

Political Privilege, Legal Right, or Public Policy Tool?

A History of the Patent System

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Abstract: This study considers the history of the patent system from its origins in the guild system of artisans, to royal prerogative of the Crown, to constitutional right to one's property interests in her intellectual creation, and to a carefully balanced utility system of social production. This study argues that the historical development of entitlements created by a formal and informal patent legal regime proves its conscious public policy function to advance governments' objectives. The study concludes that patent systems, whether founded on rights or privileges, function as a public policy tool to fulfill governments' social, economical, and political objectives. The historical development of the patent system may serve as a guide to its future development.

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Chapter I Introduction

In Francis Bacon's time when printing, gunpowder, and the compass changed "the whole face and condition of things throughout the world, in literature, in warfare, and in navigation," he stressed the vital importance of a reward system to sustain new discoveries and modern science because, for Bacon, "if a thing not held in honour does not prosper."¹

"Intellectual property," as we now understand it,² is a modern legal terminology. However, some components of this concept can be traced back far through history almost to the beginning of modern civilization.³ The relatively developed concept of "intellectual property" first emerges around the 12th or 13th centuries⁴ in the Middle Ages Europe when "invention became a total and coherent project."⁵ By the early 14th century, Europe had "arrived at a technological attitude toward problem solving which was to become of

¹ Francis Bacon, *Novum Organum*, trans. by Ellis and Spedding, (London: Routledge, 1905), Book I, Aphorism XCI: "it is enough to check the growth of science that efforts and labours in this field go unrewarded. For it does not rest with the same persons to cultivate sciences and to reward them. The growth of them comes from great wits; the prizes and rewards of them are in the hands of the people, or of great persons, who are but in very few cases even moderately learned. Moreover, this kind of progress is not only unrewarded with prizes and substantial benefits; it has not even the advantage of popular applause. For it is a greater matter than the generality of men can take in, and is apt to be overwhelmed and extinguished by the gales of popular opinions. And it is nothing strange if a thing not held in honor does not prosper." Online: <http://www.constitution.org/bacon/nov_org.htm>.

² Loosely speaking, "intellectual property" refers to private property in the product of the human intellect.

³ For example, in AD 337 Roman emperor Constantine decreed that artisans of certain critical trades were exempted from all civil duties. Chariot makers, engineers and locksmiths were especially favoured. In 483 Roman emperor Zeno decreed that no monopoly could be granted to clothing or food, even if the monopoly was previously required by order of an emperor. For Greek and Roman history of early antecedents of intellectual property rights, see Christopher May & Susan K. Sell, *Intellectual Property Rights: A Critical History*, (Boulder: Lynne Rienner, 2006) at 44-49.

⁴ Pamela O. Long, "Invention, Authorship, 'Intellectual Property,' and the Origin of Patents: Notes toward a Conceptual History" (1991) 32:4 *Technology and Culture* 846, at 848.

⁵ Lynn White, Jr., "Cultural Climates and Technological Advance in the Middle Ages," in Lynn White, Jr., *Medieval Religion and Technology: Collected Essays* (Berkeley: University of California Press, 1978) at 219.

inestimable importance for the human condition.”⁶ In the 15th century in Europe, owning knowledge was not at all a novel idea,⁷ and there was “closer interaction between the technical arts, political power, and knowledge.”⁸ Notwithstanding its long history, it was not until the mid-19th century that a *modern* patent legal system gradually took its shape and started to function as a complex social-legal construct that regulated and institutionalized the interactions between and among technological knowledge, legal rights and commercial exchanges.⁹

As Bently and Sherman state, “many aspects of modern intellectual property law can only be understood through the lens of the past.”¹⁰ The history of patent system supplies no shortage of similar challenges facing our patent system today. Consider, for example, the abuses of patent monopolies in the royal grants era under Queen Elizabeth I, or the first

⁶ Lynn White, Jr., “Cultural Climates and Technological Advance in the Middle Ages,” in Lynn White, Jr., *Medieval Religion and Technology: Collected Essays* (Berkeley: University of California Press, 1978) at 221.

⁷ Christopher May & Susan K. Sell, *Intellectual Property Rights: A Critical History*, (Boulder: Lynne Rienner, 2006) at 43.

⁸ Pamela O. Long, *Openness, Secrecy, Authorship: Technical Arts and the Culture of Knowledge from Antiquity to the Renaissance*, (Baltimore: Johns Hopkins University Press, 2001), at 2.

⁹ In US patent history, the Patent Act of 1836 is generally recognized as the first modern patent law in the US. See Oren Bracha, “The Commodification of Patents 1600-1836: How Patents Became Rights and Why We Should Care” (2005) 38 *Loy. L. A. L. Rev.* 177, at 181. Bracha observes: “...by the mid-nineteenth century the aspect of the institutional model of patents surveyed here acquired its modern form. A new ideology and practice of patents as individual rights and of the market as the only proper measure of the invention’s value took over. The Patent Office became the “examiner” of standardized patentability criteria. Courts assumed the sole role of the enforcers of patent rights and deserted almost completely any pretensions some of them had entertained earlier of engaging in substantive evaluations of the public desirability of specific inventions or patents. The conversion of patent privileges to patent rights was complete.” In the English patent history, “it was not until 1852 that the first major legislation on patents was enacted by parliament and the Patent Office established.” See Christine MacLeod, *Inventing the Industrial Revolution: The English Patent System, 1660-1800*, (New York, Cambridge University Press, 1988), at 1. MacLeod noted that the inventor had to endure a circuitous ten-stage procedure involving several different government offices prior to the modern patent system was established. See *ibid.*, at 40-41.

¹⁰ Brad Sherman & Lionel Bently, *The Making of Modern Intellectual Property Law: The British Experience, 1760-1911*, (Cambridge, UK: Cambridge University Press, 1999) at 1.

patent thicket in American history – the “sewing machine war” of the 1850s.¹¹ Both examples herald important lessons for us to better understand and respond to challenges of our current patent system.

It is with this purpose in mind that this study examines the evolution of national and, to a lesser degree, international patent laws from a historical perspective. Quite intriguingly, many of the issues debated throughout the development of the patent system are as relevant, if not more so, to our current discussion as they were hundreds of years ago. The historical investigation focuses in particular on the justification and purpose of patent system and the nature and scope of protection that best serves the purpose.

Patent, or “letters patent” (*Litterae patentes*), means “open letters” in Latin.¹² As Blackstone explains: “The king’s grants...are contained in charters, or letters patent, that is open letters, *litterae patentes*: so called, because they are not sealed up, but exposed to open view, with the great seal pendant at the bottom; and are usually directed or addressed by the king to all his subjects at large.”¹³

Patent was at first royal grants made by the Crown and with the rise of constitutional government,¹⁴ it transformed to property rights guaranteed by law. The gradual transformation of patent privileges into patent rights has been observed widely by

¹¹ Adam Mossoff, “A Stitch in Time: The Rise and Fall of the Sewing Machine Patent Thicket” (2009) George Mason Law & Economics Research Paper No. 09-19, available online SSRN <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1354849> (last visited August 31, 2009).

¹² Philip W. Grubb, *Patents for Chemicals, Pharmaceuticals and Biotechnology: Fundamentals of Global Law, Practice and Strategy*, 4th ed., (Oxford, UK: Oxford University Press), at 1. A patent is “a document issued by or in the name of the sovereign, addressed to all subjects and with the Great Seal pendant at the bottom of the document so that it can be read without breaking the seal.”

¹³ William Blackstone, *Commentaries on the Laws of England*, vol. 2 (Oxford, UK: Clarendon Press, 1768) at 316-317.

¹⁴ Walton Hamilton & Irene Till, “What is a Patent?” (1948) 13:2 Law & Contemp. Prob. 245, at 245.

scholars. Renee Marlin-Bennett writes: “[t]he granting of the privilege to inventors became so routine that people began to view it as a right.”¹⁵

Examining the institutional development of patent system from its Crown prerogative in England to its constitutional development in the US, Professor Bracha demonstrates how patent rights have been transformed “from case-specific discretionary policy or political grants of special privileges designed to achieve individually defined public purposes, to general standardized legal rights conferring a uniform set of entitlements whenever predefined criteria are fulfilled.”¹⁶ Professor Bracha further compares the vastly different nature of patent privileges and patent rights:

“[T]raditional patent privileges were openly political. They were political decisions of the sovereign, exercising its discretion and making case-specific determinations in the name of the public good. The legitimacy of each patent grant was dependent on the plausibility and legitimacy of the governmental assertion attached to it that, taking all relevant considerations and interests into account, the grant served the public good. Moreover, the ‘public good’ in this context was not limited to a narrow conception of economic or technological innovation. Patent privileges existed in an age with no sharp distinction between ‘economic’ (in the modern sense) and ‘other’ public considerations.”¹⁷

¹⁵ Renee Marlin-Bennett, *Knowledge Power: Intellectual Property, Information, and Privacy* (London: Lynne Rienner, 2004) at 25.

¹⁶ Oren Bracha, “The Commodification of Patents 1600-1836: How Patents Became Rights and Why We Should Care” (2005) 38 *Loy. L. A. L. Rev.* 177, at 181.

¹⁷ Oren Bracha, “The Commodification of Patents 1600-1836: How Patents Became Rights and Why We Should Care” (2005) 38 *Loy. L. A. L. Rev.* 177, at 243 (footnotes omitted).

Patent “rights” connotes the perpetual and inalienable entitlements that are inherit in the dignity of the human being. On the other hand, patent “privileges” underlies the utilitarian purpose of temporary monopolies to bring about social benefits. My central thesis is that patent systems, whether founded on rights or privileges, function as a public policy tool to fulfill governments’ social, economical, and political objectives. I advance three principle arguments in support of the above proposition: (1) The development of patent system has been greatly influenced by the political strategies employed by individual, group, and organizational actors who have conflicting or complementary interests in particular outcomes. (2) The executive branch of the English government fulfilled policy objectives through patent grants, such as increasing foreign trade, introducing new technologies, developing new industries, and maximizing employment. (3) The affirmative constitutional recognition of an individual’s property right in her intellectual creation in the US advanced two policy agendas. First, clearly defined and enforced property right contributed a great deal to the unparalleled success of the US patent system, which encouraged socially beneficial innovation and technological progress. Second, the antebellum patent law contributed a great deal to the transformation of a former colony to a mature democracy.

The structure of this thesis is as follows. Chapter II traces the Venetian origin of patent as a policy tool. Chapter III and IV looks at how English and US patent systems fulfilled their respective policy objectives. Chapter V examines the policy functions of patent systems in other parts of the world. Chapter VI considers implications of historical lessons for today’s patent policy-making. One caveat is that the author has chosen to focus solely on the manner and extent of patent protection under national systems.

Consequently, the international aspects of patent protection under Paris Convention and TRIPS Agreement are intentionally left outside the scope of this research.

Chapter II The Venetian Origin of Patent as a Policy Tool

Contrary to the popular belief among early researchers that the patent system was a peculiar institution originated in England,¹⁸ an ancient patent system was found during the early Renaissance in the Italian republics of Florence and Venice.¹⁹ The patent system was slow to develop in Europe, mainly due to the opposition of the powerful force of the guilds in the economic life of late medieval Europe. Venetian glass-blowers who tried to practice their art outside of their guilds faced death penalty.²⁰ Politically, major guilds in Florence wielded considerable power and formed part of the structure of government.²¹ One could argue that it is precisely because the governing body of Venice – the Venetian Senate – closely controlled the guilds that it was able to pass the first patent law.²²

¹⁸ William Hyde Price, *The English Patents of Monopoly*, (Cambridge, MA: Harvard university Press, 1913) at 7 (maintaining that England was “the birthplace of the [patent] system” and that “a systematic patent policy in England earlier than in any other country”); Harold G. Fox, *Monopolies and Patents: A Study of the History and Future of the Patent Monopoly*, (Toronto: University of Toronto Press, 1947) at 85 (“It was, therefore, not by accident that the patent system had its origin in England nor that the industrial revolution was the inevitable sequel”); William Mathewson Hindmarch, *A Treatise on the Law Relative to Patent Privileges for the Sole use of Inventions* (London, Stevens, Norton & Benning, 1846) at 3.

¹⁹ Maximilian Frumkin, “The Early History of Patents for Inventions” (1947) 26 Transactions of the Newcomen Society 47, at 48. See also Assafa Endeshaw, *Intellectual Property Policy for Non-Industrial Countries*, (Aldershot: Dartmouth, 1996) Chapter 3; Frank D. Prager, “A History of Intellectual Property from 1545 to 1787” (1944) 26 J. Pat. Off. Soc’y 711, at 714-719.

²⁰ George F. Westerman, “Introduction to the Law of Patents,” (1962) 15 Mil. L. Rev. 103, at 104.

²¹ Pamela O. Long, *Technology, Society, and Culture in Late Medieval and Renaissance Europe, 1300-1600*, (Washington, D.C.: Society for the History of Technology and the American Historical Association, 2000), at 53.

²² F. D. Prager makes a convincing argument that since in Venice, “the guilds were powerless to grant or allow monopolies by action of their own,” the first modern patent statute was “apparently enacted in response to ideas prevailing in guild circles, which were influenced by the ideas of industrial and intellectual property.” See F. D. Prager, “The Early Growth and Influence of Intellectual Property” (1952) 34 J. Pat. Off. Soc’y 106, at 131. See more on the relationship of the guilds to political power and authority, Steven A. Epstein, *Wage Labor and Guilds in Medieval Europe*, (Chapel Hill: University of North Carolina Press,

The first true patent was claimed to be granted on February 20, 1416 to Ser Franciscus Petri, a citizen of the Greek island of Rhodes.²³ It was granted because the device – “structures with pestles for fulling fabrics” – “is better than that of the usual devices and different therefrom and his device is superior to the usual fulling devices and better than the same.”²⁴ The focus on rewarding new arts and practices in trades suggests that the first patent system in Venice was “explicitly utilized to promote innovation.”²⁵

Giulio Mandich examines Venetian patents from 1450 to 1550 based mostly on unpublished documents in the State Archives of Venice and highlights certain rules that Venice applied:

“Venice was the first to have continuously and constantly applied certain rules to patents of invention, instead of granting an occasional isolated monopoly. Among these rules were these: that protection always was extended to an inventor, provided his invention was recognized as useful; that the patent term was limited; that the right was transferable *inter vivos* and *mortis causa*; that it was subject to a compulsory license in favor of the state, that a patent was forfeited by failure to use it within certain term and that it failed in cases of prior knowledge within the territory of the Republic.”²⁶

However consistent the Venetian rules to grant patents were, it is fair to say that at this stage patents were granted according to customary rules and long-held practices rather

1991); and Richard Mackenney, *Trademen and Traders: The World of the Guilds in Venice and Europe, c. 1250-c. 1650*, (Totowa, N.J.: Barnes & Noble, 1987).

²³ Giulio Mandich, “Venetian Origins of Inventors’ Rights” (1960) 42 J. Pat. Off. Soc’y. 378, at 379.

²⁴ Giulio Mandich, “Venetian Origins of Inventors’ Rights” (1960) 42 J. Pat. Off. Soc’y 378, at 379, ft 6.

²⁵ Christopher May, “The Venetian Moment: New Technologies, Legal Innovation and the Institutional Origins of Intellectual Property” (2002) 20:2 Prometheus 159, at 159.

²⁶ Giulio Mandich, “Venetian Patent (1450-1550),” (1948) 30 J. Pat. Off. Soc’y 166, at 206-207.

than systematic legal rules. The increasing demands for protecting valuable knowledge by means other than customary rules or guild practice of keeping knowledge secret eventually gathered political momentum. On March 19, 1474 the Venetian Senate passed the earliest codified patent statute (or administrative decree) in the world. The semantic act had a determining effect on patent history. It provided:

“There arise in this city and its neighbourhood, attracted by its excellence and greatness, many men of diverse origins, having most subtle minds and able to devise and discover various ingenious artifices. And, if it should be provided that no-one else might make or take to himself to increase his own honour the works and devices discovered by such men, those same men would exercise their ingenuity, and would discover and make things which would be of no little utility and advantage to our state.

Therefore it is enacted by the authority of this body that whoever makes in this city any new and ingenious device, not previously made within our jurisdiction, is bound to register it at the office of the *Provveditori di Comun* as soon as it has been perfected, so that it will be possible to use and apply it. It will be prohibited to anyone else within any of our territories to make any other device in the form or likeness of that one without the author's consent or licence, for the term of ten years. But if anyone should act thus, the aforesaid author and inventor would be free to cite him before every office of this city, by which office the aforesaid infringer would be prepared to pay one hundred ducats and his artifice would be immediately destroyed. But our Government will be free, at its total pleasure, to

take for its own use and needs any of the said devices or instruments, on this condition, that others than the authors may not employ them.”²⁷

The first patent statute generally promised privileges of ten years to inventors of new arts and machines.²⁸ The state initiative promised the progressive and historic acceptance of “the institution of a right to exclude others.”²⁹ Moreover, patents were examined by customary procedures based on expert hearings and interviews although written specification was not required.³⁰ It is important to note that patents were not officially recognized as inherent natural-law type of property rights in an invention, but as created by the state through administrative grants for the purposes of encouraging innovation and immigration into Venice of innovative men. Therefore, patent rights were not inheritable and ceased to exist upon the death of the creator.³¹ In other words, as Christopher May contends, there is nothing *natural* about patent rights.³²

²⁷ Archivio di Stato, Venezia: *Senato Terra*, Reg. 7, c. 32, as quoted in Jeremy Phillips, “The English Patent as a Reward for Invention: The Importation of an Idea” (1982) 3:1 *Journal of Legal History* 71, at 75–76. There are at least four other different versions of translation appeared in literature. However, minor differences in wording do not discount the establishment of the meaning of the act. For other versions of translation, see Maximilian Frumkin, “The Early History of Patents for Inventions” (1947) 26 *Transactions of the Newcomen Society* 47, at 49; Stephen P. Ladas, *Patents, Trademarks and Related Rights. National and International Protection*, (Cambridge, MA: Harvard University Press, 1975); Giulio Mandich, “Venetian Patents (1450-1550)” (1948) 30 *J. Pat. Off. Soc’y* 166; Vishwas Devaiah I., *A History of Patent Law*, online: Alternative Law Forum <<http://www.altlawforum.org/PUBLICATIONS/document.2004-12-18.0853561257>> (last visited August 31, 2009).

²⁸ Kaufer contends that the underlying purpose of the 1474 patent statute was to attract foreign engineers with the incentive of a 10-year monopoly right to their “works and devices.” See Erich Kaufer, *The Economics of the Patent System*, (Chur, Switzerland: Harwood Academic Publishers, 1989), at 5-6.

²⁹ Giulio Mandich, “Venetian Origins of Inventors’ Rights” (1960) 42 *J. Pat. Off. Soc’y*. 378, at 381-382.

³⁰ Frank D. Prager, “A History of Intellectual Property from 1545 to 1787” (1944) 26 *J. Pat. Off. Soc’y* 711, at 716.

³¹ Frank D. Prager, “A History of Intellectual Property from 1545 to 1787” (1944) 26 *J. Pat. Off. Soc’y* 711, at 717.

³² Christopher May, “The Hypocrisy of Forgetfulness: The Contemporary Significance of Early Innovations in Intellectual Property” (2007) 14:1 *Review of International Political Economy* 1, at 1.

A closer reading of the Venetian statute reveals “[t]he heavy emphasis on the promotion of a *social interest* as the rationale of the patent grant.”³³ Frumkin³⁴ and Mandich³⁵ also point out that the *social interest* is the major rationale behind the Venetian patent statute. Thomas M. Meshbesher posits that the preamble of the Venetian patent statute contains “a *governmental policy*: encouraging invention by making it unprofitable for infringers to copy the invention and take the inventor’s honor away.”³⁶ (emphasis original) I will demonstrate how the social interest and governmental policy are served in the following four aspects.

First, the Venetian patent statute “provided for patents as a matter of right and general principle, not merely of royal favor.”³⁷ The emphasis on individual human rights and the impartial treatment of human ingenuity between different social groups were consistent with, and contributed positively to shape the future of, the Enlightenment philosophy. In this sense, the Venetian patent statute was more modern than the English *Statute of Monopolies* 150 years later.³⁸

Second, the criterion of “novelty” was a significant element of the patent examination. The inventors’ or importers’ monopolies were only justifiable because they were the first, in the territory of Venice, to introduce some “ingenuous device.” Therefore, patent was

³³ Ulf Anderfelt, *International Patent-Legislation and Developing Countries*, (The Hague: Martinus Nijhoff, 1971), at 4-5.

³⁴ Maximilian Frumkin, “The Early History of Patents for Inventions” (1947) 26 Transactions of the Newcomen Society 47.

³⁵ Giulio Mandich, “Venetian Patents (1450-1550)” (1948) 30 J.P.O.S. 166.

³⁶ Thomas M. Meshbesher, “The Role of History in Comparative Patent Law” (1996) 78 J. Pat. & Trademark Off. Soc’y 594 at 605.

³⁷ Frank D. Prager, “A History of Intellectual Property from 1545 to 1787” (1944) 26 J. Pat. Off. Soc’y 711, at 716.

³⁸ Frank D. Prager, “A History of Intellectual Property from 1545 to 1787” (1944) 26 J. Pat. Off. Soc’y 711, at 716.

understood as “the compensation for the advantages derived by the Commonwealth.”³⁹

As an example, Girolamo Magagnati’s claim for a new invention “relating to glass and mirrors,” was denied protection due to lack of novelty.⁴⁰

Third, the invention had to be useful and there existed an obligation to exploit the patent, which is the origin of the local-working requirements.⁴¹ The invention had to be worked within a certain period, or else it could be forfeited. The rationale was that it was only through public utilization and active exploitation of the invention that the overall society benefited.⁴²

Fourth, the patent privilege was susceptible to compulsory government use. Recognizing a larger societal interest at stake, it was within the power and discretion of the government to use any patented invention. Venice government recognized, on the one hand, inventor’s temporary rights to exclude third parties from practicing her invention, and on the other hand, public interest to access patented knowledge in critical circumstances decided by the government.⁴³

As a case study of Galilei Gallileo’s 1594 patent on a device for raising water and irrigating land might be helpful to understand how the Venetian patent statute worked.⁴⁴

A close reading of the papers relating to the grant reveals comparable features of the

³⁹ G. Mandich, “Venetian Patents (1450-1550),” (1948) 30 J. Pat. Off. Soc’y 172, at 195.

⁴⁰ Frank D. Prager, “A History of Intellectual Property from 1545 to 1787” (1944) 26 J. Pat. Off. Soc’y 711, at 716.

⁴¹ Bankole Sodipo, *Piracy and Counterfeiting: GATT, TRIPS and Developing Countries*, (London; Boston: Kluwer Law International, 1997).

⁴² Peter L. Kolker, *Should Importation be Considered as Working?: A Study of Article 27 of the GATT TRIPS Agreement* (London, UK: Intellectual Property Institute, 1996).

⁴³ C. H. Greenstreet, “History of Patent Systems”, in Felix Liebesny, ed., *Mainly on Patents: The Use of Industrial Property and its Literature*, (Hamden, Conn.: Archon Books, 1972); M. Frumkin, “The Origin of Patents” (1945) 27 J. Pat. Off. Soc’y 143.

⁴⁴ P.J. Federico, “Galileo’s Patent” (1926) 8 J. Pat. Off. Soc’y 576, at 579-580; see also, Robert Signore, “Galileo and the Venetian Law and Patents” (2009) 91:3 J. Pat. & Trademark Off. Soc’y 291.

Venetian patent system with our modern patent system. For example, Galileo justified why he should be granted protection in his petition to the Doge in December 1593: “I desire at present to reduce it (the invention) to practice. But, it not being fit that this invention, which is my own, discovered by me with great labor and much expense, be made the common property of everybody...”⁴⁵ Furthermore, in examining and considering the petition, novelty and utility of the invention were considered, but no description of the invention was necessary. It should also be noted that infringement of the patent was a direct violation of a royal decree and hence the prosecution of infringers was by the government itself. Compared with the dominance of private cause of action in IP dispute that we are familiar today, public prosecution may offer greater protection to the inventor and deterrence to the infringer.

As Frumkin suggests, the patent institution *followed* (rather than *preceded*) the economic and cultural development and later lost its importance when these activities became less intensive.⁴⁶ The supremacy of Venice’s social and economical status in the world at the time gave birth to the first patent law. If Venice had continued its prosperity, “it could be fairly assumed that a law fully recognizing intellectual property in inventions and other creations would have been enacted, and taken over by other countries.”⁴⁷

⁴⁵ P.J. Federico, “Galileo’s Patent” (1926) 8 J. Pat. Off. Soc’y 576, at 577.

⁴⁶ M. Frumkin, “Les anciens brevets d’invention: les pays du continent europeen au XVIIIe siècle,” *Bijblad bij De Industriële Eigendom*, 23: 46-49, April, 1955, as cited in Ulf Anderfelt, *International Patent-Legislation and Developing Countries*, (The Hague: Martinus Nijhoff, 1971), footnote 12, at 6.

⁴⁷ Frank D. Prager, “A History of Intellectual Property from 1545 to 1787” (1944) 26 J. Pat. Off. Soc’y 711, at 719-720.

With the demise of Venice, its artisans were absorbed in other Italian city-states and gradually in France, Germany, Holland, Belgium, and England.⁴⁸ They brought with them technical know-how as well as knowledge of patent law and practice. The Venetian influence of the early European patent statutes is clear in a number of aspects. First, the early patentees under these newly promulgated patent statutes were, with few exceptions, Venetians.⁴⁹ Second, the first patents were granted to glass making, which was the expertise of the Venetians.⁵⁰ Third, there were noticeable similarities between these patent statutes and the Statute of Venice: the ten-year patent term they adopted was one such example.⁵¹

In sum, the Venetian patent statute is a legal invention in itself that represents an important milestone in patent law experiment. As Graham Dutfield observes, the self-interest of states has always determined and shaped patent law.⁵² It is fair to conclude that the first Venetian patent law largely reflects its national priorities and policy preferences.

⁴⁸ Frank D. Prager, “A History of Intellectual Property from 1545 to 1787” (1944) 26 J. Pat. Off. Soc’y 711, at 720. Prager states: “In most places, the patent system was adopted almost exactly as developed in Venice....All of the basic patent rules developed in Venice were preserved in the subsequent systems, down to and including our present American system.” See also, Ulf Anderfelt, *International Patent Legislation and Developing Countries*, (The Hague: Martinus Nijhoff, 1971) at 6; Fredrik Neumeyer, “A Contribution to the History of Modern Patent Legislation in the United States and in France” (1957) 6 Scandinavian Economic History Review 126 at 140.

⁴⁹ See Ulf Anderfelt, *International Patent-Legislation and Developing Countries*, (The Hague: Martinus Nijhoff, 1971), at 6 states that: “...in all countries which adopted some sort of patent system during the 15th and 16th century, the first few patentees were Italians.”

⁵⁰ See Christine MacLeod, *Inventing the Industrial Revolution: The English Patent System 1660-1800*, (Cambridge, UK: Cambridge University Press, 1988), at 11.

⁵¹ See Ulf Anderfelt, *International Patent-Legislation and Developing Countries*, (The Hague: Martinus Nijhoff, 1971), at 6 states that: “...the time limit as first introduced was generally the Venetian ten-year term.”

⁵² Graham Dutfield, *Intellectual Property Rights and the Life Science Industries: A 20th Century History*, (Aldershot: Ashgate Dartmouth, 2003), at 51.

Chapter III Patent as a Policy Tool in England

3.1 Patent Grants under Crown Prerogative

Although the first patent statute was enacted in Venice, common law patent system originated in England.⁵³ In the middle ages, English manufacturing arts were behind those in continental European countries. In order to encourage foreign craftsmen to come to England and bring with them new manufactures, early English Kings exercised the prerogative of granting special privileges.⁵⁴ Between 1320's and 1450's, both importation of knowledge of new industries into the realm and invention within the realm were encouraged and trade guilds, corporations and individuals were granted various forms of privileges, such as "financial incentives, favorable tax treatment, sovereign protection, and franchises (i.e., the right to practice the trade or industry)."⁵⁵

In 1324, Edward II granted letters of protection to skilled German miners to entice them to bring new technologies to England; teach their skills to native craftsmen; and help establish new industries.⁵⁶ In 1331, John Kempe (or Kemp), of Flanders and his company, Flemish weavers, received a royal grant for introducing cloth making into

⁵³ Simon Thorley, *et al.*, *Terrell on the Law of Patents*, 16th ed., (London: UK, Sweet & Maxwell, 2006) at 2.

⁵⁴ Thomas A. Hill, "Origin and Development of Letters Patent for Invention," (1924) 6 J. Pat. Off. Soc'y 405, at 406.

⁵⁵ Edward C. Walterscheid, "The Early Evolution of the United States Patent Law: Antecedents (Part 1)" (1994) 76 J. Pat. & Trademark Off. Soc'y 697, at 707.

⁵⁶ Ramon A. Klitzke, "Historical Background of the English Patent Law" (1959) 41 J. Pat. Off. Soc'y 615, at 627. Klitzke notes that it was "merely an invitation to a foreigner to come to England", and not a "monopoly".

England.⁵⁷ This was claimed to be the first time that a monopoly right was issued by the Crown to a foreigner.⁵⁸

Blackstone writes:

“The crown’s prerogative to issue letters patent was a central tool in bestowing privileges upon individuals in the furtherance of *royal policies*. When the crown thus wished to buttress the realm’s lagging industrial development at the end of the Middle Ages, the issuance of letters patent was central to enticing tradesmen and industrialists to come to England.”⁵⁹ (emphasis added)

“Royal policies” that Blackstone referred to included utilizing patent to achieve policy objectives, such as increasing foreign trade, introducing new technologies, developing new industries, and maximizing employment.⁶⁰ These policies found support in classical economic theory at the time. Adam Smith and his fellow English classical economists believed that monopoly was “necessarily hurtful to society.”⁶¹ As an exception to this rule, however, a temporary patent monopoly was a good way of rewarding the risk and expense of the inventor.⁶² Jeremy Bentham argued that rewarding inventors with

⁵⁷ Thomas A. Hill, “Origin and Development of Letters Patent for Invention,” (1924) 6 J. Pat. Off. Soc’y 405, at 406.

⁵⁸ P. J. Federico, “Origin and Early History of Patents” (1929) 11 J. Pat. Off. Soc’y 292, at 293; Christopher May & Susan K. Sell, *Intellectual Property Rights: A Critical History*, (Boulder: Lynne Rienner, 2006) at 52. Prager explains further: “the grant of an individual privilege to the leader was sometimes followed by a more general decree or law, promising aid or subvention on a broader and more continuous scale.” See F. D. Prager, “The Early Growth and Influence of Intellectual Property” (1952) 34 J. Pat. Off. Soc’y 106, at 119.

⁵⁹ See William Blackstone, *Commentaries on the Laws of England*, vol. 2 (Oxford, UK: Clarendon Press, 1768).

⁶⁰ Chris Dent, “Patent Policy in Early Modern England: Jobs, Trade and Regulation” (2006) 10 Legal History 71.

⁶¹ Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, (1776) book IV, chapter VII, part III.

⁶² Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, (1776) book V, chapter I, part III.

“exclusive privileges” was “best proportioned, most natural, and least burdensome”; “it produces an infinite effect and costs nothing.”⁶³ The “protection against imitators” is necessary because “he who has no hope that he shall reap will not take the trouble to sow.”⁶⁴

Early industrial grants were random and not systematic.⁶⁵ Legal scholars and historians generally agree that the patent monopoly *system* in England began under Queen Elizabeth I during her reign between 1558 and 1603.⁶⁶ In 1559, Jacobus Acontio of Italy petitioned Queen Elizabeth I for the protection of his inventions out of fear that his work might be copied by others without royal protection. Queen Elizabeth I granted Acontio’s request and instituted a system of royal privileges. The system gave a “monopoly of limited duration that would compensate the new technology’s importer for the cost of transplanting the technology, learning to use it, and making it profitable.”⁶⁷ Jeremy Phillips establishes a convincing case that Jacobus Acontius, “through his own

⁶³ Jeremy Bentham, A Manual of Political Economy, in John Bowring, ed., *The Works of Jeremy Bentham*, vol, III, at 71, cited in Fritz Machlup, *An Economic Review of the Patent System*, Study of the Subcommittee on Patents, Trademarks and Copyrights of the Committee on the Judiciary, United States Senate, Eighty-fifth Congress, Second Session, (Washington DC, US Government Printing Office, 1958).

⁶⁴ Jeremy Bentham, A Manual of Political Economy, in John Bowring, ed., *The Works of Jeremy Bentham*, vol, III, at 71, cited in Fritz Machlup, *An Economic Review of the Patent System*, Study of the Subcommittee on Patents, Trademarks and Copyrights of the Committee on the Judiciary, United States Senate, Eighty-fifth Congress, Second Session, (Washington DC, US Government Printing Office, 1958).

⁶⁵ Davies argues that English patent *system* began “in the second year of Elizabeth’s reign,” which was 1559. See D Seaborne Davies, “Further Light on the Case of Monopolies” (1932) 48 L. Q. Rev. 394, at 396.

⁶⁶ Simon Thorley, *et al.*, *Terrell on the Law of Patents*, 16th ed. (London: UK, Sweet & Maxwell, 2006) at 2. (“The origin of the present patent system is to be found in the ‘Monopoly system’ inaugurated by Cecil in the reign of Queen Elizabeth”) Here, “Cecil” refers to Sir William Cecil, who was instrumental in shaping the English patent system during Elizabeth’s reign. See also John Hamilton Baker, *An Introduction to English Legal History*, 3rd ed., (London: Butterworths, 1990) at 511-512; Maximilian Frumkin, “Early History of Patents for Invention” (1947) 26 Transactions of the Newcomen Society, published by the Newcomen Society for the study of the history of engineering and technology, 47-56 at 53.

⁶⁷ Renee Marlin-Bennett, *Knowledge Power: Intellectual Property, Information, and Privacy*, (London: Lynne Rienner, 2004) at 25.

experiences as an inventor within the extended Venetian republic,” brought to England this notion that the inventor should receive certain benefits and rights for her invention.⁶⁸

The first declaration of justification for granting a patent monopoly as a reward to inventors was found in Jacobus Acontius’s patent: “...it is right that inventors should be rewarded and protected against others making profit out of their discoveries”.⁶⁹ This justification is significantly different from previous monopoly grants given to trading or mineral exploitation in that it is rooted in moral principle.

In order to induce the introduction and importation of new manufacture into England, the exercise of royal monopolies was contingent on the fulfillment of certain conditions. First, the subject matter in the petition for patent should be sufficiently novel since the focus was the encouragement of establishing new industries in England. Therefore, slight improvements in an existing industry did not meet this requirement. For example, it was decided in Exchequer in 1572 that “patent should not be granted for an improvement in an existing manufacture.”⁷⁰ Second, the patentee was obliged to teach the details of his

⁶⁸ Jeremy Phillips, “The English Patent as a Reward for Invention: The Importation of an Idea” (1982) 3:1 *Journal of Legal History* 71 at 77.

⁶⁹ Calendar of Patent Rolls, 7 Eliz. I, 331. The petition was tentatively dated December 1559 and granted on September 7, 1565. The petition reads:

“Nothing is more honest than that those who by searching have found out things useful to the public should have some fruit of their rights and labours, as meanwhile they abandon all other modes of gain, are at much expense in experiments, and often sustain much loss, as has happened to me. I have discovered most useful things, new kinds of wheel machines, and of furnaces for dyers and brewers, which when known will be used without my consent, except there be a penalty, and I, poor with expenses and labour, shall have no returns. Therefore I beg a prohibition against using any wheel machines, either for grinding or bruising or any furnaces like mine, without my consent.”

Historians such as William Hyde Price, Sir William Holdsworth, and Lynn White Jr. generally believe that Acontius is the first to state the rationale of our modern patent system. See William Hyde Price, *The English Patents of Monopoly*, (Cambridge, MA: Harvard university Press, 1906) at 7; Sir William S. Holdsworth, *A History of English Law*, 3rd ed., vol. 4 (London: Methuen, 1945) at 345.

⁷⁰ Case of *Bircot*, cited in Edward C. Walterscheid, “The Early Evolution of the United States Patent Law: Antecedents (Part 2),” (1994) 76 J. Pat. Off. Soc’y 849, at 859.

inventions to indigenous tradesmen within the realm.⁷¹ The rationale behind this requirement is the belief that the most important component of a new English industry was sufficient number of capable English workers.

In addition to inducing the introduction and importation of new manufacture into England, another important function of patent grants was to “provide employment for those who were not members of the guilds.”⁷² Employment policy gained critical importance after the land enclosure movement which drove many tenant farmers out of work. The employment prospects of farmers and works were improved through the following ways by patent grants. First, the patentee was obliged to work his inventions in the country for a specific time, which was initially set at 14 years.⁷³ The local-working requirement created employment opportunities either through hiring local workers in the newly established industry or through training apprentices.⁷⁴ The possible implication of patent grants on local employment was an important concern and therefore it was not uncommon to stipulate requirement for employing English workers in the patent grant.

⁷¹ It should be noted that in the early 18th century, the condition for disclosure changed from the working of the invention to describing it by a written specification.

⁷² Thomas A. Hill, “Origin and Development of Letters Patent for Invention,” (1924) 6 J. Pat. Off. Soc’y 405, at 407.

⁷³ It has been suggested that the period of grant for patents was set according to the length of apprenticeships, i.e., 14 year period equated to the training of two apprentices. See Adam Mossoff, “Rethinking the Development of Patents: An Intellectual History, 1550-1800” (2001) 52 Hastings L. J. 1255, at 1261.

⁷⁴ Chris Dent, “Patent Policy in Early Modern England: Jobs, Trade and Regulation” (2006) 10 Legal History 71.

3.2 Patent Abuses and Opposition

As discussed above, monopoly patents were initially granted to encourage the introduction of new industries into England.⁷⁵ Gradually the patent monopolies became abusive under the monarchs of Elizabeth I and James I, which leads one prominent legal historian to state: “of the magnitude of the evils caused by these inconsiderate grants to all classes of the community there can be no question”.⁷⁶ Drahos neatly captures the money-making attitude of English sovereigns and the corruption of the monopolies granting system: “the grant of monopoly powers became a convenient source of revenue.”⁷⁷ In the latter part of the reign of Elizabeth I and the early Stuarts, the reward of royal favours became so prevalent that “a great number of commodities including many of the necessities of life were in the hands of the monopolists who were very oppressive in the enforcement of their rights.”⁷⁸ The Crown needed support from these influential monopolists and shared directly their monopoly profits.⁷⁹ The Crown further benefited “by being shielded from the public opprobrium of those affected adversely by the patent, since their wrath tended to fall on the actual patent-holder and not on the Crown.”⁸⁰

In 1601, a declaratory bill, entitled “An Act for the Explanation of the Common Law in Certain Cases of Letters Patent,” was introduced into Parliament for the purpose of

⁷⁵ There were quite a number of successful examples of the monopoly system. The Stationers’ Co. of London, which was a trade association of printers and booksellers established by Queen Mary I in 1557, held a royal patent on the printing of books in England.

⁷⁶ William S. Holdsworth, *A History of English Law*, 3rd ed., vol. 4 (London: Methuen, 1945) at 347.

⁷⁷ Peter Drahos, *A Philosophy of Intellectual Property* (Aldershot; Brookfield, USA: Dartmouth, 1996) at 29.

⁷⁸ Thomas A. Hill, “Origin and Development of Letters Patent for Invention,” (1924) 6 J. Pat. Off. Soc’y 405, at 407.

⁷⁹ Patricia Loughlan, “Patents: Breaking into the Loop” (1998) 20 Sydney L. Rev. 553 at 557.

⁸⁰ Patricia Loughlan, “Patents: Breaking into the Loop” (1998) 20 Sydney L. Rev. 553 at 557.

abolishing patent monopolies.⁸¹ When the prerogative of the Crown was threatened to be taken away by the Parliament, Queen Elizabeth defended her prerogative before Parliament on November 30, 1601.⁸² The ensuing wrangle of patent monopolies has been described as, “one of the most significant in British constitutional history,”⁸³ and eventually led the Queen to issue “a proclamation revoking the most objectionable patents.”⁸⁴ Elizabeth reached a compromise with Parliament, according to which “the bill would be withdrawn from Parliament in exchange for an undertaking on her part to thenceforth allow the validity of patents to be tried in the common law courts.”⁸⁵ The submission of Queen’s patent grants to the scrutiny of the English court system marked the beginning of the transformation of English *patent custom* into English *patent law*.⁸⁶

On November 20, 1601, Francis Bacon wrote the following paragraph explaining what was generally acknowledged to be the purpose of the patent system in England at that time:

“If any man out of his own wit, industry or endeavor, finds out anything beneficial for the Commonwealth, or bring any new invention which every

⁸¹ E. Burke Inlow, *The Patent Grant*, (Baltimore, Maryland: John Hopkins Press, 1950) at 22.

⁸² Queen Elizabeth said: “Since I was Queen, yet did I never put my pen to any grant but upon pretext and semblance made to me that it was for the good and avail of my subjects generally, though a private profit to some of my ancient servants who have deserved well; but that my grant shall be made grievances unto my people, and oppressions be privileged under color of our patents, our princely dignity will not suffer it...And if my princely bounty has been abused, and my grants turned to hurt by my people, contrary to my will and meaning, or if any authority under me has been neglected or converted what I have committed unto them, I hope God will not lay their culps to my charge.” Quoted in George Ramsey, “The Historical Background of Patents” (1936) 18 J. Pat. Off. Soc’y 6 at 8.

⁸³ E. Burke Inlow, *The Patent Grant*, (Baltimore, Maryland: John Hopkins Press, 1950) at 22.

⁸⁴ C. H. Greenstreet, “History of Patent Systems”, in Felix Liebesny, ed., *Mainly on Patents: The Use of Industrial Property and its Literature*, (Hamden, Conn.: Archon Books, 1972), at 6.

⁸⁵ Patricia Loughlan, “Patents: Breaking into the Loop” (1998) 20 Sydney L. Rev. 553 at 558.

⁸⁶ Walterscheid maintains that the level or degree of involvement of legal substance is what separates “patent law” and “patent custom” or “patent practice.” See Edward C. Walterscheid, “The Early Evolution of the United States Patent Law: Antecedents (Part 2)”, (1994) 76 J. Pat. & Trademark Off. Soc’y 849, at 849-869.

subject of this Realm may use; yet in regard of his pains, travail, and charges therein, Here Majesty is pleased to grant him a privilege to use the same only by himself, or his deputies, for a certain time...”⁸⁷

This formed the argument later in the landmark Case of Monopolies, or *Darcy v. Allein*,⁸⁸ after which English common law of patents began to develop. It was held in this case that Darcy’s patent for the monopoly of importing, manufacturing and selling playing cards was invalid as “being a monopoly illegal at common law, and also as being a license for importation of playing cards contrary to certain statutes.”⁸⁹ This case effectively placed limitations on the sovereign prerogative of granting patent monopoly privileges,⁹⁰ and signaled the beginning of the end of the prerogative monopoly system.

Allein’s counsel argued that patent monopoly was acceptable:

“...when any man by his own charge and industry, or by his own wit or invention doth bring in new trade into the realm, or any engine tending to the furtherance of a trade that was never used before; and that for the good of the realm, that in such cases the King may grant to him a monopoly patent for a reasonable time, until the subjects may learn the same, in consideration of the good that he doth bring by his invention to the Commonwealth, otherwise not.”⁹¹

⁸⁷ Quoted in Emory L. Groff, “Misinterpretation of Statute of Monopolies” (1958) 40 J. Pat. Off. Soc’y 367, at 368.

⁸⁸ *Darcy v Allein* (1602), 11 Co. Rep. 84b, 77 E.R. 1260. Also reported as *Darcy v. Allen* (1602) Noy 173, 74 E.R., 1131; *Darcy v. Allen* (1602) Moore K.B. 671, 72 E.R. 830. See the composite report in J.W. Gordon, K.C., *Monopolies by Patents and the Statutable Remedies Available to the Public*, (London: Stevens and Sons, 1897).

⁸⁹ Simon Thorley, *et al.*, *Terrell on the Law of Patents*, 16th ed., (London: UK, Sweet & Maxwell, 2006), at 3.

⁹⁰ Peter Drahos, *A Philosophy of Intellectual Property Rights* (Aldershot, UK: Dartmouth, 1996), at 29-30.

⁹¹ 74 E.R. at 1139.

Two of the four reasons that Coke's report provided to support the invalidity of the patent were related to employment policy considerations.⁹² First,

“All trades, as well mechanical as others, which prevent idleness (the bane of the commonwealth) and exercise men and youth in labour, for the maintenance of themselves and their families, and for the increase of their substance, to serve the Queen when occasion shall require, are profitable for the commonwealth, and therefore the grant to the plaintiff to have the sole making of them is against the common law.”⁹³

Second, the “sole trade of any mechanical artifice, or any other monopoly, is not only a damage and prejudice to those who exercise the same trade, but also to all other subjects, for the end of all these monopolies is for the private gain of the patentees.”⁹⁴

The 1614 decision of the *Clothworkers of Ipswich Case*⁹⁵ was recognized as the first “judicial pronouncement on the legality of patents for inventions.”⁹⁶ The following statement from the case shows a foundation and reasoning of the patent system:

“if a man hath brought in a new invention and a new trade within the kingdom in peril of his life and consumption of his estate or stock, etc, or if a man hath made a new discovery of anything, in such as cases the King of his grace and favour in recompense of his costs and travail may grant by charter unto him that he shall only use such a trade or trafique for a certain time, because at first people of the

⁹² Chris Dent, “Patent Policy in Early Modern England: Jobs, Trade and Regulation” (2006) 10 *Legal History* 71.

⁹³ (1602) 11 Co Rep 84b, 86a; 77 ER 1260, 1262.

⁹⁴ (1602) 11 Co Rep 84b, 86b; 77 ER 1260, 1263.

⁹⁵ *The Clothworkers of Ipswich Case*, (1615) Godbolt, 252, 78 E.R. 147.

⁹⁶ Simon Thorley, *et al.*, *Terrell on the Law of Patents*, 16th ed., (London: Sweet & Maxwell, 2006) at 2-3.

kingdom are ignorant, and have not the knowledge and skill to use it. But when the patent is expired the King cannot make a new grant thereof”⁹⁷

Although abuses of the royal prerogative to grant patents of monopoly have been attacked strongly, Dent argues that the patent granting practices in the late 16th and early 17th centuries were “balanced by the sound reasons for, and the beneficial outcomes to, the monopolies handed out by the Crown”.⁹⁸ As well, Harold G. Fox goes even further to justify some of the monopolies that were most notorious for the corruption, exploitation, and oppression they engendered. He defends most of them by pointing to the good intentions of the Crown in granting the patents.⁹⁹ Take the salt monopoly for example, Fox argues that it was in line with “an entirely proper economic policy” since “there could be no question of the desirability of introducing the manufacture into England, rather than depending for its continued supply upon foreigners.”¹⁰⁰ Queen Elizabeth’s “desire to make the country . . . self-sufficient” is to Fox a highly praiseworthy motive for a monopoly grant: “[t]he maintenance of a proper supply of necessary commodities can hardly be condemned as a motive force for the grant of monopoly patents, and monopoly is usually the best way of ensuring adequate supply, as any manufacturer will readily testify”¹⁰¹

⁹⁷ Simon Thorley, *et al.*, *Terrell on the Law of Patents*, 16th ed., (London: Sweet & Maxwell, 2006) at 2-3, citing the report in J.W. Gordon, K.C., *Monopolies by Patents and the Statutable Remedies Available to the Public*, (London: Stevens and Sons, 1897) at 252.

⁹⁸ Chris Dent, “Patent Policy in Early Modern England: Jobs, Trade and Regulation” (2006) 10 *Legal History* 71, at 72.

⁹⁹ Harold G. Fox, *Monopolies and Patents: A Study of the History and Future of the Patent Monopoly*, (Toronto: University of Toronto Press, 1947) at 163-4.

¹⁰⁰ Harold G. Fox, *Monopolies and Patents: A Study of the History and Future of the Patent Monopoly*, (Toronto: University of Toronto Press, 1947) at 168-9.

¹⁰¹ Harold G. Fox, *Monopolies and Patents: A Study of the History and Future of the Patent Monopoly*, (Toronto: University of Toronto Press, 1947) at 171.

3.3 The *Statute of Monopolies* 1624

A major reason behind the enactment of the 1624 *Statute of Monopolies* was that patent grant failed its original policy objective of encouraging invention and promoting the “public good.”¹⁰² The 1624 *Statute of Monopolies* is considered the foundation of English patent law,¹⁰³ and is regarded as a landmark in the development of the modern patent system. It marked the birth of the contemporary regime of patent law. It abolished all monopolies prolifically granted prior to that date, and prohibited the grant of monopolies except for “the true and first inventor or inventors” of “any manner of new manufactures within this realm.”

It should be noted that “the true and first inventor” shall be interpreted as meaning the first introducer of a new technology into the realm, not the first inventor in worldwide terms. In *Edgeberry v. Stephens*, per Holt C.J. and Pollexfen:

“if the invention be new in England, a patent may be granted, though the thing was practised beyond the sea before; for the statute speaks of new manufactures within this realm; so that if they be new here, it is within the statute; for the Act intended to encourage new devices useful to the kingdom, and whether learned by travel or by study, it is the same thing.”¹⁰⁴

¹⁰² William W. Fisher III, “The Growth of Intellectual Property: A History of the Ownership of Ideas in the United States”, *Eigentum im internationalen Vergleich* (Vandenhoeck & Ruprecht, 1999) 265-91, reprinted in David Vaver, ed., *Intellectual Property Rights: Critical Concepts in Law*, vol.1 (London, UK: Routledge, 2006) at 72-94.

¹⁰³ Sir William Searle Holdsworth, *A History of English Law*, vol. 4 (London: Methuen, 1937) at 349-53.

¹⁰⁴ *Edgeberry v. Stephens*, 2 Salk. 447, 1 Abbott’s P.C. 8, 91 Eng. Rep. 387 (K.B. 1691). See also discussion of this case in Edward C. Walterscheid, “Priority of Invention: How the United States Came to Have a ‘First-to-Invent’ Patent System”, (1995) 23 *AIPLA Q.J.* 263, at 266; John N. Adams, “History of the Patent System” in Toshiko Takenaka, ed., *Patent Law and Theory: A Handbook of Contemporary*

Section 6 of the *Statute of Monopolies*, entitled “Proviso for future Patents for 14 Years or less, for new Inventions,” laid down the provisions of modern patent law and is as stated as follows:

“Provided also that any declaration before mentioned shall not extend to any letters patent and grant of privilege for the term of fourteen years or under, hereafter to be made, of the sole working or making of any manner of new manufactures within this realm, to the true and first inventor and inventors of such manufactures, which others at the time of making such letters patent and grants shall not use, so as also they not be contrary to the law or mischievous to the state, by raising prices of commodities at home, or hurt of trade or generally inconvenient.”¹⁰⁵

The terms of section 6 of the *Statute of Monopolies* demonstrated clearly that “the statute was an instrument of economic policy; rather than being motivated by the desire to do justice to the inventor, it was meant to encourage industry, employment and growth. The patentee’s consideration for the grant was that he would put the invention to use.”¹⁰⁶ The basic objectives of the statute were to encourage industrial activity, employment and economic growth, rather than to reward the “true and first inventor” for his effort. The Statute provided that patents shall not being contrary to law or “mischievous to the state”. The Statute also stated that monopolies are contrary to the “ancient and fundamental laws” of the realm and exempted patent monopolies by virtue of a privilege on the basis

Research (Cheltenham, UK: Edward Elgar, 2009) ft 11 at 103; Thomas M. Meshbesh, “The Role of History in Comparative Patent Law” (1996) 78 J. Pat. & Trademark Off. Soc’y 594, fn 42 at 604.

¹⁰⁵ Cited in Sir William Jarratt, “English Patent System” (1944) 26 J. Pat. Off. Soc’y 761, at 761.

¹⁰⁶ John N. Adams, “History of the Patent System” in Toshiko Takenaka, ed., *Patent Law and Theory: A Handbook of Contemporary Research* (Cheltenham, UK: Edward Elgar, 2009) ft 11 at 103.

of their contribution to the public good. This “instrumentalist approach” makes Drahos view the Statute as “a straight piece of economic policy”.¹⁰⁷ MacLeod also contends that the primary purpose of the 1624 *English Statute of Monopolies* was to “prohibit monopolies rather than to promote invention, and in passing the law the government hoped to encourage continental craftsmen to settle in the country.”¹⁰⁸

In sum, the monopolies of Elizabeth were “a set of devices ... for the solution of fiscal and administrative Problems.”¹⁰⁹ Important policy goals had been advanced to a certain degree by patent grants, such as increasing the level of employment, establishing new industries, and improving the balance of foreign trade.¹¹⁰

Chapter IV Patent as a Policy Tool in Building US Democracy

4.1 The Origin of the IP Clause of the US Constitution

The trend of providing inventors legal monopolies over their inventions gradually spread from Europe to the Western hemisphere with immigrants. In the US, the first patent was granted by the Massachusetts Colony in 1641 to Samuel Winslow for method of making salt.¹¹¹ It is important to note that before the enactment of the first patent law and even before the Constitutional Convention in 1787, a “Statute of Monopolies-type” law was

¹⁰⁷ Peter Drahos, *A Philosophy of Intellectual Property* (Aldershot; Brookfield, USA: Dartmouth, 1996).

¹⁰⁸ Christine MacLeod, “The Paradoxes of Patenting: Invention and its Diffusion in 18th and 19th Century Britain, France, and North America”, (1991) 32:4 *Technology and Culture* 885, at 891.

¹⁰⁹ George Unwin, *Studies in Economic History* (London, UK: Macmillan, 1927), at 184. Macleod also acknowledged that the introduction of the patent system into England was policy-based. See Christine MacLeod, *Inventing the Industrial Revolution: The English Patent System, 1660-1800*, (New York, Cambridge University Press, 1988), at 11-13.

¹¹⁰ Chris Dent, “Patent Policy in Early Modern England: Jobs, Trade and Regulation” (2006) 10 *Legal History* 71.

¹¹¹ George Ramsey, “The Historical Background of Patents” (1936) 18 *J. Pat. Off. Soc’y* 6 at 12.

passed in the Colony of Connecticut in 1672.¹¹² This General Law stated: “There shall be no monopoly granted or allowed amongst us, but of such new inventions as shall be adjudged profitable to the country, and for such time as the General Court shall deem meet.”¹¹³ The Act of March 26, 1784 of South Carolina provided:

“The inventors of useful machines shall have a like exclusive privilege of making or vending their machines for the like term of fourteen years, under the same privileges and restrictions hereby granted to, and imposed on, the authors of books.”¹¹⁴

Initially proposed by James Madison¹¹⁵ and Charles Pinckney¹¹⁶ on August 18, 1787, the inclusion of patents and copyrights under the category of property rights in the Constitution was non-controversial and passed unanimously.¹¹⁷ The absence of debate has been taken as proof of the founding fathers’ firm belief in patents as the best way to

¹¹² George Ramsey, “The Historical Background of Patents” (1936) 18 J. Pat. Off. Soc’y 6 at 13.

¹¹³ Quoted in George Ramsey, “The Historical Background of Patents” (1936) 18 J. Pat. Off. Soc’y 6 at 13.

¹¹⁴ Quoted in Karl Fenning, “The Origin of the Patent and Copyright Clause of the Constitution” (1929) 17 Geo. L.J. 109, at 115. Fenning contends that Mr. Pinckney proposed to the Constitutional Convention that Congress be authorized to give protection to both authors and inventors because Pinckney came from South Carolina, where the Act had provided protection for inventions since 1784.

¹¹⁵ See Documents Illustrative of the Formation of the Union (69th Congress, 1st Session, House Document No. 398, 1927) at 563. Madison’s suggestion was that Congress shall have power: “[t]o secure to literary authors, their copyrights for a limited time. To encourage by premiums and provisions the advancement of useful knowledge and discoveries.” This is also quoted in the following secondary materials: George Ramsey, “The Historical Background of Patents” (1936) 18 J. Pat. Off. Soc’y 6 at 13; Karl Fenning, “The Origin of the Patent and Copyright Clause of the Constitution” (1929) 17 Geo. L.J. 109, at 112; and James Madison to Thomas Jefferson, October 17, 1788, in Bruce Willis Bugbee, *Genesis of American Patent and Copyright Law*, (Washington, DC: Public Affairs Press, 1967), at 130.

¹¹⁶ See Documents Illustrative of the Formation of the Union (69th Congress, 1st Session, House Document No. 398, 1927) at 563. Pinckney’s suggestion was that Congress shall have power: “[t]o grant patents for useful inventions. To secure to authors exclusive rights for a certain time.” This is also quoted in Karl Fenning, “The Origin of the Patent and Copyright Clause of the Constitution” (1929) 17 Geo. L.J. 109, at 112; and George Ramsey, “The Historical Background of Patents” (1936) 18 J. Pat. Off. Soc’y 6 at 13. However, Fenning spelled the name as “Pinckney” whereas Ramsey spelled the name as “Pickney”.

¹¹⁷ B. Zorina Khan, *The Democratization of Invention: Patents and Copyrights in American Economic Development, 1790-1920* (Cambridge, UK: Cambridge University Press, 2005).

encourage socially beneficial innovation.¹¹⁸ The prominent position of the intellectual property clause in the US Constitution¹¹⁹ indicates the great importance that the founding fathers attached to inventive activities and technological progress in their visionary project of transforming the then-fledgling nation to a mature democracy.

The 1787 US Constitution provided for the first time a constitutional instrument recognizing affirmatively an individual's property right in his intellectual creation. The Constitution declares that "the Congress shall have power ... to promote the progress of science and useful arts, by securing for limited times to authors and inventors, the exclusive rights to their respective writings and discoveries." The fact that this is the single mention of the term "right" in the body of the Constitution reveals the significance that was given to patents and copyrights.

It should be noted that "science" meant knowledge in general, and "useful arts" meant technology. According to Justice Rich,

"'Science' as we use it today does not have the connotation it did in 1787 when it referred to knowledge in general, in all fields of knowledge. What we mean today by 'science' was then called natural philosophy. It was quite clearly intended by the authors of the Constitution that copyright, not patents, was intended to

¹¹⁸ Morgan Sherwood, "The Origins and Development of the America Patent System: How Well do the Idea and Implementation of Patents Mesh with the Aims of a Democratic Society" (1983) 71:5 American Scientist 500 footnote 5. See also, George Ticknor Curtis, *Constitutional History of the United States: From Their Declaration of Independence to the Close of the Civil War*, (New York: Harper & Bros., 1889-1896)

¹¹⁹ US Constitution, Art I, § 8, cl. 8.

promote science, and the province of rights granted to inventors respecting their ‘Discoveries’ was to promote the ‘useful Arts.’”¹²⁰

The original draft of the Constitution included the words “for a limited time”, as opposed to the language now exists: “for limited times”. This may suggest different duration of protection for copyright and patent, or may intend to leave room for term extension in the future.

In *McClurg v. Kingsland*,¹²¹ the U.S. Supreme Court interpreted the “powers of the Congress” as to patents. Justice Baldwin wrote:

“The powers of Congress to legislate upon the subjects of patents is plenary by the terms of the Constitution, and as there are no restraints on its exercise, there can be no limitation of their right to modify them at their pleasure so they do not take away the rights of patents and existing patents.”

4.2 Patent Rights v. Patent Privileges

The American approach led to the institutionalization of the patent system under the rule of law.¹²² This was different from the approach taken in England, where the issuance of patents remained rife with discretionary authority because they were grants from the sovereign. At a broader level, U.S. patent rights were actually conceptualized in terms of common-law property rights. Patents were identified as title deeds, and courts applied

¹²⁰ See The Honorable Giles Sutherland Rich, “My Favorite Things” (1995) 35 IDEA 1, at 2. See also, Morgan Sherwood, “The Origins and Development of the America Patent System: How Well do the Idea and Implementation of Patents Mesh with the Aims of a Democratic Society” (1983) 71:5 American Scientist 500, at 500.

¹²¹ 42 U.S. 202.

¹²² B. Zorina Khan, *The Democratization of Invention: Patents and Copyrights in American Economic Development, 1790-1920* (Cambridge, UK: Cambridge University Press, 2005), at 30-31.

other real property concepts to patent law.¹²³ Multiple owners, for instance, of a patent were identified as tenants in common, and infringement was recognized as a trespass of the inventor's property.¹²⁴ In England, patents were protected not as property, but as personal privileges granted by the Crown. Thus, as a doctrinal matter, English patents were not transferable. They could not be sold, they could not be devised by will, unless the Crown granted an exception and permitted them to do so.¹²⁵ Even more importantly, the English Government retained in every patent an implied right to use that patented invention without authorization from the patentee.¹²⁶

In *McKeever v. United States*,¹²⁷ Justice Nott distinguished the American patent system from the British patent system:

“But it [*Statute of Monopolies*] neither recognizes an invention as property nor declares the right of a truly first inventor to acquire a patent.... a patent in England is nothing more than a grant dependent in contemplation at law upon royal favor, and subject to the general implication of all grants wherein the control has not expressed, that they shall not exclude a user by the Crown. In this country, on the contrary, our organic law recognizes in the clearest terms that mind work which we term invention. Instead of placing our patent system upon the English foundation of executive favor and conferring that prerogative of the Crown upon

¹²³ Adam Mossoff, “Who Cares What Thomas Jefferson Thought About Patents? Reevaluating the Patent “Privilege” in Historical Context”, (2007) 92 Cornell L. Rev. 953, at 992-998.

¹²⁴ Adam Mossoff, “Who Cares What Thomas Jefferson Thought About Patents? Reevaluating the Patent “Privilege” in Historical Context”, (2007) 92 Cornell L. Rev. 953, at 993-994 fns. 193-94 (identifying substantial 19th century patent case law in which courts use these real property concepts and rhetoric).

¹²⁵ Adam Mossoff, “Who Cares What Thomas Jefferson Thought About Patents? Reevaluating the Patent “Privilege” in Historical Context”, (2007) 92 Cornell L. Rev. 953, at 992.

¹²⁶ *Feathers v. The Queen*, 12 Law T., N.S. 114 (1865).

¹²⁷ 1883 C.D. 232.

the President, they transferred all authority to the Legislative Department of the Government – the department which regulates rights – by placing it among the specially enumerated powers of Congress.”¹²⁸

The belief that an inventor has an inherent right to her invention was evidenced by the Congressional debate when the Patent Bill was pending before the House of Representative. William D. Murray, was reported saying:

“These (English) patents are derived from the grace of the Monarch, and the exclusive enjoyments of the profits of a discovery is not so much a right inherent as it is a privilege bestowed and an emanation of the prerogative. Here, on the contrary, a citizen has a *right* in the inventions he may make, and he considers the law but as the mode by which he is to enjoy their fruits.”¹²⁹ (emphasis original)

Patent Commissioner Thomas Ewbank wrote in his Patent Office Report for 1849:

“According to antiquated fooleries about ‘divine rights’ by which everything belonged to the kings and nothing to the people – not even the fruits of their ingenuity – inventors abroad still pray for and accept patents as ‘special acts of the sovereigns grace’. With us the insulting and debasing proposition is effectually ignored. Not subjects, but freemen, inventors here claim and receive patents of right – their own right.”¹³⁰

In *United States v. Dubilier*, the Supreme Court of United States held that:

¹²⁸ Quoted in George Ramsey, “The Historical Background of Patents” (1936) 18 J. Pat. Off. Soc’y 6 at 17.

¹²⁹ Quoted in George Ramsey, “The Historical Background of Patents” (1936) 18 J. Pat. Off. Soc’y 6 at 16.

¹³⁰ Thomas Ewbank, Patent Office Report for 1849, at 513, quoted in George Ramsey, “The Historical Background of Patents” (1936) 18 J. Pat. Off. Soc’y 6 at 17.

“The grant of letters patent is not, as in England, a matter of grace or favor, so that conditions may be annexed at the pleasure of the executives.”¹³¹

Lincoln states: “The patent system changed this; secured to the inventor, for a limited time, the exclusive use of his invention; and thereby added the fuel of interest to the fire of genius, in the discovery and production of new and useful things.”¹³²

4.3 Patent as a Policy Tool in Nation-Building

It is generally regarded that the US was an importer of European technology from the colonial period through the early nineteenth century. Historian Doron Ben-Atar demonstrates that the US in its earliest years as a new nation was an active appropriator of industrialized Europe’s technological know-how, which was used to develop a thriving indigenous manufacturing capability.¹³³ The economic policies at the time were much in common with those of the developing countries today, which included attracting skilled European artisan to immigrate into the US who would bring with them their industrial and technological know-how.¹³⁴ Pragmatic and visionary early American luminaries, in their relentless pursuit of knowledge, acquired technology also through dispatching people to Europe to learn.

¹³¹ 289 U.S. 178.

¹³² Abraham Lincoln, “Lecture on Discoveries and Inventions,” delivered in Illinois in February 1859.

¹³³ Doron Ben-Atar, “Alexander Hamilton’s Alternative: Technology Piracy and the Report on Manufactures” (1995) 52:3 *William and Mary Quarterly* 389. See also, Doron S. Ben-Atar, *Trade Secrets: Intellectual Piracy and the Origins of American Industrial Power*, (New Haven: Yale University Press, 2004).

¹³⁴ This is documented in the “Report on the Subject of Manufactures” (ROM), which was submitted to Congress by Alexander Hamilton, then Treasury Secretary. The ROM emphasized the significance of technological self-sufficiency and recommended aggressive economic policies to stimulate new technology and innovation. See Alexander Hamilton, “Final Version of the Report on the Subject of Manufactures,” reprinted in Harold C. Syrett, ed., *The Papers of Alexander Hamilton*, vol. 10, (New York: Columbia University Press, 1966) at 308.

Khan compares major features of the American patent system in the 19th century with those of the pre-existing patent systems, particularly in England and France.¹³⁵ Khan attributes the unparalleled success of the American patent system to the clearly defined and enforced property rights. Khan highlights the democratic feature of antebellum patent law: demographic information of patentees shows a wide range of background; issued patents are publicly available; the legal requirement that patents shall be granted only to the “first and true inventor” is strictly enforced by the court; and low filing fees for patent applications.

Kenneth L. Sokoloff and B. Zorina Khan observed that the first American patent law “embodied a system that would allow ease of entry to individuals seeking secure rights to their technical ideas: the “first to invent” principle that providing security in the case of priority disputes, low application fees combined with no annual renewal fees, and a routinized administrative apparatus. Later amendments to the initial legislation, especially the addition of an examination for meeting the requirements of novelty, gave American patents even further legal validity and economic value. The drafters of the American patent law crafted a system with the intention to create a dynamic market for the exchange of technological information.”¹³⁶

¹³⁵ B. Zorina Khan, *The Democratization of Invention: Patents and Copyrights in American Economic Development, 1790-1920*, (Cambridge, UK: Cambridge University Press, 2005).

¹³⁶ Kenneth L. Sokoloff & B. Zorina Khan, “The Democratization of Invention during Early Industrialization: Evidence from the United States, 1790-1846” (1990) 50:2 *Journal of Economic History* 363-378; B. Zorn Khan & Kenneth L. Sokoloff, “Institutions and Technological Innovation during Early Economic Growth: Evidence from the Great Inventors of the United States, 1790-1930”, (July 2004) CESifo Working Papers, No. 1299; B. Zorn Khan & Kenneth L. Sokoloff, “Institutions and Democratic Invention in 19th Century America: Evidence from ‘Great Inventors’, 1790-1930”, (2004) 94:2 *American Economic Review* 395-401; B. Zorn Khan & Kenneth L. Sokoloff, “History Lessons: The Early Development of Intellectual Property Institutions in the United States” (2001) 15:3 *Journal of Economic Perspectives* 233-246; and Edward C. Walterscheid, *To Promote the Progress of Useful Arts: American Patent Law and Administration, 1787-1836* (Littleton, CO: Fred B. Rothman and Co., 1998).

Karl Fenning, then Assistant Commissioner of Patents states: “It is generally admitted that our liberal patent laws have done much to bring about the present wonderful condition in which we live. The present is indeed an age of invention.”¹³⁷ In conclusion, the affirmative constitutional recognition of an individual’s property right in her intellectual creation in the US advanced two policy agendas. First, clearly defined and enforced property right contributed a great deal to the unparalleled success of the US patent system, which encouraged socially beneficial innovation and technological progress. Second, the antebellum patent law contributed a great deal to the transformation of a former colony to a mature democracy.

Chapter V Patent as a Policy Tool in Other Parts of the World

It is interesting and ironic to note that The Netherlands and Switzerland, two founding members of the *Paris Convention*, did not have a patent system themselves at the time. Since the costs of protecting patent rights in the 19th Netherlands outweighed the benefits, it seemed only reasonable to abandon its existing patent law in 1869. Jan Brinkhof argues that this lack of patent protection does not constitute “a form of legalized theft”, as it would be the case if patent rights were considered natural law. Rather, Brinkhof views it as merely a utilization of “patent law as a tool for a rational economic policy.”¹³⁸

In an attempt in 1882 to oppose the revision of the Swiss constitution in order that a patent law could be enacted, J. Geigy-Merian, founder of the Swiss chemical company Geigy, was quoted as saying: “patents are a paradise of parasites.... Patent protection

¹³⁷ Karl Fenning, “Growth of American Patents,” (1926) 8 J. Pat. Off. Soc’y 52, at 54.

¹³⁸ Jan Brinkhof, “Wish List in the Area of Patent Law” (2004) IIC 407, at 408.

forms a stumbling block against the development of trade and industry.... The patent system is a playground for plundering patent agents and lawyers.”¹³⁹

Schiff studied the crucial period of industrialization in which the Netherlands and Switzerland did not have a national patent system. Schiff posed two questions in his study: (1) How great a stimulus to inventive activity and technological innovation is a national patent law? (2) What is the causal connection between the existence of a patent system and the pace of industrialization in a given country? In attempting to answer these questions, Schiff concentrates on the only two European countries which for several decades during a period of rapid industrialization in Europe were both without a national patent system: the Netherlands, which repealed in 1869 its very poor patent law of 1817 and did not reintroduce a patent system until 1912, and Switzerland, which introduced its first patent law, an extremely rudimentary one, in 1888 and which did not have a comprehensive patent system until 1907.

Schiff analyzes the industrial development in both countries in their patentless eras, inventive activity and technological innovation in both countries during the late nineteenth century, and the relationship between the patent controversy and developments in crucial industries.

Schiff concludes that a unilateral no-patent policy is economically feasible. Schiff demonstrates that the overall rate of industrialization in the Netherlands and, even more so, in Switzerland was not “appreciably slower” than it might have been under a patent law. On the question of the impact of the introduction of a national patent system on the

¹³⁹ Graham Dutfield, *Intellectual Property Rights and the Life Science Industries: A Twentieth Century History*, (Hampshire, UK: Ashgate, 2003), at 53.

volume of inventive activity, Schiff's conclusions differ for both countries. In the Netherlands the introduction of the patent law of 1912 did stimulate a great increase in Dutch domestic inventions; while in Switzerland a "less dramatic and far-reaching" legislative change in 1907 did not increase Swiss inventive activity appreciably above the very high level it had attained in the Swiss patentless era.

The idea of patent being a form of private property is foreign to other parts of the world. Through trade and commerce with European powers during the pre-colonial period, many countries exposed themselves for the first time to patent law and practice in Europe. Subsequent colonization introduced patent statutes to developing countries in Latin America, Africa, Asia, and the Pacific. For example, Barton Hack contends that rapid industrialization in the second half of the 19th century in Australia owes much to its patent law.¹⁴⁰

Chapter VI Conclusion: Patent System as a Utilitarian Tool of Public Policy

Having traveled through the major landscape of patent systems across a time span of several centuries, some general conclusions will be offered in this section.

First, patent laws and practices have been shaped, more than any other relevant factors, by public policy and national interests. Thomas M. Meshbesher argues that differences in

¹⁴⁰ Victorian Patent No. 1 of 1854; Queensland Patent No. 1 of 1860. See also Barton Hack, "A History of the Patent Profession in Colonial Australia", paper presented at the Annual Conference of the Institute of Patent Attorneys of Australia, Brisbane, Queensland, March 29-31 1984; and Victorian patent indexes, 1854 to 1904. See also, Judy Wing, *A "Lucky" Profession?: A History of the Patent Profession in Australia*, (Camberwell, Victoria: Institute of Patent Attorneys of Australia, 1996); Australian Patent Office, *Patent Office Notes on the History of the British and Australian Patents Acts and Laws Relating to Letters Patent of Inventions in Australia*, 5th., (Canberra, Australia: Government Press, 1974).

national patent laws: “may owe considerably more to different approaches to the public-policy underpinnings of patent law than to differences in the character of legal thought of judges and legislators operating under different legal systems.”¹⁴¹ Hence, national patent laws are the utmost demonstration of national priorities in technological expertise and market concentration. However, with the shrinking policy space available to governments in the midst of international obligation jungle, national governments have less deployable resources and instruments to align their patent law with public interests. Ultimately economies and people in those economies become more vulnerable to threats presented by public health crisis and food shortage. When patent law has become uncompromisingly inconvenient to achieve national strategic agenda, some type of reform seems only necessary and proper.

Second, the vocabulary of pragmatism has been the underpinning language of many patent systems in history with utilitarianism as the overarching theme. Encouraging innovation, promoting new technologies, and developing industries were benefits most frequently quoted in the context of patent discussions. Unlike other forms of IP rights which embrace a natural form of human rights or moral entitlement to one’s intellectual creation, patents are purely a monopoly privilege as a corollary of government intervention in return for greater access to and dissemination of socially beneficial inventions. Hence, the function and utility of those inventions are the primary basis for the patent award. In an economy of massive large-scale commercial production, the strongest justification for the departure from the norm of free competition comes from a carefully calculated costs and benefits of patent to social utility.

¹⁴¹ See Thomas M. Meshbesh, “The Role of History in Comparative Patent Law” (1996) 78 J. Pat. & Trademark Off. Soc’y 594 at 596-597.

Third, as Professor Chua observes, the best talents of a society cannot come from a single ethnicity.¹⁴² The same is true with the best of inventions. They have to be drawn upon diverse technical disciplines. Cultivate an environment in which knowledge and expertise from different technical disciplines can interact and hence new models and simulations could possibly be envisioned. Further, alternative legal traditions in the world could be a potential source of inspiration; and organization of markets and operation of global economic activities could not necessarily follow the dictation of neo-liberal free market ideology.

¹⁴² Amy Chua, *Day of Empire: How Hyperpowers Rise to Global Dominance – and Why They Fall*, (New York: Doubleday, 2007).