foster equality and to create more just, stable, and sustainable communities. Reinforcing the human imperative to communicate across socio-economic sectors, then bridges data, big ideas, and knowledge transference.[51] Comprehensive studies on innovation and investigative treatise in multidisciplinary discourse adds breadth and wisdom to the complexities of innovation and creativity.

Immanuel Kant's theory of knowledge lends expertise to intellectual property protections in an intellectually emergent age. Technological advances continue to democratize, allowing people to make significant differences with minimal resources, simply by connecting. Harnessing the human imperative to create and produce, society flourishes. As communities prosper, innovation and cooperation initiates "world-class care." [52] The Information Age turned to Knowledge Age presents an array of resources and attitudes, creating a different mindset. The goal is both simple and ambitious. The speed at which technology develops, challenges the law to keep up. Merging the legal side and technical side echoes what is to come: distinct value orientations in multi-disciplinary approaches that create models of reform by re-redefining invention. The complexity of the world's greatest challenges exist, in part, as manifestations of classic demons where elegant solutions lie in the unity of the various conversations, not in the disciplinary isolation of smaller projects.

The "Vision for American Innovation" reflects government regulatory concerns as The White House attempts to address the "grand challenges" of the 21st Century.[53] Creating "National Policies as Platforms for Innovation" provide goals that are critical for local and global competitiveness.[54] Intellectual property rights stand out as distinctly national policies for

promoting innovation and increasing competitiveness. Markets need a sensible national competition policy, particularly one that encourages the integration of innovations to enable a country's economy can adapt to changing conditions. "Intellectual property law provides incentives for innovation and provides legal mechanisms for protecting and monetizing intellectual assets. Nations that open their markets to the forces of competition will see greater productivity and prosperity." [55] Governments focus on improving education and on finding the best ways to embrace technology. The rhetoric is persuasively consistent - no nation wants to be left behind. Countries that innovate prosper. Those that do not, face a steady decline in productivity. Pro-innovation policies support an innovative environment, largely as a result of different legal and economic policies at the federal level.[56] A few national initiatives include setting an open, competitive environment for businesses and individuals, encouraging high-growth innovative entrepreneurship, developing tech innovation clusters, innovation teams, research and development initiatives. Promoting intellectual property in competitive markets demonstrates one response to Age of Knowledge concerns where intellectualism serves as the most valuable and powerful durable asset (See APPENDIX II - *1. Innovation For Sustainable Growth & Quality Jobs*, p. 58).

Encouraging free and open tech development suggests a means toward innovative availability. The Obama Administration commits to increasing governmental response that promotes and harnesses innovation by encouraging departments and agencies to experiment with new technologies and by encouraging high-impact collaborations by tapping in to both public and private sector expertise to develop high-risk, high-reward policy tools that better solve tough world problems.[57] The Obama Innovation Strategy promotes investing in American innovation by developing an advanced information technology ecosystem, "for America to lead the world in the technologies of the future" and to lead competitive markets to spur productive entrepreneurship,

taking risks in the global exchange of ideas and innovation.[58] Essential to creating new and vibrant businesses that lead to new jobs and economic growth, the national innovation strategy focuses on pillars of lasting prosperity, including attention to our physical and technological infrastructure and avoiding bubble-driven growth of the past.[59] This vision seeks to promote a less litigious atmosphere that stymies innovation, creating tactical agendas that reinforce respect for intellectual property and developing appropriate legal doctrines, provisions, and acts for tech innovation to stimulate the economy. Actions such as these reinforce appropriate governance in the age where protecting intellectual property rights serves as material wealth for what it means to be human.

Current Government Regulatory Response & Inherent Policy Challenges

Recently, Justice Posner of the 7th District Court in Illinois stated that the malfunctioning patent system warrants sufficiently serious attention from Congress and the courts.[60] Recognizing the broken system's widely damaging effects on innovation and the economy, Posner stated, "The result is huge patent thickets, creating rich opportunities for trying to hamstring competitors by suing for infringement -- and also for infringing, and then challenging the validity of the patent when the patentee sues you." [61] He maintained that patent protection in the software industry is "on the whole, excessive" and called for necessary, major reforms because the "one size fits all" model lacks effectiveness.[62] According to Posner, "Intellectual creativity in fact if not in legend is rarely a matter of creation *ex nihilo*; it is much more often incremental improvement on existing, often copyrighted, work, so that a narrow interpretation of fair use can have very damaging effects on creativity." [63]The possibility of adapting patent policy to different industry-specific needs raises "provocative conversations." [64]

Other initiatives to the patent system include the American Invents Act (AIA) signed into law in 2011.[65] Representing the most significant change to the U.S. patent system since 1952, the

Act switches the system from a "first to invent" to the reflect a "first to file" system more in line with european counterparts. Central provisions take effect March 16, 2013.[66] One of a few major contentions, critics argue, is that the new law favors larger, well-established tech firms who have the internal resources for patenting over small business inventors, where the majority of tech innovation arguably arises.[67] Additional contentions exist, though of lesser value or negative impact to American innovation.[68]

Recognizing the urgent need to ensure greater cooperation in intellectual property standards internationally that allow U.S. technologies to compete, the USPTO has responded with the desire to administer the patent system effectively and issue high-quality patents on innovative intellectual property, while rejecting claims that do not merit patent protection.[69] Recent roundtable events held nationally sought input from scholars, technologists, and large tech corporations.[70] In February 2013, Congress re-introduced the SHIELD Act, a bill that directs responsibility to non-practicing entities to cover legal fees and costs if the courts determine patent invalidity or non-infringement.[71] Noticeably having a critical impact on innovation and the U.S. economy, policymakers develop timely legislation in response to an encumbered tech patent system (See APPENDIX I - *Current Patent Trends*, p. 57).

The Age of Knowledge and Communication

In "The Age of Human Capital" as Gary Becker famously coined, this Knowledge Age exhibits a revolution in cultural communication, that of the human vocation to communicate in a free culture environment.[72] As society enters into new intellectual property landscape, the "explorer" mentality overrides that of the American colonial "conqueror" or industrial mindset (See Illustration II). A Knowledge Age, also known as an "Intellectual Property" Age, demands protection in the manifestation of prolific intellectual property rights, by which self-creators hold responsibility and entitlement to the products of their own mind.[73]

Balanced intellectual property protections serve as an equitable means for innovation where stability, sustainability, social change and economic viability may be found. The social atmosphere calls for shifts in maximizing gains and opportunistic promotions over minimizing losses, fulfilling responsibilities and acting with vigilance in a prevention-minded mindset.[74] The intellectual property complaints of 2012 requires new paradigm shifts to solve.[75] Still, what pervades throughout history even in the digital area of connectedness is the universal premise that communication leads to knowledge, which reinforces what it means to be human.[76]

CHAPTER 2

INHERENTLY ABSTRACT INVENTIONS

Geniuses, just as the stars, must shine without pay.

- Swiss saying, *Innovation and Its Discontents*[1]

In the software patent case *CLS Bank Int'l v. Alice Corp* held on February 8, 2013, the Federal Circuit remained deeply divided about what constitutes an abstract idea.[2] The alleged infringer CLS Bank filed a brief arguing that patents owned by Alice Corp lacked "any core inventive concept and therefore lacks subject matter eligibility under Section 101 of the Patent Act" after Alice originally sued CLS claiming four infringement allegations covering "a computerized trading platform for exchanging obligations in which a trusted third party settles obligations between a first and second party so as to eliminate 'settlement risk'." [3]Because §101 of the Patent Act provides, "Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title," the courts investigated the "notion of 'preemption'" to further elucidate §101's "abstract idea exception." [4] While subject to the statute's three exceptions : laws of nature, physical phenomena, and abstract ideas, patent categories typically cover "processes, machines, manufactures, and compositions of matter." [5] Thus, a patent application "may be denied, or an issued patent may be ruled invalid, if it is deemed to be drawn to an abstract idea." [6]

Of particular importance in the field of software and category of business method patents, lies inquiries highlighting the imperative that "the patent laws not inhibit further discovery by improperly tying up the future use of 'laws of nature." However, preemption exploration leaves the long-unsettled question of what constitutes an "abstract idea" unexplained and unclear.[7] Thus, determinations of un-patentably under Section 101 of the Patent Act remain obscure.[8] If the

totality of the patent describes how to implement or apply an abstract idea, then it is patentable under §101, judges contend.[9] However, law constituting *stare decisis* goes back [more than] 150 years.[10] Any worthy discussions of the meaning of an abstract idea remain notably absent from *Bank v. Alice* as well as SCOTUS decisions, regulatory discussions, including from bodies legislating intellectual property. Indeed, any ambiguity in the definition of abstract idea "causes the most confusion regarding subject matter eligibility." [11]

Intellectual property patent claims covering inherently abstract inventions exists when the level of abstraction of a patent claim corresponds directly to the scope of a claim. A patent claim must define the "essence of the invention" disclosed in a patent, delineating the key inventive features of the claimed subject matter.[12] To the benefit of the patent filer, the more abstract a claim is, the greater its scope is, and the broader the resulting patent coverage. However, ideas that underlie an invention deconstruct into many different levels of abstraction. It follows that"drafting" a patent claim to a computer implemented information processing innovation in the broadest terms permissible by the prior art involves reciting an abstraction of software features, which themselves are an abstraction of the underlying functionality of the machine. The challenge of defining a boundary between an abstract idea and patentable subject matter for tech patent claims having abstraction-upon-abstraction proves formidable to say the least." [13] Current patent issues toward software interpretations that remain extensive and where highly technical jargon reflects subject matter expertise, extend beyond legal scholarship.

The best and most effective solution to these inherently complex issues, where multifaceted problems persist across various industries, remains murky and contentious. Founding fathers and classical interpretations of intellectual property root in philosophical notions. Recent scholars warrant philosophical discussions limited grounding amidst contemporary discussions, having branched away from this methodology or finding narrow

consensus surrounding theoretical disputes. I argue that in light of challenges posed recently, the need to revisit classical interpretations provides an imperative for a solutions-oriented architecture essential to intellectual property's sustainable growth. The framework set by the philosophers helps elucidate the current situation under historical context.

One 18th century philosopher offers a conceptual model that addresses a few contemporary challenges to patent law interpretation. Immanuel Kant provides an epistemological interpretation of intellectual consciousness where his theory of knowledge presents a controlled theory of cognition.[14] His investigation of epistemology elucidates contemporary queries about the meaning of "abstract ideas." In this way, Kant's theory of knowledge echoes Plato's view of the innate structural mind. Aesthetic judgement, the talent needed for universal expectation, lies in spirit which then leads to a profile of creativity as part of an inventory of operating mental faculties. Kant's work in the *Critique of Pure Reason*, *Critique of Practical Reason*, and *Critique of Judgement* lays out the complicated approach to inherently abstract inventions based on inherently abstract ideas.[15] For the purposes of this thesis, I summarize the web of faculties and concepts, more or less, in linear form for the purposes of clarity. In reality, the concepts of aesthetic creativity and mechanics for causal productivity exist in multi-dimensional inter-relation, not as easily qualifiable concepts of knowledge as Kant's sensitive and nuanced interpretation suggests.

The Nature of Ideas & The Faculty of Freedom

As recently as March 20, 2012 in *Mayo Collaborative Services v. Prometheus Laboratories, Inc*. the courts questioned whether Prometheus's patent held an un-patentable mental step, observing a relationship between metabolites, efficiency, and toxicity.[16] The question of the claim constituting patent-eligible subject matter, whereby processes incorporating a fundamental principle may be patent-eligible under §101, called for physical transformations or if

the claims encompassed correlations, and therefore natural phenomena, deemed to be "natural law." [17] SCOTUS viewed *re: Biliski's* "machine or transformation" test as an "important clue" to patentability.[18] And yet, SCOTUS concluded that "we must recognize the role of Congress in crafting more finely tailored rules where necessary. . . We need not determine here whether, from a policy perspective, increased protection for discoveries of diagnostic laws of nature is desirable." [19] The question of patentability and abstract ideas related to mental processes, where SCOTUS determined that issues of natural law were considered "specifics" beyond their jurisdiction. On July 5, 2012, the USPTO evaded defining and describing what an abstract idea or natural law entails, offering only that "process claims in which a law of nature, natural phenomenon, or naturally occurring relation or correlation is a limiting element or step," to patent law.[20] Thus, further investigation of Immanuel Kant's theory of knowledge helps elucidate these pertinent and outstanding epistemological questions that both the courts and patent regulators encounter.

Amidst the deeply-rooted desire to heal a malfunctioning patent system sits a philosophical framework explaining the nature of ideas. The strategy for diagnosing the problem, underlying the problem, exists in distilling the central issue. The limitations of intellectual legal interpretations with respect to tech interactive design involve different functions of the mind. The faculty of reason and the faculty of understanding both play a role in creative innovation. Reason, the faculty of "The All" is free of time, occurs spontaneously, and is based on insight that cannot be illustrated or taught. The faculty of understanding, meanwhile, is a toolbox for appropriating data-oriented units. Time causal elements help organize data in a temporal sequence that can be illustrated by images. The faculty of understanding is a productive activity creating concepts, that can be taught and appropriated. Underlying the legal understanding of tech patent's useful arts denotes a critical categorical mistake in the interpretation of abstract ideas and external concepts.

Reason collaborating with imagination cannot be treated as real property, whereas actualized concepts may be owned and controlled.

The existence of inherently abstract inventions, Kant would contend, fundamentally lies the nature of ideas, wherein abstract ideas exist beyond space and time. "Such presentations of the imagination we may call *ideas*. One reason for this is that they do at least strive toward something that lies beyond the bounds of experience . . . indeed the main reason, for calling those presentations ideas is that they are inner intuitions to which no concept can be completely adequate." [21] The nature of ideas exists in imagination, that of ideas that can allow for insights.

Imagination's driver is the intellectual faculty of reason, that is both limitless and timeless. Human agency's internal law compels beauty, as a natural symbol of freedom: freedom in the mind and therefore freedom of knowledge. The mind's creative capacity involves reason, and the way the mind feels its own state. Possessing an energy of indefinite flexibility, the creative moment illustrates a purposiveness without purpose, outside the vocabulary of "things" and "concepts." Aesthetic judgement naturally symbolizes human autonomy. "The presentation aesthetically expands the concept itself in an unlimited way, then the imagination is creative in [all of] this and sets the power of intellectual ideas (i.e reason) in motion . . . ." [22] Creativity produces energy which then generates ideas, not sterile concepts. The special faculty for creativity is not a cognitive faculty, an understanding nor a logical explanation, but rather involves the faculty of reason. Creativity roots in neither causality nor empiricism. Packed with a feeling or essence of energizing possibilities, beauty involves mental faculties that help produce the aesthetic idea.

Examining the abstract nature of ideas decisively delineates the legal basis for intellectual property, and therefore, explains the reasons why inventions appear inherently abstract. Categorizing intellectual property entirely as real property, that of a tangible asset, results in a

critical categorical mistake. Two main elements characterize the intrinsically separable faculties of knowledge, both the ideas generated and the concepts that result. Ideas encompass inherently abstract components of genius and creativity, while concepts hold attributes of mechanical productivity and the components of real property. This chapter focuses primarily on the philosophical and metaphysical abstract nature of ideas which comprises inherently abstract inventions. Naturally broad, aesthetic ideas cannot be reduced to single expressions wherein conclusions can be logically compelled.[23] Treating creativity as real property is a creative mistake which cannot be explained. Creativity entails reason and the intellect collaborating with imagination. The general profile of creativity is the core aesthetic element. The properties of genuine creativity holds an aesthetic foundation in "geist," a spirit, energy, or a moving force qualitatively different from how science is defined. Spirit cannot be treated as real property, a concept of temporal construct. Herein lies the basis for the prolificacy of abstract ideas, created and produced in part by mental faculties.

The theoretical philosophy of Kant's theory of knowledge provides a practical dimension to policy design and implementation. A thorough comprehension of Kant's theory of aesthetic creativity combined with his mechanical principles for causal productivity provides universal solutions to contemporary problems. Patent claims bound by time and space, of finite material may be conceptualized by patent protections. Today, mixed objects of "useful art" entail pure aesthetic objects of clear practical purpose. Practicality depends on aesthetic success. Such practicalities of property can be possessed, but insight and aesthetics cannot. The aesthetically beautiful harmoniously transcends the world of space, time, numbers, and the empirical world. There is more to reality than the organizing categorical implications of science. Aesthetic appreciation depicts science as the production of an object of beauty. These two faculties of

insightful feeling and concept influence intellectual property's proper functioning and structure of statutory law.

The ability to think rationally, logically, and to draw inferences relies on reason. Reason is the faculty for human freedom, for seeing the "whole" of something. Reason enables the mind to step back from sequential processes and see the system in entirety. The mind has foresight to see the whole picture which negates time. "Thinking by Reason" involves the "Totality of Things," the sum total of what is real, that of knowledge, and how it fits together in what Kant defines as the "Das All" of reason, thinking in totality. Reason is insight not caught up in the particularities. It holds no idiosyncrasies or cultural obstacles but exists in purely universal form.[24] Reason involves two components, the theory of aesthetic creativity and genius. The special, creative capacity of the mind produces energy. Not a sterile concept conceptualizing itself in the creative idea is born the way the mind feels about its sense of as free self. It deals, not with the mind as a thing, but with the mind as a feeling or an essence. The creative energy produced in the way the mind feels about its own state, is not reducible to concepts.[25] The creative idea is packed with productive energy. Indefinite modes of creativity results from freedom. Different from the source of knowledge, the aesthetic idea produces creativity. Genius is the mind's capacity for giving a rule to the imagination to produce something beautiful. The rule of reason involved with imagination helps create new ideas. These rules leave faculties free to work in conjunction with the understanding's sense of taste to create the foundation of invention. Genius, at the core, holds incorporeal elements.[26]

Indeed, modern American courts' interpretation of the faculty of genius remains historically ambiguous. In 1944, the USPTO illustrated a general misconception of genius in when it instituted a "Flash of Genius" test for invention, arguing that "the interest in patents of highly trained technical men is not paramount to but incidental to and the result of their work in

their particular field." [27]The validity of patent requirements depended on vague interpretations of genius to determine patent's set of exclusive rights granted to the creator. "The circumstances under which the alleged invention was made were ordinarily not examined. The oath of the applicant was considered as a sufficient *prima facie* showing intention provided the article itself was sufficiently novel. This principle simply emphasizes the importance of individual achievement which is the aim of the patent law." [28] The inherently abstract nature of "genius" exacerbated patent debates surrounding "novelty" and "non-obviousness" qualifications. The mental powers of combining imagination and understanding constitute genius.[29]

Genius consists of the ability to "hit upon a way of *expressing* these ideas that enables us to communicate to others, as accompanying a concept, the mental attainment that those ideas produce." [30] Moreover, the ability of genius involves "spirit," that of insight, intuition, and essence.[31] Recognizing that "there is no invention without inventive genius," the courts eventually admitted the problematic nature of the "Flash of Genius" test, trending toward "the character of the individual achievement rather than the qualities of the product in determining patentability." [32]The advent of technological patent claims exacerbates patent's set of exclusive rights granted to the creator, by once again raising epistemological concerns. Interpretations about "novelty" and "non-obviousness" are brought to the fore. Historic precedence also reflects recent patent decisions that attempt to pass a law protecting a creative idea, inadvertently mimicking the 1944 "Flash of Genius" notions, when emphasizing a return to "the character of the achievement" over "patentability qualifications" and where the burden of proof of patentability lies with the applicant rather than on a consistent philosophical basis.[33]

The aesthetically abstract idea is a product of reason working with imagination. "Fine art must necessarily be regarded as arts of genius." [34]Aroused by humans' natural artistic ability nurtured in free play, genius manifests the immaterial, non-quantifiable essence.[35] "Genius is the

exemplary originality of a subject's natural endowment in the *free* use of his cognitive powers." [36] Where the faculty of art and genius leads to knowledge creation, Kant accordingly maintains that freedom, the necessary characteristic to harness the faculty of genius, enables invention to occur. "The principle of the human will, as a will universally legislating through all its maxims, is a principle of autonomy." [37]The mind feels its own activity in interaction with itself, feels itself, and thus generates the excitement in creating a work of art. The moving force of an aesthetic idea creates a breeding pool of mental energy, where aesthetic creativity captures the essence of energy where "the judging person feels completely *free* as regards the liking he accords the object." [38]This feeling of freedom compels feelings of excitement in "thinking by reasoning," seeing the totality of things. The will, "subject to the law in such a way that it must also be viewed as self-legislating," is the necessary characteristic for genius. The faculty of genius invokes the creative process. Genius calls forth the universal aesthetic moment.[39]

Freedom is "the key to the explanation of the autonomy of the will," and relates to a non-corporeal substance of spirt in autonomous play. Freedom is "only an idea of reason" in purposeful play of the powers of our mind.[40] The individual who follows his reason is "free in a much grander sense, that of legislating to himself and to nature . . . . The complement to and explanation of this view of freedom is creativity." [41]Aspects of the free spirit involves this atemporal, boundless and timeless quality of abstractness where "every rational being that has a will also the idea of freedom, under which alone it acts." [42] The *Spirit [Geist]* "in an aesthetic sense is the animating principle in the mind. But what this principle uses to animate [or quicken] the soul, the material it employs for this, is what imparts to the mental powers a purposive moment, i.e., imparts to them a play which is such that it sustains itself on its own and even strengthens the powers for such play." [43]"It is this feeling of freedom in the play of our cognitive powers, a play that yet must also be purposive, which underlies that pleasure which alone is

universally communicable although not based on concepts." [44]An exciting breakthrough exists when "aesthetic creativity captures that essence" in autonomous play.[45] "Because the process cannot be explained, it cannot be reduced to a controlled formula, and therefore, the aesthetic idea cannot be treated like property, because the spirit which has an innate plasticity cannot be treated like the temporal construct of property. An idea, like the spirit, has the ability to mutate." [46] Playfulness brings forth atemporal qualities of insight. "Geist" catalyzes the faculty of genius, contributing to the participatory quality of minds in touch with other minds and cultivating the essence of knowledge.[47] Freedom leaves a signature on a product that feels inexhaustibly interesting.[48]

The abstract idea furnishes a timeless, aesthetic response because the mind works in connection with reason and imagination. Aesthetically driven, ethereal ideas possess qualities of infinitude. While imagination represents the ability for image-making, reason provides the internal legislation for the creation of abstract ideas, ideas that may be applied to a concept. This "aesthetic legislation" intrinsically begets moral code, protecting creativity's influence on abstract ideas. Illustrating aesthetic universality, Kant argues, "The beautiful is what is presented without concepts as the object of a universal liking . . . this explication of the beautiful can be inferred from the preceding explication of it as object of a liking devoid of all interest. For if someone likes something . . . then he cannot help judging that it must contain a basis for being liked [that holds] for everyone." [49] The aesthetic idea creates the "ought" without conceptual basis. Different from a cognitive response capable of proof, the aesthetic imperative is an intrinsic response that conveys a judgement of non-scientific, constitutive necessity. Not taught or learned, internally legislated moral judgement lends itself to reason for productive imagination. An individual "must believe he is justified in requiring a similar liking from everyone because he cannot discover,

underlying this liking, any private conditions, on which only he might be dependent, so that he must regard it as based on what he can presuppose in everyone else as well." [50]

The aesthetic imperative is not a cognitive judgement capable of proof. Aesthetic judgement exists, not as an image based on a concept, nor connected directly to a cognitive judgement. One "should" agree with a subjective standard about a feeling invoked. This essential etherial quality of an idea evokes beauty.[51] The act of "liking" indicates the mind's feeling of a sense of purpose, that enables a sharing of feeling in a purely subjective state. Aesthetic response combined with a subjective feeling revolves around freely moving energy lying at spiritual foundations that invokes some standard. This non-conceptual standard underlies an aesthetic judgement. Moral law implies a freedom in which the creative moment is purposive without specific purpose. Paralleling ethics and aesthetics, genius itself "cannot describe or indicate scientifically how it brings about its products, and it is rather as *nature* that it gives the rule." [52] The faculty of genius constitutes both this piece of "aesthetic legislation" and "geist," an energy that has indefinite flexibility outside the vocabulary of things.[53] In the development of an aesthetic idea, the mind feels a sense of timeless freedom. The product of reason works with imagination. Free of particularities, the non-corporeal idea flourishes into inherently abstract innovations.[54]

Kant distinguishes between ideas and concepts, where ideas are inexhaustible and infinite, filled with aesthetic energy. Imagination is that of image-making, building the image into one. No illustration of an idea can exhaust the idea. While creativity can be nurtured, real creativity depends on non-mechanical faculties that involve genius in a beautiful presentation of timeless quality, that moves beyond time-dependent state of static technique. The distinctive quality of an abstract idea cannot be reduced to a conceived design devised for a specific function or end. Philosophy attempts to explain the reason for the "ought" in the explanation of the aesthetic imperative. Due to the essentially free-spirited qualities of aesthetic creativity, and

creativity's role in the faculty of understanding, Kant foretells contemporary problems in misconstruing the external, temporal-bound qualities of temporal-bound conceptual designs:

> He will talk about the beautiful as if beauty were a characteristic of the object and the judgment were logical (namely, a cognition of the object through concepts of it) even though in fact the judgment is only aesthetic and refers the object's presentation merely to the subject. He will talk in this way because the judgment does resemble a logical judgment inasmuch as we may presuppose it to be valid for everyone.[55]

Issues in the court system partially exist due to misunderstandings about the role of aesthetic creativity. Patenting inherently internal processes such as beauty and reason is not possible. The philosophical task is to present aesthetic judgement where it legitimately possesses good taste, in the sense that one "ought" to like something in purposive orchestration where the mind has a feeling to make sense. "Judgement of taste must involve a claim to subjective universality." To this end, universal rules of natural law can not be reducible to concepts.[56]

The exclusion of ideas, as tech patent law currently stands, restricts that which is given in nature. What is given in nature, is that "Geniuses, just as the stars, must shine without pay." [57] Kant's interpretation of aesthetic creativity as part of the theory of knowledge helps clarify the role of and development of abstract ideas to the exclusion of patentable materials. The theory of knowledge orchestrates two rules: aesthetic fine art and the rule of freedom that reason gives the imagination to create ideas of abstraction, and technical production discussed in greater detail in Chapter 3. The abstract idea entails a moral and aesthetic freedom where time and causality do not play a role. Inherently abstract inventions are fueled in part by inherently abstract ideas. The basis for abstract ideas lies in the abstractions of both aesthetics and genius. In every kind of creative productivity, the element of the unknowable exists, which places creativity beyond the reach of patents. Creativity is the rule for producing art, a beautiful production. Protection of an idea is counterintuitive. The idea holds an element of the "unknowable," unknown properties

encapsulated in "geist" and driven by purposiveness.[58] The incorporeal essence of ideas that legislate the origination of patented concepts. Patent exclusions to infinite ideas, conceivably hinders policymaking and burdens the courts in the determination of who owns ideas, inherently unlimited and nonexclusive.

The essence of creativity leaves logical space for the human being to harness culture and civility in this communication of knowledge, but also of feeling which plays an essential role to the sciences.[59] To be civilized is to share intrinsically subjective feelings where the essence of the human being is in touch with other minds through "geist," and the appreciation of artistic beauty.[60] The universality of beauty fits perfectly in a harmonious operation of meaningful and pleasurable experiences, that exceeds the ability of human's most powerful empirical faculty and the intellect to handle. Transcending the world of space, time, numbers, and the empirical world, that of aesthetic appreciation illustrates a reinforced freedom aesthetically significant to choice.[61] This aesthetic feeling of awe, a form of "aesthetic ought" in regard to self, is that which allows a feeling about the moral law which produces "respect." [62] Communication with one another allows for creativity to flourish. "The aesthetic power of judgement deserves to be called a shared sense. . . We could even define taste as the ability to judge something that makes our feeling in a given presentation *universally communicable* without mediation by a concept." [63] It is the human vocation to communicate.[64] "A concern for universal communication is something that everyone expects and demands from everyone else." [65]Abstract ideas, prolific in the digital data era, contribute more often than not to step-by-step progress of the entire group, not the sole achievement of an individual.[66] Organized technology invention changes the entire process where, some critics argue, "The man who finds the needle shows no more 'genius' and no more ability than the others who are searching different portions of the haystack." [67]

Conceptions about intellectual property may re-craft legalese, regulation, and policy to work for the benefit of universal imperatives and the essence of human creative fulfillment. Specifically, Kant's theory of aesthetic creativity allows for regulatory redesign and shift in legislative attitudes toward innovation, while protecting individual creative works. Less ambiguous concepts, as Chapter 3 describes, limits the scope and claims of patents. Concepts illustrate the faculty of understanding drives the elastic limit to what a human imagines. In applying his concepts, we may rethink intellectual property's "business-method process" in software interactive design processes that best allows humans the ability to socially, intellectually, and economically flourish across borders. This reiterates, then, the necessity to clarify language.[68]

Reframing the philosophical approach in terms of Kant's universal categorical understanding and value system helps provide one theory of knowledge that moves toward a proper conception of intellectual property. Fundamental underpinnings encourage a universal understanding of innovation and the human factors element to interactive technological design.[69] Naturally providing the human vocation to communicate, intellectual property is one means by which humans may connect and evolve.

CHAPTER 3

CLARIFYING LANGUAGE & LIMITING PATENT SCOPE

> He who receives an idea from me, receives instruction himself without lessening mine; as he who light his taper at mine, receives light without darkening me.
>
> - Thomas Jefferson, *The Writing of Thomas Jefferson*[1]

Cleaning Up the Language of Intellectual Property

The Limits of Patent Law In Connection to The Nature of Ideas

At the heart of enforcing a rule-based intellectual property system lies the necessity to distinguish between an idea and a product, and what realistically one can claim ownership over. This chapter explores how Immanuel Kant's theory of knowledge informs the conceptual confusions riddling the U.S. tech patent system by clearing linguistic ambiguities, allowing for minimal manipulation, and disclosing the contradictions. This chapter delineates the scope and clarity of the term "concept" and the mechanical processes involved in production. Comparing and contrasting linguistically the nature of ideas may prove misleading, when used colloquially and when, in reality, the faculty of concepts most accurately suits the need of intellectual property patenting. Kant's theory of knowledge harmonizes incoherencies by reframing the language of intellectual property to characterize distinctions between ideas and concepts for the purposes of tech patent law.

A common language for discourse serves as an instrument of control over public policy affairs. It enables legislative gravitas in public communications and protections, supplying the wherewithal to address challenges particular to the Knowledge Age. In clarifying the vocabulary and the scope of linguistic expressions particular to the evolution of intellectual property, clarifying the ambiguity of key terms generates a productive linguistic device. I argue that language, for the purposes of effective communication, contains linguistic terms that may be

repurposed for the benefits of clarity and conciseness. Rethinking language holds evolutionary qualities, like addressing contemporary challenges that the Knowledge Age presents. The application of philosophy helps clarify these categorical and metaphysical nuances. Reinforced through iteration in civil law, language may serve to clarify, not increase vagueness in an already conceptual land mine of complicated and complex thought, riddled with intricacies. Maturing language satisfies a purposeful means to the authentic understandings of the mind's faculties. It serves not to further obfuscate. Based upon philosophical expositions, I offer Kant's interpretation of definitive boundaries to the discourse on knowledge that translates the ambiguous language of intellectual property into clear, concise, and consistent terminology.[2] Furthermore, language deciphers incoherencies between ideas and concepts, elucidating the the qualities of intuitively artistic development to software that provide for a mechanistic causal approach. To be civilized, Kant argues, is to posses a language of discourse.[3]

In the absence of scope and clarity, categorical issues inevitably arise. UC Berkeley intellectual property scholar Robin Feldman contends that naturally interpretable language provides the ability to "negotiate" traditionally vague tech patents in an inherently abstract intellectual property system. Inherently vague language poses challenges to the tech patent problem, and an innate desire to clarify linguistic terms exists. She notes, "Even after claim construction, the meaning of the claims remains uncertain, not only because of the very real prospect of reversal on appeal but because lawyers immediately begin fighting about the meaning of the words used to construe the words of the claims." [4]Pointing out many of the linguistic quandaries to the construction of tech intellectual property issues, Feldman further concludes that language intrinsically provides the ability to negotiate. Feldman asserts, rethinking patent law resides in the human ability to embrace and accept inherent limitations of language and the imperfect system that results.[5]

Be that as it may, this thesis challenges the conventional use of language and time fixation in the interpretation of intellectual property. The Kantian theory of knowledge creates a shared conception of language where "truth is enshrined in language," as one philosopher notes.[6] I investigate the essential truth to any invention, the shared conception upon which we would all agree, that conception must be represented by words in the patent.[7] Once truth is enshrined in language, as a commonly accepted form, perhaps then we can better create tests to avoid twisting and turning language in a myriad of far-reaching directions. With regard to philosophers who are keen to develop clear language use, Kant provides guidelines for useful arts terminology, an investigation into how the mind creates aesthetics, and developed language normalcy, highly relevant to patent protection. In the realm of patent law, obscure language presents particular challenges.[8] Challenges in patent law may not be insurmountable with regard to language and the way in which policymakers, legalists, and technologists communicate patent's bounded set of rights.[9] Where language nuances and interpretations may endure ad infinitum, developing stronger and clearer general rules and guidelines from a philosophical perspective can guide patent scholars and enable the courts and technologists to commence a linguistic form of articulated precedence into their patent law cases.[10] The more abstract the form, the greater allowability for cryptic reinterpretation that surrounds patents.[11] Kant's theory of knowledge lends a clearer understanding surrounding the art and science of patents.

Differentiation Between Ideas & Concepts

Notions of aesthetic creativity fundamentally differ from the mechanics of causal productivity. Both ideas and concepts are produced by different faculties and play dissimilar roles. The universality of aesthetic creativity, tied to the faculty of reason "The All," cannot arise from concepts.[12] The distinctive quality of the idea itself in entirety cannot be reduced to a singular form of product design. Inexhaustible possibilities in multiple designs lack theoretical

limits to indefinitely expressible ideas. “The consciousness of a law for acting: that the subjective principles of actions, i.e. maxims, must always be so taken that they can also hold objectively, i.e. universally as principles, and hence serve for our own universal legislation.” [13]Such use of creativity is the device for, and result of, innovative energy.[14] In every kind of creative process, the element of the unknowable exists. All creativity must have an aesthetic element, which begets feelings of excitement and places creativity that articulates the mind’s possibility, beyond the reach of patents. That of aesthetic pleasure and creativity puts minds in touch with other minds in an ever interesting array of delight. To share endlessly private feelings in a social realm cannot be fathomed by the exchange of a time-bound concept alone.[15] “Incumbent upon speculative philosophy,” ideas serve concepts in the duty only to “clear the way for practical philosophy.” [16]

Intuitions aid conceptual thinking. To be sure, “concepts without intuitions are empty.” [17] Seeking “to deduce a priori synthetic knowledge simply from the unschematized (pure) concepts of the understanding,” not unlike what the current patent system demands, is “doomed to fail.” [18] A conceptual product design involves some form of aesthetic creativity where the faculty of concepts produces and actualizes. Aesthetic rules apply directly to the mechanics of causal productivity, the rule for producing a world both imagined and understood. Feelings do not have necessary entailments. Concepts generate necessary entailments in an image-based world.

The concept as “a logically conditioned aesthetic judgement” is the unique design of a specific procedure and the external recognition of the mind’s formal limits.[19] The faculty of concepts function as “instances,” or substantiations of an idea.[20] Time dependent concepts involve the category of causality, allowing for systematization. Concerned with conceptual images, these rules for organizing images in space and time controls the shape of data, explaining the image world. Put in another way, concepts define the spatial/temporal scientific rule for producing the mental products of images constructed by rules into understandable images. The rules of image-

making apply to the temporal condition only work when applied to data on a timeline. “If we want to think of a being as rational and endowed with consciousness of its causality with regard to its actions, i.e. with a will . . . .” then to the idea of “freedom to every being endowed with reason and will” ascribes “this property of determining itself to action . . . .” [21]Concepts, as the rule for doing, operate finitely, as mechanical products compelled by the theory of scientific judgement that can force a conclusion. The expression of an idea, that of tangible products and specific objects, are realized through concepts. A design is the predicator to invention. It exists as a combination of the idea and a product in the mechanics of causal productivity.[22]

Tied to temporal sequence, concepts are the category of causality, rules for assembling information in time, for the purposes of interpretation. “Causality lies in him as an intelligence and in the laws of effects and actions according to principles of an intelligible world, of which he may well know nothing more than that solely reason . . . .” [23]Time dependent categories are a type of sequentialization. The necessary condition to apply the category of causality is that a cause/effect situation occurs in a temporal sequence. The essence of limitless energy in the production of ideas uses, not the language of things to converse about creativity, but the articulation of the mind’s recognition of the formal limits and procedures of the mind’s own boundaries. Both the “phenomenon in the world of sense,” and the subjects of causality “can, and indeed even must, take place at the same time.” [24]

Part of the innate structure of the mind in relation to the static being, is the interpretation of identity, as the mind takes incoming data and interprets through a spatial, temporal sequence, in the way that the mind is built in causality. The individual must “represent and think of himself in this twofold way rests, as regards the first on consciousness of himself as an object affected through the senses . . . .” [25]The mind is dependent on identity and conscious of time and sequence. To put differently, the intelligent mind endowed with will, consequently reflects on

itself as subject of causality. Time relativity is consistent with consciousness. He perceives himself differently, when "he thinks of himself as an intelligence endowed with a will, and consequently with causality." [26]The internalizations of the mind differ from external practicalities, "when he perceives himself as a phenomenon in the world of sense (which he actually is as well) and subjects his causality, according to external determination, to laws of nature." [27]

The mind makes things. "For that a *thing in the appearance* (belonging to the world of sense) is subject to certain laws from which just the same *as a thing* or a being *in itself* is independent, contains not the least contradiction . . . ." [28] Concept is a biological metaphor of "begriff" - to grip. To grip a drawing in process, then allows for controls, and therefore rights attached to thinking "denken" about a thing, "ding." Scientific necessity compels universal agreement: a priori forms as a force for agreement that cannot deny a conclusion. The theory of objectivity of scientific judgement forces a conclusion where "those laws concern him immediately and categorically . . . ." [29]Shapes created as part of the empirically-drawn, physical world becomes scientifically understandable. Embedded in physics and engineering, the way "how" the production of a creative work transforms in to mechanical art.

Productivity ensues, as part of the process of knowing what is to be produced and how to produce it. The mechanics of causal productivity in the physics and engineering differs from the aesthetic productivity that focuses on the "feeling" for an aesthetic idea. Where creativity in itself does not follow rules, the production of rules may enhance creativity.[30] The concept is the rule for doing, which in simultaneous productivity, protects the element of the known - not the element of an idea in the "unknowable" factor. Different from aesthetic productivity, which has a "feel" for it, the feeling of the creative idea applies to the mechanics of causal productivity. Once the aesthetic idea is established, the marketable product of creative invention in the use of reason "belongs to the world of understanding" and allows for productive legislation.[31] In causality lies

"the laws of effects and actions according to principles of an intelligible world . . . and indeed pure reason independent of sensibility, gives the law in it," as a practical law.[32] The principle of actions conforms with "the essential characteristic of a rational cause, i.e. with the condition of universal validity of the maxim, as a law." [33]The concept takes "outside appearances, in order to think of itself as practical." [34]Order and legislation applies to the world of sense, and "makes necessary the concept of an intelligible world." [35]The objective reality, in its formal condition can demand a law of operation. Meanwhile, freedom exists as "a mere idea." [36]

Essential to invoking intellectualism's finite property conditions rests in understanding the fundamental roles and interdependent relationship between conceptual thinking and intuitive ideas. Legislative jurisprudence affectively impacts that which possesses finite and measurable, quantifiable metes and bounds. Statutory law minimally influences atemporal, timeless, and boundless essences, where the idea legally does not work like a concept, and therefore cannot be treated like a tidy concept that produces images.[37] To accept that the practicalities of contemporary intellectual property legislation currently embodies these two elements, that of the eternal essence and that of the conceptual products, is to assume an impossible mission. That is to say, the same unattainable task entirely equates to explaining contradictions in "how freedom is possible." A similar overstepping of bounds might be if reason "undertook to explain how pure reason can be practical . . . ." [38] That element of freedom, the eternal essence of an idea in what it means to be human, can thus "never be comprehended or even just inspected because it can never be underpinned by an example of anything analogous." [39]However, it is within reason to socially legislate and legalize "the appearances" over which ideas stand, admitting that behind appearances lie "hidden things at the foundation." [40]Discourse on the theory of knowledge conceptually transforms the systematic role of federal policy on the practical use of reason. Exploring valid possibilities to operational concepts nurtures an environment upon which the

practicalities of insight and innovation rests. Statutory laws protect practical and finite concepts for the purposes of protecting the essence of human infinitude.[41]

This chapter intends to provide a blueprint for nailing down the language used in legal circles regarding intellectual property. Language clarity and scope encourages rich, not excessively malleable, interpretations. Any other use consists of mere temporary and expedient remedies to deeper, persistent, and growing moral dilemmas. Applying this language, re-conceptualizes software patent application, issuing, claims, and policymaking procedures of intellectual property at the highest levels. Encouraging a trickle-down effect in intellectual property theorizing, may provide suggestions on how the courts may evaluate technology patent cases. Ultimately patent law's private property attributes possess public law implications, where protection for inventors, and likewise, the public's ability to invent are realized. An investigation of Kant's theory of aesthetic creativity compared to the mechanical principles of causal productivity allows for the redesigning of regulatory and legislative attitudes toward innovation. The theoretical philosophy of Kant's theory of knowledge provides a practical dimension to policy design and implementation.

Kant's theory of knowledge applied to the rules of patent law enables policymakers to come to understand that patents results strive for conception, not the ownership of ideas. The intellectual property aspect of patents affects the applicability of the legal structures for patents, and how patents may exclude others from unreasonable use of the mechanics of causal productivity arising from notions of aesthetic creativity. First, the nature of ideas, and more specifically, the faculty that both reason and understanding play in creativity, affect patents claims. The logical function of reason resides in the formal activity of subsuming propositions under ever more general principles in order to systematize, unify, and "bring to completion" the knowledge given through the real use of the understanding.[42] Next, the concept of property

indicates that which implies externality and accessibly, to exclude the private right of control over other's use. Lawyers more specific in their intent to reinforce patent concepts to protect clients from exceeding the reasonable tangible boundaries of patent protections, cognize that legal protections lie in externalities on a title or basis for a claim that entails a distinction between insight and application of property. Sensible patent claims allow for metes and boundaries. Then, discoveries may reasonably serve and enhance the greater good of society.

Reframing requires the inner conviction to transform the formal constructions in the means to communicate traditional patent system, into concise terms and understandable definitions. Innovation depends on ideas, yet ideas depend on patent protection in our current intellectual property legal schema. Systematic change begins with the grit and fortitude to overhaul a malfunctioning system, in order to sustain the increasing demands of the Knowledge Age.

A limit to one's ownership of what is considered intellectual property in the strictest of terms, and where that limit ends, creates a case for societal rights and benefits.[43] Thomas Jefferson once said, "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." [44] In other words, free will is a will under moral laws "that must be presupposed as a property of rational wills" acting under the idea that freedom that cannot be taken away.[45] That is to say, another "cannot infringe the laws of his willing as an intelligence; even to the extent that he does not answer for the former or attribute them to his actual self . . . ." [46]Kant's concepts captures a universalism that transcends community boundaries and respects the richness of human insight.[47] Abstractions live at the higher level on more universal terms, whereas the necessity for particularities, where "the finite is nested within the infinite," lie inside of abstractions and exist at the localized level.[48] Inquiring about the point at which societal benefits supersede the private

control of an invention / patent over another's use, leaves opportunity for another in depth examination of societal good over private protections where "threats on creativity and innovation . . . do not promote flourishing." [49]Ideologically, the notion that "geniuses, just as the stars, must shine without pay" translates to the public's just claim to universal abstractions.[50] Private property ownership rights conceptually exists at the point of reductive production.

CHAPTER 4

ALTERING THE PATENT LANDSCAPE

> Ideas are not set in stone. When exposed to thoughtful people, they morph and adapt into their most potent form.
>
> - TED, *Ideas Worth Spreading*[1]

Kant's theory of knowledge promotes a regulatory climate that is appropriately sensitive to Knowledge Age dilemmas and the ways in which litigation and legislation serve to promote a culture based on human dignity, the real engine that drives economic and innovative growth. The ideal, democratic governance approaches software innovation for the purposes of the human imperative. Kant's theory of knowledge lies in the context of good governance which promotes human autonomy and the pursuit of happiness, which is to say, the ability of the human to live to his or her fullest potential. In short, the purposefulness of patent law does not serve solely the context of societal innovation, nor does patent law's purpose exist in an isolated context to provide the necessary, best means for maximizing economic growth. Rather, patent law exists in the discerning context of reinforcing notions of human dignity.

Through balancing private rights with societal welfare, for the good of human progress as a whole, Kant's theory of knowledge serves individual and societal means. The duty to live to maximize human autonomy and dignity encourages not only economic growth as a means for the pursuit of happiness, or solely creative output that teeters on copying as a means for the pursuit of happiness, but an optimal blend of creative output and economic growth, that enhances human dignity, not at the sacrifice of one over the other. Current conditions illustrate patent reform for other end goals. The demands for strong patent exclusions furnish creators' rights to intellectual property protection in a laissez-faire environment for perceived economic well-being. Altogether

removing or weakening intellectual property protections opens innovation to short-term prosperity.

For instance, suppose we investigate the economic ramifications (and the "freshwater" theories that some economists portend) of free market forces naturally driving patent law.[2] In essence, this belief that "enforces the private protections of patents for economic gain" generally adheres to the conservative, status quo operation with a general bias explicitly toward large corporations who have greater political pull than the high-risk, creative entrepreneurial tech firms who generally lead innovative projects with greater economic return in the long-term. The current situation that stifles tech innovation then tends to benefit large, private corporate interests. The relationship pervades the tech industry with repercussions extending into the legal and global economic system. The current patent system incites individual and corporate patent holders to protect themselves at the sacrifice of what may be good for the larger community.[3] Non-practicing entities also find loopholes in the system to exploit. Patent holders with the greatest economic pull, powerfully dictate the force of private property in the market by maximizing the protections created to acknowledge inventor rights. Monopolies reign over property-making ideas in this self-regulating economic imperative built on quasi "free-market forces."

That is to say, one school promotes economic well-being through strong intellectual property protections of creator's rights, asserting that the free-market will eventually promote economic progress and harmony through vertical and horizontal integration. This argument asserts that protection of the innovator's rights at the exclusion of others, and the ability to receive compensation, that then allows the innovator to continue to create new ideas. Inherent flaws exist in the rationalizations of the current patent system. Invoking private property rights over the mind's internalizations of creative aesthetics as well as the external properties of the conceptual causal mechanics flags strong reasons for concern. Overly-broad patents then presumably protect

obvious and less novel "inventions." Qualifications of novelty and non-obviousness categories, in themselves, raise contentions that further leave room for counterproductively nebulous interpretations of patent claims. Dodgy issues then constitute an unstable system, leaving much to be desired in the realm of innovation where the creative autonomy of all individuals may not be fully realized. Innovation respectably occurs when creativity is balanced against the protection of patents that allow for flexibility, stability, revenue generation, and regard for a judicious system.[4] The consequences to an inflexible system results in a universal lack of regard for a damaged, ad hoc program where patent wars stifle the meaningful intent to innovate and produce. The broken patent system serves as extraordinary protection for a only few. Protections for certain autonomous entities exist, yet not for the purposes of maximizing autonomy of all individuals. A well-reasoned contention against the patent system, as it currently stands today, lies in hindering creative output because it fails to act at its most optimal level. To remember, "In the kingdom of ends everything has either a price, or a dignity. What has a price can be replaced with something else, as its equivalent; whereas what is elevated above any price, and hence allows of no equivalent, has a dignity." [5]Dignity remains the value the reigns supreme. Extraordinary protections for a select few, at the highest tiers, result in the less satisfactory minimal progress for the well-being of the whole.[6]

Examine, also, the ramifications of the argument on the other side, where some legislators and economists consider creativity the highest and best value. Highly innovative companies encourage a socially collaborative environment that pushes conventional norms. Presumably, in order to best maximize innovation, then patents should be removed in the software industry where development is highest and where borrowing of information is essential.[7] The justification for the lack of tech patents is because the most innovative ideas, largely occurs in community, if recent studies correctly reflect the cultural, societal, and economic situation.[8] Supporters also

contend that removing software patent protections reduce the problematic multiple and simultaneous invention claims.[9] Tech entrepreneurs often perceive the function of software patents as a purposeless reinforcement to traditional intellectual property beliefs.[10] Understanding the nature of innovation, then reinforces the notion that ideas occur through borrowing of other ideas and sharing of ideas, and thus, in general may not be novel or obvious.[11] Removing software patent protections may stimulate the economy short-term. Forego the ability to patent software, the theory goes, and innovation will be maximized.[12] Fostering inventiveness and creativity provide the real engine for economic growth.

Severe implementation of this line of thought implies unfavorable consequences. If good governance decided to remove software patents altogether, claiming an end goal of purely open, creative ideas and innovative gains, these erased legal protections for creators would completely transgress on the free culture of human dignity.[13] The notion "makes use of another human being [and his/her ideas] *merely as a means*," and conflicts "with the principle of other human beings can be seen more distinctly if one introduces examples of attacks on the freedom and property of others." [14] Removing patents from software development defines a system that heightens entitled copycatting. Blatant weakening of research and development, a formalized standards infrastructure, or regard for reasonable ownership claims, including incentive appreciation or acknowledgement of innovation, operate at the sacrifice and expense of inventors. Bare minimums in compensation as well as respect would result.[15] "For then it is clear that the transgressor of the rights of human beings is disposed to make use of the person of others merely as a means, without taking into consideration that, as rational beings, they are always to be esteemed at the same time as ends, i.e. only as beings who must, of just the same action, also be able to contain in themselves the end." [16]In essence, America's "free" culture would not be precisely free but slavishly chaotic toward disorderly imitation in a "free-for-all" culture, where

patents would garner the same respect for intellectual property as those countries who hold minimal respect for the human ability to create as well as produce.[17] Prolific mimicking, without recourse, does not produce new goods "in harmony with humanity." [18]

The above suggests two polar critiques of morals. Designed to call forth the virtues worth admiring, the conventional patent system emphasizes the purposes of intellectualism as a function of real, private property. It attempts to recognize the excellence of the best innovators, confer on the greats, and attribute status that goes to geniuses. If creators cannot protect their free right to think, the autonomy of all individuals is not maximized.[19] Still, for all of the rhetoric used to defend it, the status quo satisfies neither the value of maximized economic or innovative incentive. The other argument nurtures a collaborative, open-exchange of ideas, and thus, a decreased dependence on software patents. Supporters reason that the innovative qualities of production are the values worth honoring, admiring, and recognizing. The just distribution of ideas is the necessary and essential to the achievement of production. This discussion about a fair and unfair advantage questions, not only those values considered essential compared to those considered incidental, but poses issues about justice and the abilities worthy of honor and the recognition of talents.[20]

Both schools of thought reach consensus on several issues: the current U.S. patent system may not augment software development; innovation critically sustains economic growth; and finally, that progress and viability establishes community well-being. While the universals remain uncontested; the means to reach the end goal, and precisely the end result differs.[21] Justice requires grappling with the essential nature of the activity, and the qualities connected with the activity that are worthy of honor and recognition. As Michael Sandel notes, "elevating the terms of political discourse, means engaging directly with moral convictions." [22] I contend that "Just right" patent protections emphasize the human vocation to communicate. Social communication

maximizes human autonomy and reinforces democratic governance. If not acting in regard to a moral conviction of these higher claims, Kant asks:

> What is it, then, that entitles a morally good disposition or virtue to make such high claims? It is nothing less than the share it obtains for a rational being in universal legislation, by which it makes it fit to be a member of a possible kingdom of ends, which it was already destined to be by its own nature, as an end in itself and precisely in virtue of this as legislating in the kingdom of ends, as free with regard to all laws of nature, obeying only those that it itself gives and according to which its maxims can belong to a universal legislation (to which he, at the same time, [4:436] subjects himself).[23]

The universal legislation that reigns supreme, above all the contentions among those who argue for property rights and those who argue for creativity, is the maxim that human dignity and autonomy are the necessary ingredients for the pursuit of happiness. Patents are the necessary means for recognizing talent and ingenuity, as patent's appropriate use are the means for encouraging creativity. Recenter the question around human dignity and autonomy, based on Kant's theory that individuals are ends in themselves, not the mere means of others, and this alternative framework anchors the appropriate purposefulness of patent law. Rather than arguing for one of two tracks, or for the setting the value of innovation over the economic efficacy of overly-broad property protections, then human dignity and autonomy justly serves as the primary ends to moral politics. Patents may effectively recognize the excellence of the best innovators and attribute status that geniuses deserve, through the means of conceptual production.

In this context, a direct discussion about justice suggests that corollary solutions honor both the genius as well as production, providing a workable approach to enhanced creation of Knowledge products. Kant's theory of knowledge helps minimize the issuing of vague patents, where both schools of thought attempt to promote economic well being and the values that both extremes espouse. While some vague patenting likely continues due in part to the depth and

richness of language, the epistemological obscurity may be minimized during an era of prolific idea generation. Optimal solutions lie in "the idea of the will of every rational being universally legislating." [24]In maximizing autonomy for all individuals, Kant's theory of knowledge helps delineate the "concepts" that may be considered external property and the "ideas" that may not. Free culture's maximized autonomy translates into a socially motivated innovative imperative with "humanity, as an end in itself." [25] Judicious discernment of the consequences to implementing means that most enables normative rules of human dignity allows for the greatest sustainability.[26]

Human dignity, properly understood, is the core reason why innovation and economic gains drive policy arguments. Correctly stated, key values grow out of concern for the more fundamental value of human autonomy and dignity. Well-reasoned patent legislation and a system of essential tech standards system, therefore, flourishes out of this normative end and from support of epistemological development, conceptually speaking. Before conflicts even arose to the level of discussion between property protection and innovative concerns, understanding that the values of free-thought, free-market, free culture, all exist within the context of human dignity, allows for productive resolution. Knowledge, the new durable good, calls for a different systematic response to establishing long-term economic progress and sustainable progress. Epistemological conceptualizations may serve to maximize human autonomy and dignity in providing balanced protections for both societal open-innovation and the act of exclusive rights for a developing, advanced IT ecosystem. In this way, high-growth, innovation-based tech entrepreneurship may help address the "grand challenges" of the 21st century. Government regulatory concerns toward building an open, competitive business environment can better establish a vision and culture for American innovation. Immanuel Kant's theory of knowledge clears the ambiguities of language, allows for minimal manipulation, and discloses the

contradictions in contemporary notions of knowledge.[27] Tech patent policy initiatives enhance innovative means. The broad questions suggest finding the right type of governance that reflects a balanced approach between the public welfare and private interest as well as to the theory of knowledge and innovative means where the future of law "works with code, and code works with law" in complementary form.[28]

As of this writing, policy initiatives begin to thoughtfully address growing concerns toward patent regulatory affairs. Still, the political moralists duty is to implement the technical task, not ensure the moral task of moral politicians.[29] "That kings should be philosophers, or philosophers kings is neither to be expected nor to be desired, for the possession of power inevitably corrupts reason's free judgment. However, that kings or sovereign peoples (who rule themselves by laws of equality) should not allow the class of philosophers to disappear or to be silent, but should permit them to speak publicly is indispensable to the enlightenment of their affairs." [30]These answers encourage the most agreeable, most sustainable, tactical solutions to arise.

The collaboration of multidisciplinary studies and solutions results in a summary of advisory opinions that encourage sensible, balanced government policies to protect creative innovations. Solutions that promote intellectual property rights in a tech knowledge age exist beyond the USPTO office have global tech ramifications and remain an area of ongoing discussion for policymakers, legislators, legalists, and technologists.[31] Kant's theory of knowledge supports a universal understanding of intellectual property development. Regarding legal doctrines and acts, methods of "function patents" pervade.[32] Beginning with the linguistic difference between ideas and concepts, Kant's theory of knowledge provides general support for the USPTO response to "step" or "means plus function claims" [33] in defining the empirical

evidence behind most software patent suits.[34] Some legalists dispute the *numerus clausus* principle.[35]

Adequate tech innovation provisions stimulate the economy while still protecting the rights of the inventor. General tech industry standards in software development, tech innovation clusters, innovation teams change research and development initiatives.[36] "Standards-Essential Patents" called F/RAND protect innovations that are incorporated into broader technologies which an entire industry agrees to use, like Wi-Fi or 3G. Governed by agreements and rules that have not been thoroughly tested in the courts, these industry patents encourage technology standards. Companies that hold patent claims gain financially from others who pay for its use. The trade-off for companies trading in their patents to the standards F/RAND and foreseeable income, is that they adhere to agreements and rules to prevent them from price gouging. Holders of standards-essential patents agree to license their patents on terms that are considered "fair, reasonable and nondiscriminatory." [37]While what constitutes "fair and reasonable" pricing leaves much room for debate, the law surrounding standard-essential patents are murky.[38] The consensus among policymakers on the perils of using standard patents as competitive weapons continues to build.[39] The Senate Judiciary Committee recently held hearings over key issues concerning these patents, when owners were able to force other companies to halt sales, rather than pay fees. The tech world continually responds to industry-wide standards-based implementation of natural human factor responses to tech. In promoting innovative availability, the tech industry responded to the litigious atmosphere that stymies innovation with TRIP, as one method for encouraging free and open tech development.[40]

Other recommendations suggest quality patent claims by developing specificity, by description and means, and tighter patent limitations. Critics also argue for a shorter tech patent software lifespan, because "10 years is an eternity, and 6 months in tech is a lifetime." [41]Reduced

patent lifespans also decrease multi-nested claims.[42] Protecting intellectual property rights in the tech Knowledge Age promotes competitive markets and spurs productive entrepreneurship.[43] Ongoing communication leads to knowledge gains, which continually reinforce what it means to be human. The best maximized human imperative leads to the least waste, greatest societal effectiveness in economic growth, and the human imperative to innovate.[44]

Society culturally progresses, where the 18th century marked the Age of Reason, a period when Kant was most prolific in his theory of knowledge as his work characterized the prevailing belief in the use of reason, particularly in England and France. By the 20th century, the Age of Industry reigned and in the 21st century, society progresses from the digital to Information age, transitioning securely into the Age of Knowledge. In reinforcing Kant's epistemological theories, society moves from that of reason, to understanding, and then to knowledge dissemination. Based on the fundamentals of reason, knowledge prolificacy marks reason and conceptual thinking in contemporary times where this more holistic thought process naturally raises questions about production and genius.[45]

Applying the fundamentals of knowledge, tactical patent agendas work to reinforce respect for appropriate governance in the age of intellectual property with efficacy. Kant's theory of knowledge fills in the gaps to responsive policymaking and regulation, clarifying the durable good on the foundational concept of what it means to be human in the fullest sense of self and that of greatest autonomy. The multidisciplinary, intelligent approach addresses the commodity of intellectual property in a Knowledge Age that emphasizes the metaphysics for morals of appropriate governance. Returning to epistemological origins unwraps the mysteries and abstractions of the durable good that plagues the contemporary interpretations of technical code. Fundamentally redefined, the durable good avails itself for the appropriate use of ideas and concepts both from restructuring statutory law and optimal governance, allowing citizens to live

with dignity. What it means to be human in the fullest sense combines natural laws from above, autonomy from within, and protection of the durable good created by humans. The multidisciplinary connection of legislation, regulation, technology, and economics lies in the creative innovation that rests on the precepts of moral autonomy. To reflect changing times, restructured policy initiatives ask the courts, not necessarily to grant new substantive rights, but rather, to enforce the purposeful procedural device for which patents have been created, in a manner that produces optimal results. Intellectual property propagates free culture, reinforcing the human imperative to readily create new ideas.

Innovation remains a central driver for economic prosperity and social development.[46] Economies that can effectively foster and commercialize innovations will grow faster, generate more jobs, and higher living standards.[47] A creative force for new ways of innovating in collaborative, open environments, individuals may share objectives, discuss, and track the serial innovations that result from all parties including consumers, producers, and creators.[48] Leadership enables points of mutual self-interest that create new networked partnerships, collaborative projects, and encourage technological development. Relationships build on this level of trust and social engagement. Creating value by initiating ideas, allows for change-agents to develop strong and scalable business-cases, as well as innovative pilot programs that may be launched (See APPENDIX II - *3. Closed/Open Innovation/Progress*, p. 60).

Additional design-oriented research illustrates how epistemology is not the only means for a strategy to encourage American innovation. Successful innovation demands creative improvisation.[49] Studies show that aspects of serious play, positive relationships, personal contentment, meaningfulness and authenticity leads to genius.[50] Responsible government initiatives encourage an infrastructure for the pursuit of happiness that seeks contentment for its

citizens and the development of desires and peace, not necessarily driven by financial or materialistic rewards, but encourages internal measures of creative policies that encourage the development of "geist." The digital universe creates a new culture, a culture which we have the imperative to respond to. Technology acts as a means to this system designed to advance innovation for the purpose of freeing culture.[51] It is should not be used to thwart the advance of innovation. Technology is the byproduct of human development. [52] To this end, a measurement of gross national happiness (GNH) in some countries remains a responsibility of the government to ensure happiness, not wealth, as a byproduct of human autonomy and dignity, which then reinforces creative output. An environment where citizens may freely and conscientiously pursue their form of happiness plays into the enjoyment of new experiences, relationships with friends and family, meaningful experiences, and feelings of appreciation. An interdependence with each other and the natural environment, social bonding, social interaction, cooperation, and the human vocation to communicate encourages the partially cultivated skill of pursuing happiness.[53]

The Chimera : A Visionary Conclusion

A paradigm shift exists in information conveyance. New offerings and new competitors change the business model on how to be successful. Living in a well-connected, digital universe noticeably leads to temporal existences. Where innovation occurs regularly, consistency appears less systematic. Thus we learn to embrace and evolve in the process, to adapt a culture of empathy, and to observe the human factors element behind the issues we attempt to solve. Linking ideas to observations, innovation results. Antiquated implementation of an intellectual property legal system on a philosophical foundation could be improved to encourage the aesthetic creativity, design thinking culture, one where the culture of creative confidence becomes the new norms.[54] Re-engaging people to achieve self-authorship and self-efficacy, rekindles creative

confidence. Radical collaboration enables teams to become more facile and delight in following intuition. The essential idea of freedom enables aesthetic creativity.[55]

At the foundation of freedom lies our ability to communicate freely. Capturing and sharing digital technology distributes the data content that enhances the information and knowledge dissemination and proactively advances the transmission of ideas. In this way, the interchange of thoughts and opinions liberates society, as it is the human vocation to communicate freely.[56] Where patent law and digital technology cannot cease the exchange of ideas all together, the liberation of content continues to rapidly fuel the power and fidelity of digital technology. [57] Common sense in the craft of human flourishing supersedes the ambition to control. Creativity, applied to democracy, enables a broad range of citizens to use technology to express, criticize, and contribute to universal cultural norms and that which re-enforces human dignity.[58]

Ideas have the power to transform.[59] "The power of intellectual property is at its greatest in world history. This new cultural change creates a realistic expectation that simultaneous invention occurs as the norm, not the exception." [60] Policymaking for innovation and design thinking allows for free-flow of information, the development of free culture, and creativity and innovation. It is innovation of American culture, in that of NASA's space ship, progress in development and mass manufacturing of Ford automobiles, the Wright brother's airplane, and Steve Job's iPhone that spurs economic development (See APPENDIX II - *2. Waves of Innovation*, p. 59). "In this manner, nature guarantees perpetual peace by the mechanisms of human passions." [61]

APPENDIX I

CURRENT PATENT TRENDS

As of April 1, 2013

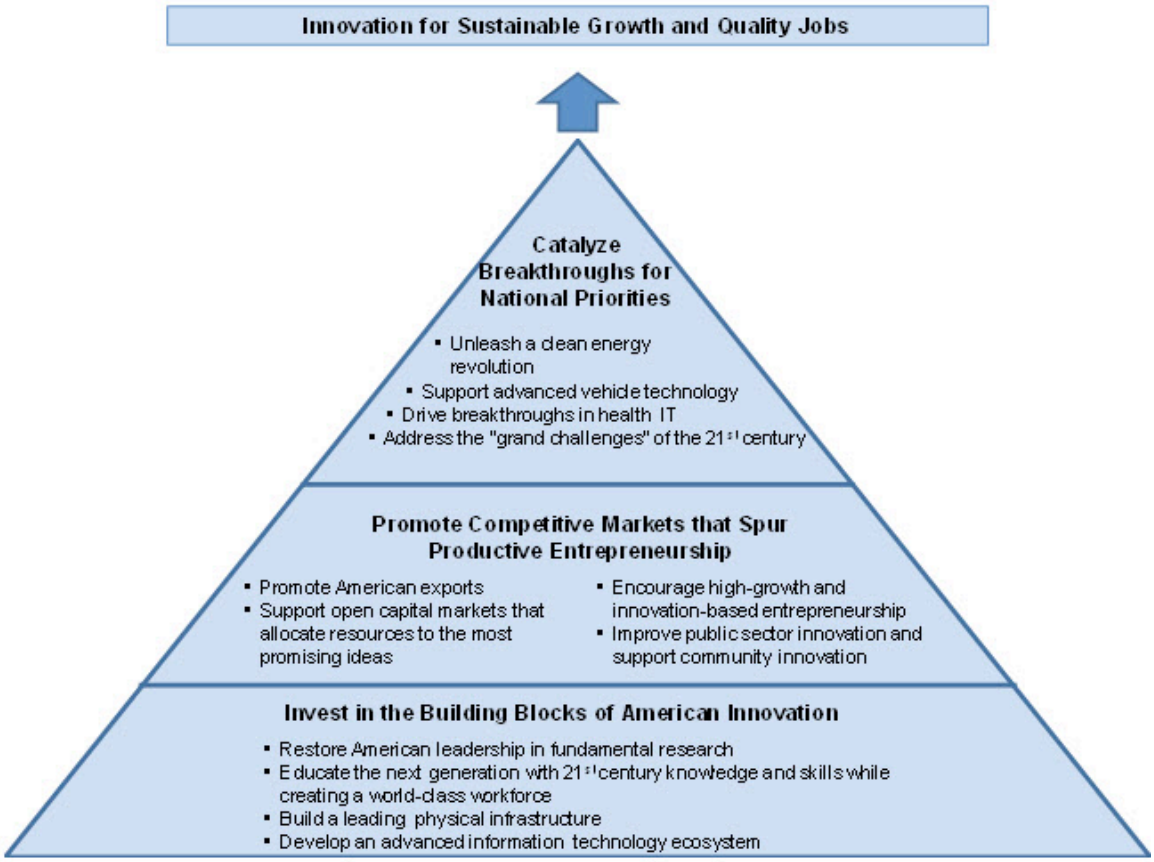
While the contentions between the relationship of creativity and property in tech patents persist, tech patent developments make headline news daily. Mega technology corporations increase their patent arsenal. Apple patents a smart pen and iPhone 'wrap-around' interface. Microsoft receives three design patents protecting look and layout. Three days ago Google pledged a patent shield for open source technologies, offering patent amnesty for open source projects. Their Open Patent Non-Assertion (OPN) Pledge commits to decreasing patent threats around open-source software (OSS) by providing a robust defensive against patent aggression. Companies promise not to sue over patents unless first attacked. Agreements across tech firms are designed to supplement existing OSS licensing alternatives and serve as a supplemental solution to creative innovation in response to recent developments in the patent marketplace.

Other developments this week include the USPTO issuing stricter guidelines to examiners, reiterating the need for "clear articulation of the reasons why a claimed invention would have been obvious" and guidelines that involve factors of patent predictability. The USPTO continues an experimental process of tech patent regulation trial-and-error. Additionally, patent activity remains highest in the "Computers and peripherals" category. This classification obtained the largest, overall volume of patents for the fourth straight year, reported Thomson Reuters. Monthly tech patent conferences attract CEOs from major tech corporations to discuss emerging and mission critical IP issues. Panel forums like The 21st Annual Fordham Intellectual Property Law & Policy Conference scheduled in New York City, April 2013, provide the most up-to-date coverage on trending challenges, while attempting to direct the patent monetizing situation and assess the evolving patent landscape in a tech ecosystem that moves at warp speed.

APPENDIX II

ILLUSTRATION

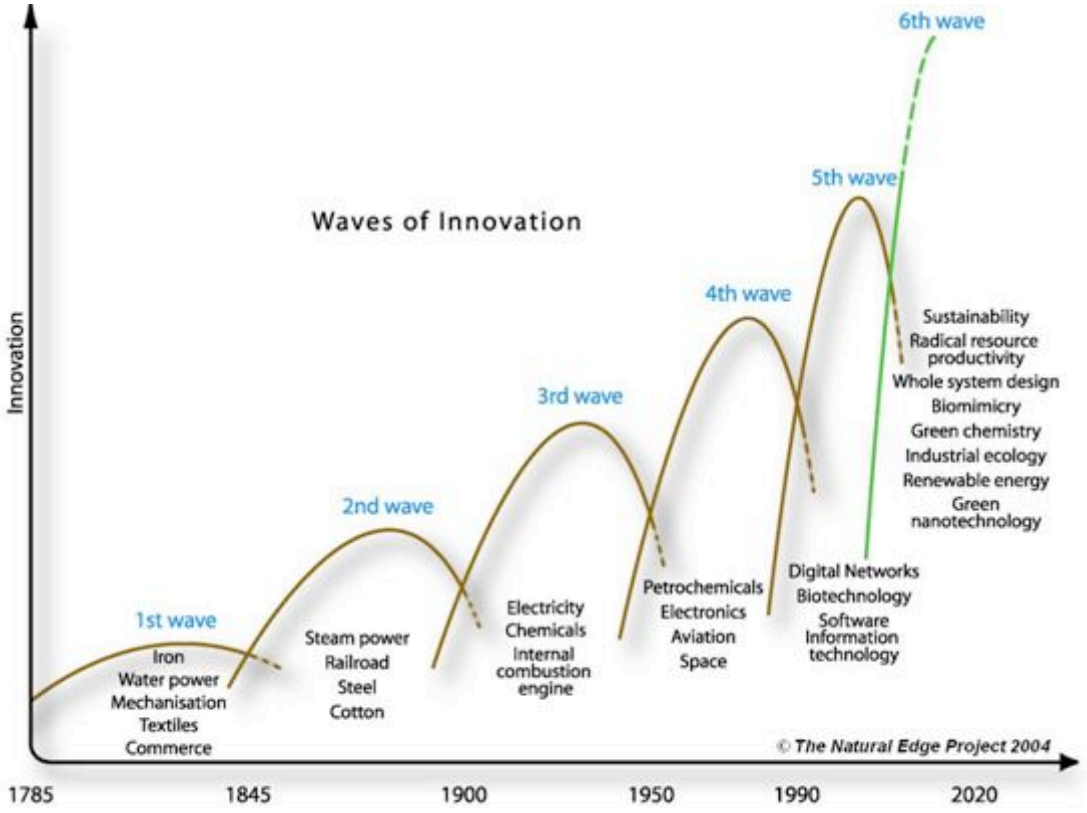
1. Innovation for Sustainable Growth and Quality Jobs



Source: A Strategy for American Innovation: Driving Towards Sustainable Growth and Quality Jobs," Innovation for Sustainable Growth, Executive Summary, National Economic Council, White House. September 2009. http://www.whitehouse.gov/administration/eop/nec/StrategyforAmericanInnovation

ILLUSTRATION

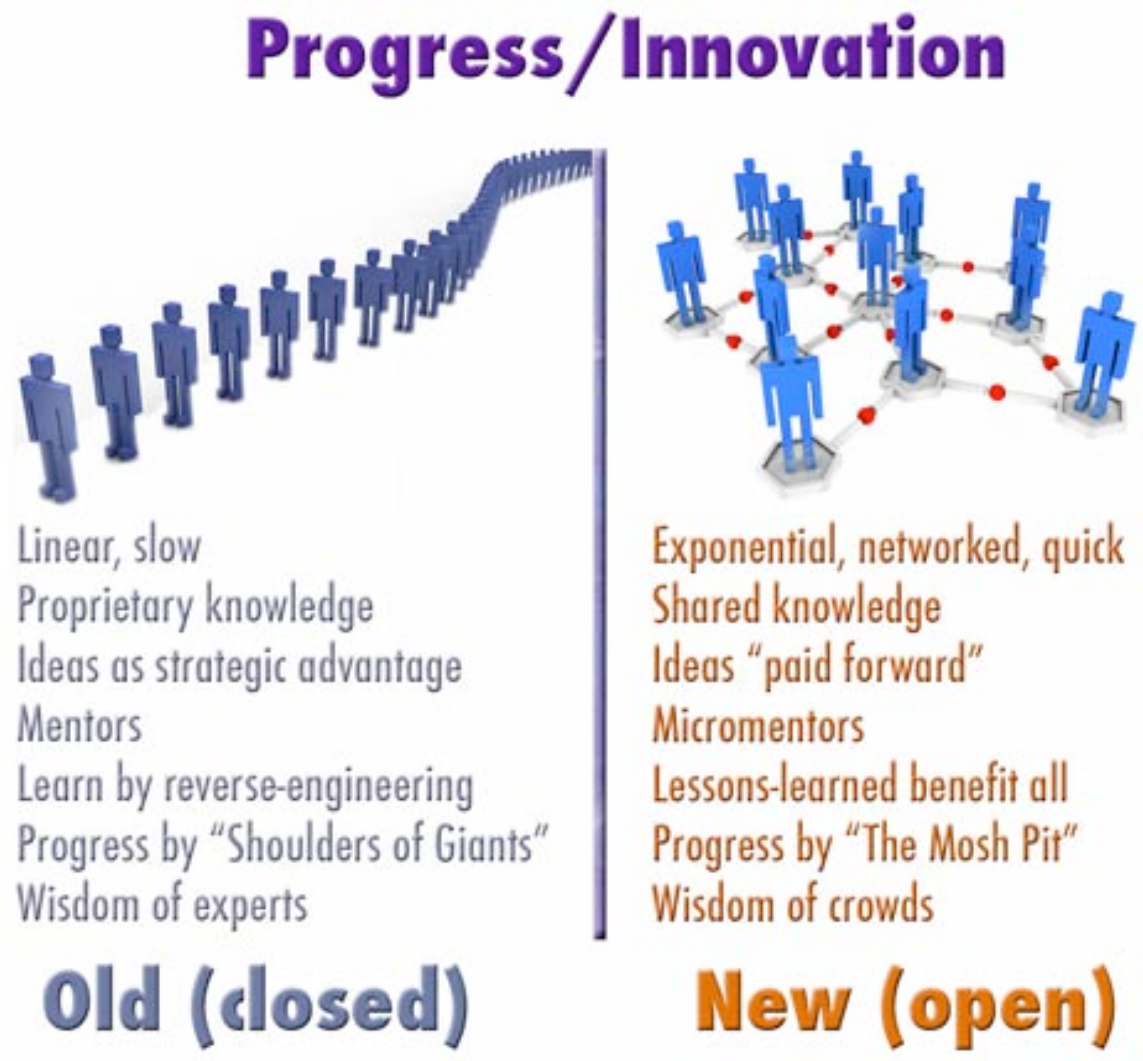
2. Waves of Innovation



Source: "Figure 2: Waves of Innovation of the First Industrial Revolution," Natural Edge Project, http:// www.naturaledgeproject.net/Keynote.aspx.

ILLUSTRATION

3. Closed / Open Models of Progress / Innovation



Source: "Mosh Pit as Innovation Model," Creating Passionate Users, http://headrush.typepad.com/creating_passionate_users/2006/06/mosh_pit_as_inn.html, (accessed April 1, 2013).

NOTES

Chapter 1

[1] Steve Jobs, "Steve Jobs on Tech and the Liberal Arts," *YouTube.com*, VentureBeat video: http://www.youtube.com/watch?feature=player_embedded&v=wNfaVImybns (accessed March 27, 2013).

[2] Jessica E. Vascellaro, "Apple and Samsung Trade Jabs in Court," *The Wall Street Journal* (July 31, 2012), http://online.wsj.com/article/SB10000872396390444226904577561141756660360.html (accessed March 25, 2013); Rachael King, "Apple v. Samsung verdict: What It Means," *ZDNet* (August 24, 2012), http://www.zdnet.com/apple-v-samsung-verdict-what-it-means-7000003162/ (accessed March 25, 2013).

[3] Bianca Bosker and Dino Grandoni, "Apple-Samsung Lawsuit: What You Need To Know About The Verdict," *The Huffington Post* (September 24, 3013), http://www.huffingtonpost.com/2012/08/24/apple-samsung-lawsuit-verdict_n_1829268.html (accessed March 25, 2013).

[4] GUI is the graphical user interface of a software program that utilizes the computer's graphics capabilities utilizing basic component features including a pointer, pointing device, icons, desktop, windows, and menus, freeing the user from learning complex command languages in order to make the program easier to use. The success of a GUI is defined by its seamless design features that enables human's ease-of-use when interacting with the application. Read more at: http://www.webopedia.com/TERM/G/Graphical_User_Interface_GUI.html (accessed March 25, 2013). API stands for application programming interface which includes "a set of routine protocols and tools for building software applications." Essentially, the API is the programming-based engineering backend to the front-end user viewed GUI. Both similarly focus on the goal of providing meaningful user interaction with the application and in this context may the terminology may be used interchangeably. A good API provides the building blocks, including widgets, to develop a sound software program. The programmer puts the blocks together. The designer is the active agent in creating a GUI. Read more at: http://www.webopedia.com/TERM/A/API.html (accessed March 25, 2013).

[5] Matthew Smith, "Patent Skills for User Experience Design," *Designing for Humans* (December 17, 2012), http://www.designingforhumans.com/idsa/2012/12/patent-skills-for-user-experience-design.html (accessed March 25, 2013); Ryan Flax, "Design Patents: Still Poised for Prominence," *A2L Consulting : The Litigation Consulting Report (*February 07, 2013), http://www.a2lc.com/blog/bid/62842/Design-Patents-Still-Poised-for-Prominence (accessed March 25, 2013); Dave Malouf, "Rumble in the Patent Jungle : An Interaction Design Perspective," *Core77: Design Magazine & Resource* (August 16, 2012), http://www.core77.com/blog/articles/rumble_in_the_patent_jungle_an_interaction_design_perspective_by_dave_malouf_23199.asp (accessed March 25, 2013); Florian Mueller, "Apple insists that Samsung's purported workaround still infringes pinch-to-zoom API patent," *Foss Patents* (November 27, 2012), http://www.fosspatents.com/2012/11/apple-insists-that-samsungs-alleged.html (accessed March 25, 2013); Charles L. Mauro, "Apple v. Samsung: Impact and Implications for Product Design, User Interface Design (UX), Software Development and the Future of High-Technology Consumer Products," *Pulse > UX Blog* (November 27, 2012), http://www.mauronewmedia.com/blog/apple-v-samsung-implications-for-product-design-user-interface-ux-design-software-development-and-the-future-of-high-technology-consumer-products/#more-515 (accessed March 25, 2013).

[6] Davide Casali, "Apple vs Samsung Lawsuit: Why It Is Such a Complex Matter," *IntenseMinimalism* (August 31, 2012), http://intenseminimalism.com/2012/apple-vs-samsung-lawsuit-why-it-is-such-a-complex-matter/ (accessed March 25, 2013).

[7] Mr. Flora commented about a circular steering wheel in Nick Wingfield, "Apple Case Muddies the Future of Innovations," *The New York Times* (August 26, 2012), http://www.nytimes.com/2012/08/27/technology/apple-samsung-case-muddies-future-of-innovation.html?_r=0 (accessed March 25, 2013). Telephone touchpad inventor, John E. Karlin was a human factors engineer who developed all-digit dialing, Margalit Fox, "John E. Karlin, Who Led the Way to All-Digit Dialing, Dies at 94," *The New York Times* (February 8, 2013), http://www.nytimes.com/2013/02/09/business/john-e-karlin-who-led-the-way-to-all-digit-dialing-dies-at-94.html?pagewanted=all (accessed March 25, 2013).

[8] President Barack Obama, "A Strategy for American Innovation: Driving Towards Sustainable Growth and Quality Jobs," *The White House,* August 5, 2009, http://www.whitehouse.gov/administration/eop/nec/StrategyforAmericanInnovation (accessed March 25, 2013); Malouf, "Rumble in the Patent Jungle : An Interaction Design Perspective."

[9] Usage of the term "tech" refers to the "high-tech" industry, implying primarily computer-related, information technology industry, computer, web, and internet-related technologies dependent on high-speed, high-bandwidth connections. "High-tech" technology companies tend to coalesce in the Silicon Valley area. Used in this context, "tech" does not refer to biotech, telecommunications, or non-primarily computer engineering based industries.

[10] Kant, *Critique of Judgement*, 53-54; Reuscher's class lectures.

[11] Cyberlaw teaches that understanding "the interaction between rules and technical structures is essential, if regulations are to have their intended effect." Therefore, policymakers must aim to strike a balance-- to ensure that society secures some protection to creators for their work while also ensuring that protections are not overly-broad and far-reaching to the detriment of civil society. Lawrence Lessig, "Law Regulating Code Regulating Law," *Loyola University of Chicago Law Journal* 35 (2003): 1-2.

[12] Christina Mulligan and Timothy B. Lee, "Scaling the Patent System," *NYU Annual Survey of American Law* (March 6, 2012), http://ssrn.com/abstract=2016968 (accessed March 25, 2013); Adi Kamdar and Daniel Nazer, "Deep Dive: Software Patents and the Rise of Patent Trolls," *Electronic Frontier Foundation : Defending Your Rights in the Digital World* (February 28, 2013), https://www.eff.org/deeplinks/2013/02/deep-dive-software-patents-and-rise-patent-trolls (accessed March 25, 2013).

[13] Problems in the patent system are due, in part, to simultaneous invention, obviousness, novelty. abstract ideas given patents. lack of patent officer knowledge. mis-issuing of patents. See Robin Feldman, *Rethinking Patent Law (*Cambridge, MA : Harvard University Press, 2012). Patent examiners also spend on average of 18 hours per patent application according to the EFF. Kamdar and Nazer, "Deep Dive: Software Patents and the Rise of Patent Trolls."

[14] Study performed by Boston University School of Law. Kamdar and Nazer, "Deep Dive: Software Patents and the Rise of Patent Trolls."; Loek Essers, "'Patent Trolls' Cost Tech Companies $29 Billion Last Year, Study Says," *PCWorld* (September 2011), https://www.pcworld.com/article/258395/patent_trolls_cost_tech_companies_29_billion_last_year_study_says.html (accessed March 25, 2013);

Timothy B. Lee, "Study: Patent Trolls Have Cost Innovators Half A Trillion Dollars," *ArsTechnica* (September 20, 2011), http://arstechnica.com/tech-policy/2011/09/study-patent-trolls-have-cost-innovators-half-a-trillion-bucks/ (accessed March 25, 2013).

[15] Will Ashenmacher, "Are Smaller Voices Going Unheard in Software Patent Discourse?" *Legal Solutions Blog* (February 8, 2013), http://westlawinsider.com/law-and-techology/are-smaller-voices-going-unheard-in-software-patent-discourse/ (accessed March 25, 2013).

[16] The framework for why the battle to end the technological wars portrays disharmony with free culture, and in broader views threaten human dignity and the common good. The remedies must fit the cause for which peace is fought, according to Lawrence Lessig, *Free Culture: The Nature and Future of Creativity* (New York : Penguin Books, 2004). Josh Leonard wrote that the patent system, "although once created fuel to the fire of innovation, is now throwing sand in the wheels of innovation." Government systems have errors, and those errors negatively impact the government's ability to bring better products at a better price to consumers, asserts patent attorney, Ravicher. Daniel Ravicher, "Daniel Ravicher Speaks on Patent Reform," *Flora.tv* Transcript: Santa Clara, CA (September 2006), 7. http://fora.tv/2006/09/20/Daniel_Ravicher_Speaks_on_Patent_Reform (accessed March 25, 2013).

[17] Patent law performed with relative effectiveness in a pre-information era where the protection of novel ideas occurred at a manageable pace. "A perverted patent law system creates a response where the valuable feature of the original design of the Internet is inverted: a medium that facilitated the broad spread of content at low cost becomes a medium that requires defensive behavior. Demand for private regulation increases in this context when public regulation fails. Vigilantism is not preferable to an effective government." Lessig, "Law Regulating Code Regulating Law," 13-14. With the explosion of information, knowledge becomes more accessible, and therefore, new ideas become more prolific. The digital universe creates challenges the free culture environment into a permissions one. The ideal is to continue to create a free culture stimulus. Given the human vocation to communicate, free culture enhances human dignity. The tech patent law crisis creates penumbral social, economic, cultural issues. Lessig, *Free Culture*.

[18] Our current historical age may be best described as Information Age moving into the knowledge age. References to Information, including Information Age and Information Revolution imply a data-oriented and data-driven era. These qualities depicted the rise of the internet in the 1980's - 2000's. In 2010 we approach a movement beyond the concept of understanding and data dissemination to that of Knowledge, which includes the use of reason and insight.

[19] This is particularly true in the case of investing in research and development. Knowledge spillovers and other externalities ensure that the private sector will under-invest, especially in the most basic of research. However cautiously, historical precedence in the U.S. indicates that "picking winners and driving growth too often end up wasting resources and stifling rather than promoting innovation," due to the limited ability of the government to foresee the future and exercises in lobbyist distorted experiences. The true choice in innovation is not between regulation but about sensible government involvement to support innovation in striking a balance to jumpstart innovation. Obama, "A Strategy for American Innovation: Driving Towards Sustainable Growth and Quality Jobs."

[20] According to Richard Stallman, software patents are the equivalent to "landmines," where each design decision in a software project carries the risk of stepping on a patent, which can destroy the project. "Fighting patents one by one will never eliminate the danger of software patents, any more than swatting

mosquitos will eliminate malaria. With the hundred thousand software patents the USPTO issues each year, the best efforts would be to work towards a short-term escape and long-term fix at once. Bad software patents do not equate to mistaken or invalid software patents, and tech patents that unjustly restricts computer usage does not necessary translate into a legally invalid patent according to the patent system's criteria." Richard Stallman, "Fighting Software Patents - Singly and Together," *GNU Operating System* (February 28, 2013), http://www.gnu.org/philosophy/fighting-software-patents.html (accessed March 25, 2013).

[21] The notion of autonomy leads to the fruitful concept of the kingdom of ends, according to Kant. Immanuel Kant, *Groundwork of the Metaphysics of Morals,* translated and edited by Mary Gregor, Jens Timmermann, Christine M. Korsgaard, (New York, NY: Cambridge University Press, 2012), 40.

[22] U.S. Patent and Trademark Office, "Request for Comments on Preparation of Patent Applications," *Federal Register : The Daily Journal of the United States Government* (January 15, 2013), https://www.federalregister.gov/articles/2013/01/15/2013-00690/request-for-comments-on-preparation-of-patent-applications (accessed March 25, 2013).

[23] Lessig, *Free Culture;* Lawrence Lessig, *The Future of Ideas: The Fate of the Commons in a Connected World* (New York : Vintage Books, 2002).

[24] Judge Posner nicely summarizes problems in the patent system, recognizing that "most software innovation is incremental, created by teams of software engineers at modest cost, ephemeral -- meaning constantly fluctuating, and piecemeal -- not consisting of an entire device, but of components." A software device can consist of "tens of thousands of separate patentable components." According to Posner, further impediments to the effective patent policy in the software industry include "a shortage of patent examiners with the requisite technical skills, the limited technical competence of judges and jurors, the difficulty of assessing damages for infringement of a component rather than a complete product, and the instability of the software industry because of its technological dynamism, which creates incentives both to patent and to infringe patents and thus increases legal costs." Richard Posner, "Do Patent and Copyright Law Restrict Competition and Creativity Excessively?" *The Becker-Posner Blog : A Blog by Gary Becker and Richard Posner* (September 30, 2012), http://www.becker-posner-blog.com/2012/09/do-patent-and-copyright-law-restrict-competition-and-creativity-excessively-posner.html (accessed March 25, 2013).

[25] "Our activity shown by the spontaneity of reason in the production of ideas places us among the intelligences," Kant, *Metaphysics of Morals,* 61.

[26] The research scope anticipates theoretical regressiveness. Economic stability exists as a chimera in the name of perpetual peace. Immanuel Kant, translated by Ted Humphrey, *Perpetual Peace and other Essays on Politics, History, and Morals* (Cambridge, MA: Hackett Publishing Company, 2012), Kindle edition. Allen Bloom, *Closing of the American Mind: How Higher Education Has Failed Democracy and Impoverished the Souls of Today's Students* (New York, NY: Simon & Schuster, Inc., 2008), Kindle edition.

[27] For the purposes of this study, the emphasis lies on "promoting progress" for inventive purposes, the "exclusive rights" which allows a patent holder the exclusivity of the creator's claims. and that of of "discoveries," which inherently may be ideas and not inventions per say. in this case, it creates conflicts within the system when abstract ideas may be used as tangible means. U.S. Const. art. I, § 8, cl. 8.

[28] "35 USC § 101 - Inventions patentable," *Cornell University Law*, under "Legal Information Institute," http://www.law.cornell.edu/uscode/text/35/101 (accessed March 25, 2013).

[29] Ibid.; Matthew Moore, "In Re Bilski and the 'Machine-or-transformation' Test: Receding Boundaries for Patent-Eligible Subject Matter," *Duke Law & Technology Review* 9 (2010): 1-2, http://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=1200&context=dltr (accessed March 25, 2013).

[30] Process / method claims are the most difficult to analyze, simply because the other claims form tangible elements or parts, whereas method / process claims do not. One of the limitations of process/method claims is that they could conceivably cover both statutory and non-statutory embodiments. "If this is the case 'under the broadest reasonable interpretation of the claim when read in light of the specification and in view of one skilled in the art," the claim is not patent-eligible because it is directed to non-statutory subject matter." Recent Supreme Court decisions alter policy for determining whether a claimed method/process is patent-eligible subject matter. Stephen C. Durant, "Patentable Subject Matter Eligibility in the Aftermath of Bilski and Prometheus," 57-58, http://www.patents4software.com/wp-content/uploads/2013/01/Patentable-Subject-Matter-101.pdf (accessed March 25, 2013).

[31] *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972). Moore, "In Re Bilski and the 'Machine-or-transformation' Test: Receding Boundaries for Patent-Eligible Subject Matter," *2*. This said, in *MySpace, Inc. v. GraphOn Corp*., 672 F.ed 1250, 1260 (Fed. Cir. 2012) Judge Newman proposed a desire to avoid what she referred to as the 'murky morass that is § 101 jurisprudence" where she expresses concern that §101 will become the next "toss-in" for every accused infringer's response to a patent infringement suit, particularly in business method litigation. Durant, "Patentable Subject Matter Eligibility in the Aftermath of Bilski and Prometheus," 68.

[32] *Diamond v. Chakrabarty*, 447 U.S. 303, 309 (1980); *Diamond v. Diehr; Gottschalk v. Benson, re: Comiskey* in Moore, "In Re Bilski and the 'Machine-or-transformation' Test: Receding Boundaries for Patent-Eligible Subject Matter," 1-19.

[33] Moore, "In Re Bilski and the 'Machine-or-transformation' Test: Receding Boundaries for Patent-Eligible Subject Matter," 1-19.

[34] According to 35 USC § 103 - Conditions for patentability, "A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made," in "35 USC § 103 - Conditions for patentability; non-obvious subject matter," *Cornell University Law*, under "Information Institute," http://www.law.cornell.edu/uscode/text/35/103 (accessed March 25, 2013).

[35] "The Natural Advantage of Nations (Vol. 1): Business Opportunities, Innovation and Governance in the 21st Century," *The Natural Edge Project*, http://www.naturaledgeproject.net (accessed March 25, 2013). See also: Illustration II - Figure 2: Waves of Innovation of the First Industrial Revolution, "TNEP International Keynote Speaker Tours," *The Natural Edge Project*, http://www.naturaledgeproject.net/Keynote.aspx (accessed March 25, 2013).

[36] "The Limits of Abstract Patents in an Intangible Economy," *The Brookings Institution* (Event : January 14, 2009), http://www.brookings.edu/events/2009/01/14-patents (accessed March 25, 2013).

[37] Durant, "Patentable Subject Matter Eligibility in the Aftermath of Bilski and Prometheus," 44-45.

[38] Ibid., 46-47; *CLS Bank*, No. 2011-1301.

[39] Similarly, emphasizing the metaphysical component to the quantum physics can continually talk oneself in circles. The law requires a certain amount of language definition in order to operate successfully where, as the natural element of rule setting, rules and expectations may be respected and adhered. Not doing so, inherently weakens a rule to where it bears no strength to perform. In the Prometheus case, the Federal Circuit acknowledged these inherent weaknesses to patent law, admitting that "Too broad an interpretation of [the exceptions to Section 101] could eviscerate patent law. For all inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas." Ibid., 44-45; *Mayo Collaborative Servs. v. Prometheus Labs, Inc.*, 132 S.Ct. 1289, 1293 (2012).

[40] Some characteristics of software based claims point to the sensitivity in explaining the determining line between abstract idea and subject matter difficulty, as applied to information technology claims. See Tun-Jen Chiang, "The Levels of Abstraction Problem in Patent Law," *Nw. U.L.* 105, Rev 1097 (Summer 2011): 1136-37; *Mayo Collaborative Servs v. Prometheus Labs, Inc.*

[41] Lessig, *Free Culture*.

[42] Kant's theory of "private right" in his exposition in the *Metaphysics of Morals*, helps draw the sense of possession of a private right of control over public use. Kant, *Metaphysics of Morals*.

[43] Human factors design is often expressed as a law of nature, where "Every thing in nature works according to laws." Kant concedes, "The representation of an objective principle in so far as it is necessitating for a will is called a command (of reason), and the formula of the command is called imperative." Kant, *Metaphysics of Morals,* Kindle locations 1504, 1516-1517.

[44] It is that "A rational being must always consider itself as legislating in a kingdom of ends possible through freedom of the will, whether as a member, or as its head. It cannot, however, occupy the position of the latter merely by the maxims of its will, but only if it is a completely independent being, without need or limitation of its capacities adequate to the will." Legislation must be consistent with a universal law, "and thus only in such a way that the will could through its maxim consider itself as at the same time universally legislating." Kant, *Metaphysics of Morals,* Kindle locations 1907-1909, 1912-1913. Lessig, *The Future of Ideas*.

[45] Bloom, *Closing of the American Mind*.

[46] "What refers to general human inclinations and needs has a *market price*; what, even without presupposing a need, conforms with a certain taste, i.e. a delight in the 4:435 mere purposeless play of the powers of our mind, has a *fancy price*; but what constitutes the condition under which alone something can be an end in itself does not merely have a relative worth, i.e. a price, but an inner worth, i.e. *dignity*." Kant, *Metaphysics of Morals,* Kindle locations 1925-1929.

[47] Quentin Palfrey, "A Clearer Vision for American Innovation and Jobs," *The White House* (September 7, 2011), under "Office of Science and Technology Policy," http://www.whitehouse.gov/blog/2011/09/07/clearer-vision-american-innovation-and-jobs (accessed March 25, 2013); Obama, "A Strategy for American Innovation: Driving Towards Sustainable Growth and Quality Jobs."; "A Strategy for American Innovation: Securing Our Economic Growth and Prosperity," *The White House* (September 7, 2011), under "Innovation Strategy," http://www.whitehouse.gov/innovation/strategy (accessed March 25, 2013); "A Strategy for American Innovation: Securing Our Economic Growth and Prosperity," *The White House* (September 7, 2011), under "Executive Summary," http://www.whitehouse.gov/innovation/strategy/executive-summary (accessed March 25, 2013); Braden Cox and Steve Delbianco, "National Policies as Platforms for Innovation: Reconciling a Flat World with Creative Cities," *ACT : Protecting Small Business Innovation* (February 2007), under "Executive Summary," http://actonline.org/publications/2007/02/07/national-policies-as-platforms-for-innovation/ (accessed March 25, 2013).

[48] Chris Vogel, "How MIT Became the Most Important University in the World," *Boston Magazine* (November 2012), http://www.bostonmagazine.com/2012/10/mit-important-university-world-harvard/ (accessed March 25, 2013); Lauren Landry, "How MIT Became the Most Important University in the World," *BostInno : The View from Inside Boston* (July 1, 2012), http://bostinno.com/2012/07/01/how-the-mit-media-lab-plans-to-innovate-innovation/ (accessed March 25, 2013); *MIT Media Lab*, http://www.media.mit.edu/ (accessed March 25, 2013).

[49] Harvard Innovation Lab, http://ilab.harvard.edu/ (accessed March 25, 2013); "Introducing the i-Lab," *Harvard Magazine* (January-February 2012), http://harvardmagazine.com/2012/01/introducing-the-i-lab (accessed March 25, 2013).

[50] Stanford Center for Innovations in Learning, "Stanford Center for Innovations in Learning for Stanford University: Multistory teaching environment," http://www.ideo.com/work/stanford-center-for-innovations-in-learning/ (accessed March 25, 2013); "About IDEO: a global design consultancy, creating impact through design," *IDEO*, http://www.ideo.com/about/ (accessed March 25, 2013); "Innovation Master Series," *Stanford University*, under "Center for Professional Development," http://scpd.stanford.edu/design/ (accessed March 25, 2013).

[51] Bill Clinton, "The Case for Optimism," *Time Magazine* (October 1, 2012), http://www.time.com/time/magazine/article/0,9171,2125031,00.html (accessed March 25, 2013).

[52] Ibid.

[53] Palfrey, "A Clearer Vision for American Innovation and Jobs"; Obama, "A Strategy for American Innovation: Driving Towards Sustainable Growth and Quality Jobs"; "A Strategy for American Innovation: Securing Our Economic Growth and Prosperity," *The White House* (September 7, 2011), under "Innovation Strategy," http://www.whitehouse.gov/innovation/strategy (accessed March 25, 2013); "A Strategy for American Innovation: Securing Our Economic Growth and Prosperity," *The White House* (September 7, 2011), under "Executive Summary," http://www.whitehouse.gov/innovation/strategy/executive-summary (accessed March 25, 2013).

[54] Ibid.

[55] Cox and Delbianco, "National Policies as Platforms for Innovation."

[56] In *The Innovator's Dilemma* (1997), Clayton Christensen describes "disruptive technologies" as innovations that are generally "cheaper, simpler, smaller, and, frequently, more convenient to use." Innovations can lead to breakthroughs that re-shape an entire industry in a matter of a few years or even months. Cox and Delbianco, "National Policies as Platforms for Innovation," 2-4.

[57] Obama, "A Strategy for American Innovation: Driving Towards Sustainable Growth and Quality Jobs."

[58] Ibid.

[59] "Bubble growth economy" is unsustainable. For instance, in the housing market decline, prices lost a quarter of their value in two and a half year, accompanied by the stock market collapse that wiped out over $13 trillion in wealth in 18 months. "The bursting bubble on inflated home prices, maxed-out credit cards, over-leveraged banks, and overvalued assets wreaked havoc on the real economy, trigging what is expected to be the longest and deepest recession since World War II and driving the unemployment rate to its highest level in a quarter century" in Obama, "A Strategy for American Innovation: Driving Towards Sustainable Growth and Quality Jobs."

[60] Posner, "Do Patent and Copyright Law Restrict Competition and Creativity Excessively?"

[61] Ibid.

[62] Ibid.

[63] Ibid.

[64] Ravicher, "Daniel Ravicher Speaks on Patent Reform," 7.

[65] H.R. 1249 Amendment Act, http://www.uspto.gov/aia_implementation/bills-112hr1249eh.pdf (accessed March 25, 2013).

[66] Ibid.

[67] The AIA shifts the emphasis from the date the invention was created to the date the inventor submitted the patent application to the USPTO, urging immediate filing which typically hinders the small inventor. Some argue that "first-to-tile" also emphasizes laying claim to the abstract idea over a well conceptualized and documented invention that may actually be produced. Nathan Hurst, "How the America Invents Act Will Change Patenting Forever," *Wired Magazine* (March 15, 2013), http://www.wired.com/design/2013/03/america-invents-act/all/ (accessed March 25, 2013).

[68] Ibid., other resources for additional provisions: Monica Winghart, "The top 5 things companies should know about the America Invents Act," *Venture Beat* (December 24, 2012), http://venturebeat.com/2012/12/24/top-5-america-invents-act/ (accessed March 25, 2013). Read more at: http://phandroid.com/2013/03/01/america-invents-act/ (accessed March 25, 2013), http://www.forbes.com/sites/jesscollen/2013/03/15/patent-reform-2013-the-america-invents-act-much-ado/ (accessed March 25, 2013).

[69] Obama, "A Strategy for American Innovation: Driving Towards Sustainable Growth and Quality Jobs."

[70] USPTO requests response by March 15, 2012. U.S. Patent and Trademark Office, "Request for Comments on Preparation of Patent Applications," *Federal Register : The Daily Journal of the United States Government* (January 15, 2013), https://www.federalregister.gov/articles/2013/01/15/2013-00690/request-for-comments-on-preparation-of-patent-applications (accessed March 25, 2013).

[71] Read more at: https://www.eff.org/deeplinks/2013/02/deep-dive-software-patents-and-rise-patent-trolls (accessed March 25, 2013); http://www.govtrack.us/congress/bills/113/hr55/text (accessed March 25, 2013).

[72] Gary S. Becker, "The Age of Human Capital" http://media.hoover.org/sites/default/files/documents/0817928928_3.pdf (accessed March 25, 2013); and "The Age of Human Capital," Gary S. Becker, in Edward P. Lazear, *Education in the Twenty-First Century* (Palo Alto, CA: Hoover Institution Press, 2002): 3-8. In this Knowledge Age, "greater investments in human capital once put Americans collectively on top of the world." Stephen Kotkin, "Minding the Inequality Gap," *The New York Times* (October 4, 2008), http://www.nytimes.com/2008/10/05/business/05shelf.html (accessed March 25, 2013). Clinton, "The Case for Optimism"; "About the Program," *Georgetown University*, under "Communication, Culture & Technology," http://cct.georgetown.edu/134010.html (accessed March 25, 2013).

[73] Lessig, *The Future of Ideas*.

[74] Promotion-focused performance is based on the premise that "everything will work out." On the other hand, prevention-focused performance arguably increases stability and decreases stress as a result of fulfilling duties and responsibilities. Heidi Grant Halvorson, "Nine Ways Successful People Defeat Stress," *Harvard Business Review* (December 2012), under "HBR Blog Network," http://blogs.hbr.org/cs/2012/12/nine_ways_successful_people_de.html (accessed March 25, 2013).

[75] This battle is also played out in courts internationally, as Apple and Android smartphone companies lodged dozens of intellectual property complaints against each other. "Apple in 2012: Controversy and Competition," *The Washington Post* (Dec 27, 2009), under "Technology," http://www.washingtonpost.com/business/technology/apple-in-2012/2012/12/27/f4ce027c-5043-11e2-8b49-64675006147f_story.html?wprss=rss_homepage&tid=pp_widget (accessed March 25, 2013).

[76] See: Illustration II. Figure 2: Waves of Innovation of the First Industrial Revolution, "TNEP International Keynote Speaker Tours," *The Natural Edge Project*, http://www.naturaledgeproject.net/Keynote.aspx (accessed March 25, 2013).

Chapter 2

[1] Swiss saying on justice and morality. Originally read in Adam B. Jaffe and Josh Lerner, *Innovation and Its Discontents: How Our Broken Patent System is Endangering Innovation and Progress, and What to Do About It* (Princeton, NJ : Princeton University Press, 2004), 78, quoting from: Fritz Machlup and Edith Penrose, "The Patent Controversy in the Nineteenth Century," *The Journal of Economic History* 10, no. 1 (May, 1950): 17, http://www.jstor.org/stable/2113999 (accessed April 2, 2013), where the quote was "Cited disapprovingly by": Wilhelm Roscher, "Nationalokonomik des Handels und Gewerbefleisses," *System der Volkswirtschaft* (Stuttgart, i881): 11, 758. Also referenced in Dominique S. Ritter, "Switzerland's Patent Law History," *Fordham Intellectual Property, Media and Entertainment Law Journal* 14, no. 2 (2004): 463.

[2] The case background to *CLS Bank Int'l v. Alice Corp* describes that Alice sued CLS for infringement of four patents covering "a computerized trading platform for exchanging obligations in which a trusted third party settles obligations between a first and second party so as to eliminate 'settlement risk'. Settlement risk is the risk that only one party's obligation will be paid, leaving the other party without its principal." The patents included method, system, and computer program product claims. Jason Rantanen, "CLS Bank v. Alice: The 'Nothing More Than' Limitation on Abstract Ideas," *Patently-O*, July 2012, http://www.patentlyo.com/patent/2012/07/cls-bank-v-alice-corp.html (accessed March 27, 2013); "What Constitutes an Abstract Idea?" *Greenberg Traurig, LLP*, February 2013, http://www.gtlaw.com/portalresource/lookup/wosid/contentpilot-core-401-22806/pdfCopy.name=/GTAlert_CLS%20Bank%20Patent%20Litigation_Feb2013.pdf (accessed March 27, 2013).

[3] Dennis Crouch, "CLS Bank v. Alice Corp: Software Patentability On the Briefs," *Patently-O*, December 2012, http://www.patentlyo.com/patent/2012/12/file-attachment-bsa-software-alliance-iso-clspdf-169-kb.html (accessed March 28, 2013); Steven Lundberg, "Oral Arguments in CLS Bank Give Hope to Both Sides," *National Law Review*, March 6, 2013, http://www.natlawreview.com/article/oral-arguments-cls-bank-give-hope-to-both-sides (accessed March 28, 2013); "Patenting Software: Higher Court Rulings May Be On The Way," *Contegix*, http://www.contegix.com/patenting-software-higher-court-rulings-may-be-on-the-way/ (accessed March 28, 2013).

[4] The study of natural law and its applicability towards intellectual property suggests further research. Durant, "Patentable Subject Matter Eligibility in the Aftermath of Bilski and Prometheus," 45; 35 U.S.C. § 101 (2006 & Supp. V 2011).

[5] *Bilski v. Kappos*, 130 S. Ct. 3218, 3225, 177 L. Ed. 2d 792 (2010) (citing Le Roy v. Tathum, 14 How. 156, 174-75, 14 L. Ed. 367 (1853)).

[6] Ibid.

[7] George C. Beck, Jeanne M. Gills, and Jeffrey J. Mikrut, "United States: Oral Argument In CLS Bank: Redefining Patent Eligibility For Computer-Related Inventions?" *Foley & Lardner LLP*, February 15, 2013, http://www.mondaq.com/unitedstates/x/221838/Patent/Oral+Argument+In+CLS+Bank+Redefining+Patent+Eligibility+For+ComputerRelated+Inventions (accessed March 28, 2013); Durant, "Patentable Subject Matter Eligibility in the Aftermath of Bilski and Prometheus," 45.

[8] Ibid.

[9] "Many concerns were also raised by amici curiae. Briefs such as those from British Airways and the Computer & Communications Industry Association (CCIA) (which is the creator of Patent Progress) expressed concerns with language from the Federal Circuit's original opinion: that patents are presumptively not abstract and that a § 101 inquiry should be secondary to §102 and §103 inquiry. CCIA's brief sided with CLS Bank, stating Mayo v. Prometheus requires an innovative step to satisfy the § 101 screening threshold for subject matter patentability." Brendan Coffman, "Summarizing the Briefs and Arguments in CLS Bank v. Alice," *PatentProgress*, February 7, 2013, http://www.patentprogress.org/2013/02/07/summarizing-the-briefs-and-arguments-in-cls-bank-v-alice/ (accessed March 28, 2013).

[10] *Bilski v. Kappos*.

[11] Crouch, "CLS Bank v. Alice Corp: Software Patentability On the Briefs;" Grant Gross, "Software Firms Go to Washington to Defend Patents : Software patents are needed to protect huge investments by developers, firms tell congressional staffers," *CIO*, February 21, 2013, http://www.cio.com/article/729239/Software_Firms_Go_to_Washington_to_Defend_Patents (accessed March 28, 2013).

[12] Stephen C. Durant, Warren D. Woessner, Ph.D., Robin A. Chadwick, Ph.D., and William E. Kalweit "Patentable Subject Matter Eligibility in the Aftermath of Bilski and Prometheus," *Patents4Software: Schwegman, Lundberg & Woessner, P.A.*, January 10, 2013, http://www.patents4software.com/ (accessed March 28, 2013).

[13] Ibid.

[14] Historically, Kant's philosophical enquiries bear strong, yet ironic parallels, to Knowledge Age challenges. Kant approaches epistemological issues during a time of upheaval and war, in historical context, similar to that of modern crises in the dawning of a revolutionary age. Recent warring patent litigation reflects similar times and possesses larger societal implications. Creativity, equity, war, and peace, infringe on ideas of freedom. Kant's philosophical notions nicely confer with the contemplative framework to the understanding intellectual property that provides the necessary clarity and scope to defining the language of knowledge.

[15] Kant, *Critique of Judgement*; Immanuel Kant, *Critique of Pure Reason*, translated by John Miller Dow Meiklejohn, (MobileReference), Kindle edition.

[16] Supreme Court Decision: *Mayo Collaborative Services v. Prometheus Laboratories, Inc.,* No. 10-1150, Slip Op. at 16. http://www.supremecourt.gov/opinions/11pdf/10-1150.pdf (accessed March 28, 2013).

[17] "35 USC § 101 - Inventions patentable," *Cornell University Law*, under "Legal Information Institute," http://www.law.cornell.edu/uscode/text/35/101 (accessed March 25, 2013).

[18] The statute states, that first, "a newly discovered law of nature is itself unpatentable," and secondly, "the application of that newly discovered law is also normally unpatentable if the application merely relies upon elements already known in the art." Dennis Crouch, "Mayo v. Prometheus: Natural Process + Known Elements = Normally No Patent," *Patently-O*, March 20, 2012, http://

www.patentlyo.com/patent/2012/03/mayo-v-prometheus-natural-process-known-elements-normally-no-patent.html (accessed March 28, 2013).

[19] *Mayo Collaborative Services v. Prometheus Laboratories, Inc*.

[20] Peggy Focarino, "New Examining Procedure Related to Mayo v. Prometheus," *US Patent & Trademark Office*, July 5, 2012, http://www.uspto.gov/blog/director/entry/new_examing_procedure_related_to (accessed March 28, 2013).

[21] Kant, *Critique of Judgement*, 182-183. Reuscher's class lectures.

[22] Ibid., 183.

[23] Ibid.

[24] Ibid., 54.

[25] Ibid., 44.

[26] Ibid.

[27] William Douglas Sellers, "The Flash of Genius Doctrine : Approaches the Patent Office," *Engineering and Science Monthly* 7, no. 10 (November 1944): 3.

[28] Ibid., 4.

[29] Kant, *Critique of Judgement*, 185. Reuscher's class lectures.

[30] Ibid., 185-186.

[31] Ibid., 186.

[32] Sellers, "The Flash of Genius Doctrine," 4.

[33] Delineating valid patents by their characterizations may is not so different from what is occurring in the courts today, simply due to improper issuing of patents that hold minimal claim. In Apple v. Samsung, Judge Koh asked attorneys if they could differentiate the two products that she displayed. Koh emphasized the nature of copying. However, at a deeper level, the lack of "novelty" or "obviousness" of abstract ideas induce perceptions of "copying" over that of "natural law." Arguably, characterizations informed the nature of the patent validity verses uniquely inventive patent objectives that qualify for ownership and exclusionary measures. Stating in court, the attorneys must be "crazy" if they think she would listen to their opposing arguments to what was perceived to be obvious or not novel in patent claims illustrated that the issue of what constituted real property and categorizations were not in question in this particular case. Cecilia Kang, "As Apple and Samsung Vie Over Tablet Patents, Judge at Center of a Tech Storm," *The Washington Post*, July 18, 2012, http://articles.washingtonpost.com/2012-07-18/business/35489089_1_foss-patents-apple-and-samsung-florian-mueller (accessed March 28, 2013).

[34] "Fine art is only possible as a product of genius." Kant, *The Critique of Judgement*, Kindle locations 2215, 2220.

[35] "Upon this feeling of freedom in the play of our cognitive faculties--which play has at the same time to be final rests that pleasure which alone is universally communicable without being based on concepts." Ibid., 2198-2199.

[36] Kant, *Critique of Judgement*, 186. Reuscher's class lectures.

[37] Kant, *Metaphysics of Morals*, 44-45. Reuscher's class lectures.

[38] Ibid., 53-54.

[39] Ibid., 53-54, 43.

[40] Kant, *Metaphysics of Morals*, Kindle location 2476.

[41] Bloom, *Closing of the American Mind*, 180.

[42] Kant, *Metaphysics of Morals*, Kindle locations 2301, 2335-2336.

[43] §49 "On the Powers of the Mind Which Constitute Genius" in Kant, *Critique of Judgement*, 181-182.

[44] Ibid., 173-174. Reuscher's class lectures.

[45] Ibid., 53-54.

[46] Ibid.

[47] Ibid.

[48] Ibid., 54.

[49] Ibid., 53-54.

[50] Ibid.

[51] Ibid., 60.

[52] Ibid., 175.

[53] Ibid., 65.

[54] Ibid., 53 -54.

[55] Ibid.

[56] Ibid.

[57] Jaffe and Lerner, *Innovation and Its Discontents,* 78.

[58] Kant, *Critique of Judgement,* 44.

[59] Discussion on feelings that note the aesthetic is as important as scientific justification in the ranking of fine arts. Ibid.

[60] Aesthetic judgement is based on a feeling, not as a critical judgement. A conceptual judgement of technique is involved in the process. Ibid., 53.

[61] "Art is not imitation of nature but liberation from nature. A man who can generate visions of a cosmos and ideals by which to live is a genius, a mysterious, demonic being. Such a man's greatest work of art is himself. He who can take his person, a chaos of impressions and desires, a thing whose very unity is doubtful, and give it order and unity, is a personality. All of this results from the free activity of his spirit and his will. He contains in himself the elements of the legislator and the prophet, and has a deeper grasp of the true character of things than the contemplatives, philosophers, and scientists, who take the given order as permanent and fail to understand man." Bloom, *Closing of the American Mind,* 181.

[62] Kant, *Critique of Judgement*, 44. Reuscher's class lectures.

[63] Ibid., 162.

[64] Ibid.

[65] Ibid., 164.

[66] Similar contentions from 1944 exist in contemporary times. Sellers, "The Flash of Genius Doctrine," 4.

[67] In 1944, "the current judicial trend visible from many signposts, is toward the elimination of patents as a factor in American economic life." Seventy years prior, regulators and the courts questioned "whether or not a 'uniform test or standard' for determining patentability, as recommended by the Commission, is possible or practical is doubtful. There is no doubt, however, but that the 'flash of genius' should not be the test or standard." Stated as a carcinogenic misconception, the real step forward exists in philosophical grounding, to eliminate the necessity for repetitive historical design in human factors engineering. Ibid.

[68] Kant, *Critique of Judgement*, 174.

[69] Part of the problem with intellectual property is the role of identity in defining abstract ideas. Abstract ideas includes that of "geist" that participates with reason. Creativity includes reason and understanding to form concepts upon which externalities of property may be applied. According to Bloom, the modern day "change in self-description shows how the Zeitgeist has altered and how science, instead of standing outside of it and liberating men from it, has been incorporated into it." The structure for a solid

foundation in developing solid intellectual property legislation suffers because, “The theoretical life has lost its status,” and is unable to lend itself to determining critical definitions like the “nature of ideas” to approach everyday problems. “Now the scientist scrambles to recover his position as the perfection of what all men want to be; but what all men want to be has changed, undermining the natural harmony between science and society.” Bloom, *Closing of the American Mind,* 182.

Chapter 3

[1] Letter from Thomas Jefferson to Isaac MacPherson, *The Writing of Thomas Jefferson*, edited by Albert E. Bergh & Andrew A. Lipscomb (1905), http://press-pubs.uchicago.edu/founders/documents/a1_8_8s12.html (accessed March 28, 2013).

[2] On Kant, language and the benefits of communication, see: Ben Klemens, "The Rise of the Information Processing Patent," *Boston University School of Law*, http://www.bu.edu/law/central/jd/organizations/journals/scitech/volume141/documents/Klemens.pdf (accessed March 28, 2013).

[3] Michael N. Forster, "Kant's Philosophy of Language," *Tijdschrift voor Filosofie* 74 (2012): 485-511, http://philosophy.uchicago.edu/faculty/files/forster/Kant%20Phil%20Lnguage%20Forster-1.pdf (accessed March 28, 2013).

[4] Feldman, *Rethinking Patent Law*, 16.

[5] Ibid., 99-140.

[6] One philosopher notes, "truth is enshrined in language."

[7] Feldman, *Rethinking Patent Law,* 15.

[8] One challenge, Feldman argues, is that "the entire concept of patenting revolves around the idea of granting rights for introducing something that has not existed before and is not obvious based on those things that do exist." This challenges the creator to describe an invention that, by definition, with existing vocabulary. "Whatever language society has chosen to represent those things that exist around us must be pressed into the service of describing something that did not exist when the language and its concepts developed." The scholar then explains that "It is, of course, possible that language concepts exist when the invention does not. The human mind can conceive of and describe many concepts long before those concepts can be translated into reality. In those circumstances, the language constructs may be in place already, and the inventor can turn to them." Language may help describe what the human mind can conceive, translating concepts in to reality. Ibid., 16.

[9] Undoubtedly, the new territory that inventions explore present linguistic challenges. Translating abstract ideas into "particular successful practice" naturally wander in to "new and unexpected territory. . . There certainly may be minor, technical inventions whose innovations are just barely differentiated enough from the prior art to warrant patenting but not so different that existing language tools are insufficient," as Feldman contends. Feldman argues however, that for much of patenting, "applying old language to new concepts will create challenges that prevent certainty at the time of the grant." The linguistic devices used for describing a patented invention, depend on comparing "the invention to something that did not exist at the time the language developed. Once again, the patent system is relying on language to serve as the basis for understanding something that did not exist when the language developed." This additional challenge makes the indefiniteness of language much more problematic in patent law than in contract law, Feldman asserts, and therefore a perspective shift in viewing patent law as "bargaining rights" leads to more productive discourse. Ibid., 17.

[10] The indefiniteness of language leads to a question-and-answer process, that ultimately results in a bounded set of rights. However, re-examining the bounded set of rights exists as each potential product appears and questions the boundaries. Unknown future developments are inherent in the process and require predictions, otherwise, to determine the legitimacy of the bounded set of rights, where "Future inventors will have to argue that their inventions fall outside of the expired patent in order to demonstrate that their work is different from prior art." Ibid., 18.

[11] When we accept language as inherently vague, then according to Bloom, "we have just another example of the pollution of language. But this form of pollution, although less feared than the other kind, is really more deadly. It is the intellectual disorder of our age. The use of insignificant speech entails loss of clarity about what science and art are, weakening both in an impossible synthesis of opposites appealing to a society that wants to be told that it enjoys all good things." Bloom, *Closing of the American Mind,* 182.

[12] Kant, *Critique of Judgement*, 53-54.

[13] Kant, *Metaphysics of Morals*, Kindle locations 2348-2349.

[14] Kant, *Critique of Judgement*, 44.

[15] Ibid., 172-173.

[16] Kant, *Metaphysics of Morals*, Kindle locations 2494-2495.

[17] Referenced from Kant (A52/B76) found in: Michelle Grier, "Kant's Critique of Metaphysics."

[18] Ibid.

[19] Kant, *Critique of Judgement*, 180.

[20] The thought entity of systematic consciousness comes from "Ein Genanken Ding." Reuscher's class lectures.

[21] Kant, *Metaphysics of Morals*, Kindle locations 2345-2346.

[22] Bloom contends that "Scientists do not prove that there are no miracles, they assume it; without this assumption there is no science." The technologists as a scientist also tend to advocate for the removal of patents because the assumed "miracle" or "geist" in invention recognizably makes patent claims obscure. However, policymakers, legislatures, business folks may contend differently in the desire to reap economic benefits from what can be considered tangible assets and durable goods. Bloom, *Closing of the American Mind*, 182.

[23] Kant, *Metaphysics of Morals*, Kindle locations 2515-2516.

[24] Ibid., 2504-2509.

[25] Ibid., 2508-2511.

[26] Ibid., 2504-2507.

[27] Ibid.

[28] Ibid., 2508-2511.

[29] Ibid., 2515-2517. Kant, *Critique of Judgement*, 172-173*;* Kant, *Critique of Pure Reason*.

[30] Kant, *Critique of Judgement*, 172-173.

[31] Kant, *Metaphysics of Morals*, Kindle locations 2512-2513.

[32] Ibid., 2518-2519.

[33] "But if it were to fetch in addition an object of the will, i.e. a motive, from the world of understanding, then it would overstep its bounds, and presume acquaintance with something of which it knows nothing." Aesthetics, objects of the will, motives from the world of understanding cannot be bound. Ibid., 2528-2529. Reuscher's class lectures.

[34] Ibid.

[35] Ibid.

[36] Ibid.

[37] Lessig, *The Future of Ideas*.

[38] Kant, *Metaphysics of Morals*, Kindle locations 2538-2541.

[39] Ibid., 2543-2544.

[40] Ibid., 2552-2555.

[41] "Our judgments and principles are *only* reasonable to the extent that they can be accepted by all —which means, among other things, that they cannot assume the authority of any particular organization or leader." According to Kant, "nothing is required but… the least harmful… freedom: namely, freedom to make *public use* of one's reason in all matters" (8:36). The public use of reason is not bound to any given ends and is accountable to all: one speaks as a member of "the society of citizens of the world" (8:37) Kant's equation of reason with the aspiration to full publicity. "To use one's own reason" is to be engaged in the quest to address *all* "citizens of the world." Garrath Williams, "Kant's Account of Reason," *The Stanford Encyclopedia of Philosophy* (Spring 2013 Edition), edited by Edward N. Zalta, http://plato.stanford.edu/archives/spr2013/entries/kant-reason/, http://plato.stanford.edu/entries/kant-reason/#PraReaMorPriPurPraRea (accessed March 27, 2013). Kant, *Critique of Pure Reason* describes the public use of reason and the importance of communication. Kant, *Critique of Judgement*.

[42] Kant referenced: (A306/B363-A308/B365). Grier, Michelle, "Kant's Critique of Metaphysics."

[43] Just as Supreme Court Justice Douglas said, "Common Sense Revolts at the idea." Concepts may be viewed similarly to real property, and the sky argument. In the 1945 case, *United States v. Causby*, Causby argued that common law and the constitution held that property owners owned from the land to the heavens, violating the Fifth Amendment's Taking Clause. For more information, see: http://www.oyez.org/cases/1940-1949/1945/1945_630 (accessed March 27, 2013). "Concepts" in the most straightforward terms, as Kant would envision, may be viewed as an externality of real property that may be bound by common law. Sky, to the heavens and above, may be seen as "ideas," to infinity and beyond. Real property contains metes and bounds, limited within time and space. In this sense, intellectual property metaphorically includes both the "real property" aspect of concepts and infinite "sky" conveying similar context to that of an abstract idea. Concepts can be subject to law, not inherently abstract ideas. Thus, "common sense revolts at the idea" that ideas, as the sky, should be treated as real property, and encourages the reason "why geniuses, just as the starts, must shine without pay." Good Fences (that of real property or conceptual property as Kant defined in his *Metaphysics*) make for "good neighbors." Likewise, appropriately using patents as "good fences" would garner the same respect. When the boundaries that the "fences" create are inappropriately placed or lack enforcement, neighbors no longer appear friendly. Land to Sky metaphor found in Lessig, *Free Culture*, 2; Kant, *Critique of Judgement*; Kant, *Critique of Pure Reason*.

[44] Letter from Thomas Jefferson to Isaac MacPherson, *The Writing of Thomas Jefferson*.

[45] Kant, *Metaphysics of Morals*, 57-58.

[46] Kant, *Metaphysics of Morals*, Kindle locations 2519-2521.

[47] Garrath Williams, "Kant's Account of Reason."

[48] Natalie Angier, "The Life of Pi, and Other Infinities," *The New York Times*, December 31, 2012, http://www.nytimes.com/2013/01/01/science/the-life-of-pi-and-other-infinities.html?pagewanted=1 (accessed March 28, 2013).

[49] Jaffe and Lerner, *Innovation and Its Discontents*, 95.

[50] Ibid., 78; Lessig, *Free Culture*, 2.

Chapter 4

[1] Steven Johnson, "Steven Johnson: Where good ideas come from," *TED: Ideas Worth Spreading*, July 2010, http://www.ted.com/talks/steven_johnson_where_good_ideas_come_from.html; Adrianna Huffington, "Making Great Ideas Even Greater: Introducing TEDWeekends," *Huffington Post*, November 2, 2012, http://www.huffingtonpost.com/arianna-huffington/ted-weekends-launch_b_2061285.html.

[2] The "freshwater" continental economic school of thought tend to lean towards laissez-fair ideas represented by the Chicago School of Economics, Carnegie Mellon University, University of Rochester, and the University of Minnesota. This school of thought contrasts with the "saltwater" school associated with Berkley, Harvard, MIT, UPenn, Princeton, and Yale.

[3] Kant, *Perpetual Peace*, Kindle locations 2732-2751.

[4] U.S. Patent & Trademark Office, "Software Partnership," *USPTO*, February 27, 2013, http://www.uspto.gov/patents/init_events/software_partnership.jsp (accessed February 27, 2013).

[5] Kant, *Metaphysics of Morals*, Kindle locations 1923-1925.

[6] Historically, revolutions result from similar discontent. The information revolution extemporaneously leads to a revolution in knowledge, reforming how individuals perceive the intellectually processes of information, based on Kant's theory of knowledge.

[7] Christopher Riley, "The Need for Software Innovation Policy," http://jthtl.org/content/articles/V5I3/JTHTLv5i3_Riley.PDF (accessed March 28, 2013). Posner, "Do Patent and Copyright Law Restrict Competition and Creativity Excessively?"

[8] Thomas Kelley and Jonathan Littman, *The Ten Faces of Innovation: IDEO's Strategies for Defeating the Devil's Advocate and Driving Creativity Throughout Your Organization (*New York, NY: Crown Publishing Group, 2006), Kindle edition.

[9] Lawyers of small tech entrepreneurs and small businesses object to the removal of software patents, because attorneys would have less to defend over the protection over creators' ideas. Then again, small tech entrepreneurs would less likely be sued over patent infringement if software patents were inapplicable to their innovative notions and could lend itself to the innovative movement and grow as a result of their innovations. Surely, the lawyers of small tech entrepreneurs may have a vested interest to protect creators' ideas, that may conflict with innovative means. Open source code and open source communities have proven to excel in creative environments, generating ideas more rapidly. Hence, the availability of information leads to knowledge. In our knowledge age, this World Wide Web of data and exchange of information as well as ideas, creates new innovative products and spurs creativity. Kant reinforces these forces of creativity in Kant's theory of knowledge. Kant, *Metaphysics of Morals*.

[10] Andrew W. Torrance, "The Patent Game: Experiments in the Cathedral of Law," *Google*, August 16, 2010, http://www.youtube.com/watch?v=q1Pi4w8ddA8 (accessed March 28, 2013).

[11] Torrance, "The Patent Game: Experiments in the Cathedral of Law."

[12] Johnson, "Steven Johnson: Where good ideas come from."

[13] "For nothing has any worth other than that which the law determines for it. But precisely because of this, the legislation that determines all worth must itself have a dignity, i.e. unconditional, incomparable worth, for which the word *respect* alone makes a befitting expression of the estimation a rational being is to give of it. *Autonomy* is thus the ground of the dignity of a human and of every rational nature." Kant, *Metaphysics of Morals*, Kindle locations 1947-1951; Lessig, *Free Culture*.

[14] Kant, *Metaphysics of Morals*, Kindle locations 1828-1829.

[15] We see such conditions in other countries that lack intellectual property protections. Innovation does not necessarily increase in the long term.

[16] Kant, *Metaphysics of Morals*, Kindle locations 1829-1832.

[17] Lessig, *Free Culture*.

[18] Kant, *Metaphysics of Morals*, Kindle locations 1942-1947, 2254-2255. "Do not treat others as you would not be treated" quoted as a negative formulation of the Golden Rule.

[19] For example, China's lack of free access to information limits the full and meaningful characteristics of the Information Age . Bereft of world wide access to information, countries that exhibit limitations in data exposure, then remain limited to the breadth of Knowledge Age issues, by definition. Without first experiencing a breadth of information exposure, characteristics of Knowledge cannot fully unfold. Application of Kant's theory of knowledge reaffirms that epistemological gains occur through data dissemination from Kant, *Critique of Judgement*. Kant, accordingly, may maintain that human dignity, not maximized by that of free will would stifle creative output. Creation requires protection of oneself and one's matters. Kant, *Metaphysics of Morals*.

[20] Ibid.

[21] Michael Sandel argues that "ideological food fights," arguments that we have over health care, gaps between rich and poor, or affirmative action, lie big questions beneath the surface about moral philosophy and justice. But too rarely do we argue and defend those questions about moral politics. Justice and morality speaks of Aristotle's theory of justice, as one interpretation to how it informs the way we think and argue about questions today. Justice means giving people what they deserve: "the real questions begin when discussing who deserves what and why." When arguing about justice, conversations turn to social institutions and "what qualities are worthy of honor and recognition." The way toward mutual respect is to directly engage with citizens and to not "leave moral convictions outside of politics." In this way, the art of democratic argument may be restored. Michael Sandel, "Michael Sandel: The Lost Art of Democratic Debate," *TED: Ideas Worth Spreading*, Feb 2010 video, http://www.ted.com/talks/michael_sandel_the_lost_art_of_democratic_debate.html (accessed March 28, 2013).

[22] Ibid.

[23] Kant, *Metaphysics of Morals*, Kindle locations 1942-1947.

[24] Kant, *Metaphysics of Morals,* 43.

[25] Kant, *Metaphysics of Morals,* Kindle locations 1840-1841.

[26] Thinking of these two schools of thoughts as extremes of one another is too polarizing, like the issue of abortion, where the classifications of pro-life and pro-choice imply the exclusion of the other. As if innovation necessarily excludes viewing software patents as real property, and as if real property excludes the benefits of innovation and sharing. The ideal solution to finding common ground, where real property may be contributed to the commons, and where innovation recognizes the risks of the creator and aptly compensates for the risks of innovation and creation of ideas, recognizing the genius as well as the desire for maximizing human autonomy. Innovation and economy benefit.

[27] Kant, *Metaphysics of Morals*.

[28] Lessig, "Law Regulating Code Regulating Law."

[29] Kant, *Perpetual Peace*.

[30] Ibid., Kindle locations 2711-2714.

[31] Legal scholars' remedies to the broken tech patent law system. Some scholars admit that the law is necessarily politically indeterminate, making fixing a broken patent system impossible. The concept of patents and how they are issued makes it almost impossible for the courts to determine who the real inventors are and, even more fundamentally, to distinguish between innovation and improvement. The laws and policies under which the patent system works and the history of intellectual property decisions do not match the Knowledge Age situation. The result is a climate of uncertainty about the outcome of court actions that heightens risk, dries up investment, and inhibits creativity.

[32] More on functioning patenting: Peter Menell, "It's Time to Make Vague Software Patents More Clear," *Wired*, February 7, 2013, http://www.wired.com/opinion/2013/02/its-time-to-make-vague-software-patents-more-clear/ (accessed March 29, 2013); Jason Rantanen, "FM v. Google: Means-plus-Function Indefiniteness and O2 Micro Challenges," *Patently-O*, February 14, 2013, http://www.patentlyo.com/patent/2013/02/fm-v-google-indefiniteness-and-functional-claiming.html (accessed March 29, 2013); "In the Matter of Request for Comments and Notice Regarding Preparation of Patent Applications," *Electronic Frontier Foundation*, no: PTO–P–2011–0046 (January 15, 2013), https://www.eff.org/sites/default/files/eff_pto_comments_regarding_patent_clarity.pdf (accessed March 29, 2013); Dennis Crouch, "When a Functional Claim Limitation is the "Essence of the Invention," *Patently-O*, February 15, 2013, http://www.patentlyo.com/patent/2013/02/when-a-functional-claim-limitation-is-the-essence-of-the-invention.html (accessed March 29, 2013); Dennis Crouch, "Means Plus Function Claiming," *Patently-O*, January 14, 2013, http://www.patentlyo.com/patent/2013/01/means-plus-function-claiming.html (accessed March 29, 2013).

[33] Written description is the most common description for invalid patenting. Written description of claims reduces simultaneous invention, and lawyers' intent to expand client royalty base, at the expense of public interest and long-term economic measures. Mark A. Lemley, "Software Patents and the Return of Functional Claiming," *Stanford Public Law*, Working Paper No. 2117302 (July 25, 2012), http://ssrn.com/abstract=2117302 (accessed March 29, 2013).

[34] Discussion of types of patents regarding business method process, software, or utility is fairly irrelevant to these argument, as the label in these instances cross boundaries depending on the legal means used to protect patent or abstract ideas and beyond the scope of this project. GUI design is the end result for technological development. The discussion of language specificity continually arises at legislative, regulatory levels. As illustrated at the USPTO meeting on February 27, 2013, a legal scholar pointed to the need for a metaphysical and categorical understanding, through language differentiation. See: U.S. Patent & Trademark Office, "Software Partnership." Kant's philosophical interpretation behind the reasons for the need to clarify distinct language for vague patents elucidates patentable material. The multidisciplinary perspective from a non-patent-law, a liberal studies perspective lends coherency.

[35] Towards a system of estates in virtual property: Thomas W. Merrill, Henry E. Smith, "Optimal Standardization in the Law of Property: The Numerus Clausus Principle," *Yale Law Journal* 110, no. 1 (October 2000), http://www.yalelawjournal.org/pdf/110-1/NEW%20MERRILL.pdf (accessed March 29, 2013); Henry Hansmann and Reinier Kraakman, "Property, Contract, and Verification: The Numerous Clausus Problem and the Divisibility of Rights," *Harvard Law School John M. Olin Center for Law, Economics and Business,* Discussion Paper Series 388 (2002), http://lsr.nellco.org/harvard_olin/388 (accessed March 29, 2013).

[36] Additional publications illustrate changes to general tech industry standards to software development, tech innovation clusters, innovation teams, and research and development initiatives: "Innovation cluster as the national competitiveness tool in the innovation driven economy," *International Journal of Foresight and Innovation Policy* 2, no. 1 (2005): 1740-2824, http://inderscience.metapress.com/content/3y3hkn0vupfl23jy/fulltext.pdf (accessed March 29, 2013). The Office of Educational Technology encourages creating new education innovation ecosystems that partner across traditional domain silos of developers, schools, funders, researchers, and policymakers. "Education Innovation Clusters," *Office of Educational Technology*, http://www.ed.gov/edblogs/technology/innovation-clusters/ (accessed March 29, 2013).

[37] Ashby Jones, "Patent Case Could Clarify Use of Some Tech Basics," *The Wall Street Journal Online*, July 24, 2012, http://online.wsj.com/article/SB10000872396390443295404577544891709206980.html (accessed March 28, 2013).

[38] Ibid.

[39] Reasonable and non-discriminatory terms (RAND), also known as fair, reasonable, and non-discriminatory terms (FRAND) are terms required by standard-setting organizations for members to participate in the intellectual property standard-setting process to enhance competition in the industry while preventing members from engaging in licensing abuse, taking monopolistic advantage of intellectual property rights included in industry standards. Matt Macari, "FRANDs forever: how the smartphone industry turned a gentlemen's agreement into a full-scale patent war," *The Verge*, February 16, 2012, http://www.theverge.com/2012/2/16/2786970/FRAND-smartphone-industry-apple-motorola-samsung (accessed March 29, 2013). The Justice Department and USPTO issued an unusual joint statement in January 2012 regarding F/RAND and open-source methods that directly addressed reluctant patent owners and patent owner aggressors claiming anti-competitive FRAND patents that damage competition and inflate a patent holder's relative position: Grant Gross, "USPTO, DOJ: Injunctions on FRAND patents can be anticompetitive," *InfoWorld*, January 8, 2013, http://www.infoworld.com/d/the-industry-standard/uspto-doj-injunctions-frand-patents-can-be-anticompetitive-210399 (accessed March 29, 2013); Judge Posner's

FRAND ruling in a pro-FRAND position, see: Florian Mueller, "Intel: 'Injunctions [over] FRAND-encumbered SEPs create a risk of coerced windfall settlements'," *Foss Patents*, March 26, 2013, http://www.fosspatents.com/2013/03/intel-injunctions-over-frand-encumbered.html (accessed March 29, 2013); Amicus curiae brief by Intel in support of Judge Posner's FRAND ruling in Apple's favor against Motorola in *Apple v. Motorola,* March 20, 2013, http://www.scribd.com/doc/132494511/13-03-20-Intel-Amicus-Brief-in-Support-of-Apple-on-FRAND (accessed March 29, 2013).

[40] TRIPS: Trade-Related Aspects of Intellectual Property is an agreement by the World Trade Organization (WTO) introduces "intellectual property rules into the multilateral trading system" in recognition that "ideas and knowledge are an increasingly important part of trade." "Intellectual Property: Protection and Enforcement," *World Trade Organization,* http://www.wto.org/english/thewto_e/whatis_e/tif_e/agrm7_e.htm (accessed March 29, 2013). Additional information: "Agreement on Trade Related Aspects of Intellectual Property Rights, Including Trade in Counterfeit Goods," *World Trade Organization,* http://www.wto.org/english/docs_e/legal_e/ursum_e.htm#nAgreement (accessed March 29, 2013).

[41] U.S. Patent & Trademark Office, "Software Partnership."

[42] Ibid.

[43] An immense amount of articles have been published in this arena to support the claim.

[44] Bill Clinton, "The Case for Optimism."

[45] The "Information Age" or "Knowledge Age" as a nomenclature is a complex question of sociology, economics, and history. The knowledge age and Knowledge Revolution implies an interdependency on information in combination with reason. And therefore, intellectual property becomes more ubiquitous as the durable good, where information, combined with reason, may result in the innovations of our time that socially, historically, and economically, this century highly promotes and values. A distinction between knowledge and information exists, more broadly. It is best articulated by Kant, *Critique of Judgement*; Kant, *Metaphysics of Morals*.

[46] Michael E. Porter, "The Competitive Advantage of Nations and Regions," *Harvard Business School*, under "Research Summary," http://www.hbs.edu/faculty/Pages/item.aspx?research=6901 (accessed March 25, 2013); "National Policies as Platforms for Innovation : Reconciling a Flat World with Creative Ideas," *ACT* (February 2007), http://www.intertic.org/Policy%20Papers/Cox.pdf (accessed March 25, 2013).

[47] Lessig asserts that it is our "duty" as humans to work toward this economic end. Lessig, *Free Culture*, 236-237.

[48] "Inside Innovation: Thinking Like an Intrapreneur," *Fora.tv* (1012), under "Social Innovation Summit 2012," Pictorial Graph, http://fora.tv/2012/12/05/Inside_Innovation_Thinking_Like_an_Intrapreneur, (accessed March 25, 2013). Charles Darwin "Species that have collaborated and improvised have prevailed." Progressive policy circles talk of a "New New Deal" or amalgamate theories of postindustrial revision to the social contract where social programs are based on a concentric social organization of breadwinner and rooted employees in the US. Modern social organizations rarely fit the traditional nuclear model. Complex social arrangements require revamping old

social contracts to solve problems, re-imagining social contracts in exponential, networked, technology hubs, where shared knowledge, ideas "paid forward," micro-mentors, and lessons-learned benefit all. Progress occurs in "The Mosh Pits" and through the wisdom of crowds. In reconceptualizing innovation, "the government plays the role of an honest broker and resource hub across groups." Examples of a networked society may be similar to Google and Wiki, major players in the world of ideas and policy. Dalton Conley, "Network Nation," *The New York Times* (June 22, 2008), http://www.nytimes.com/2008/06/22/magazine/22wwln-idealab-t.html?fta=y (accessed March 25, 2013).

[49] Michael Schrage, *Serious Play: How the World's Best Companies Simulate to Innovate*, (Cambridge, MA : Harvard Business School, 1999), Kindle edition; Thomas Kelley and Jonathan Littman, *The Ten Faces of Innovation: IDEO's Strategies for Defeating the Devil's Advocate and Driving Creativity Throughout Your Organization* (New York, NY: Crown Publishing Group, 2006), Kindle edition.

[50] Kelley and Littman, *The Ten Faces of Innovation*.

[51] Lessig, *Free Culture*.

[52] The patent system, "designed to advance technology, should not itself be used to thwart the advance of technology." Ravicher, "Daniel Ravicher Speaks on Patent Reform."

[53] *Happy*, documentary directed by Roko Belic, Wadi Rum Films, Inc., 2010, http://pro.imdb.com/title/tt1613092/ (accessed March 29, 2013).

[54] *TED: Ideas Worth Spreading*, http://www.ted.com/ (accessed March 29, 2013).

[55] Kant, *Perpetual Peace and other Essays on Politics, History, and Morals*.

[56] Kant, *Critique of Judgement*.

[57] "There is no good reason why the law should defend the old against the new. The court's responsibility is not to try to control reason, that which is involved in the creative process. The extreme claims of control in the name of property still resonate. Likewise, legislation should not attempt to patent ideas. But rather, the court ought to focus on the free market and jurisprudence. Inherent risk exists in operating in this information free age." Lessig, *Free Culture,* 246; Kant, *Perpetual Peace*.

[58] Lessig, *Free Culture,* 246.

[59] Policymaking must become flexible and resilient to today's changing times. Accept the richness of tradition. Strict patenting drives the creative process underground. The other extreme is that creativity will either never be exercised, or never exercised in the open. We look at other countries to see this reality take place. "The ability to draw freely on the entire creative output of humanity is one of the reasons we live in a time of such fruitful creative ferment." "The larger view is that this society remains fragmented. In the context of American intellectual history, the connotations in the philosophical framework of culture. America has an intellectual tradition of tolerance for creativity. Changing these cultural values will kill opportunities that could be extraordinarily valuable. We should embrace a system that recognizes the truth in both technology and the discipline of law." "We had in our Constitution a commitment to free culture." Policymakers cannot renounce that commitment. Ibid., 246. Lessig, *The Future of Ideas*.

[60] Ibid.; Simultaneous invention covered in a variety of articles: Malcolm Gladwell, "In the Air : Who Says Big Ideas are Rare?" *The New Yorker*, May 12, 2008, http://www.newyorker.com/reporting/2008/05/12/080512fa_fact_gladwell/?currentPage=all (accessed March 29, 2013); Scott Berkun, *The Myths of Invention* (Online Digital : O'Reilly Media, Inc., 2007), http://my.safaribooksonline.com/book/innovation/9780596527051 (accessed March 29, 2013).

[61] Kant, *Perpetual Peace,* 32.

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