

Recent Developments in Business Method Patents in the U.S. and the Implication to the People's Republic of China: A Comparative Perspective

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ABSTRACT

A detailed and structured comparative study concerning business method patents (BMPs) is conducted between Chinese and the United States patent regime. This comparative study covers BMPs' concepts, jurisprudential history, related terminologies, theoretical rationales, functional cores of the two countries' legal and administrative systems, as well as paradigms for public opinions towards BMPs. The comparisons are based on the most recently updated legislative and judiciary developments in the two countries. Following this comparison is a philosophical and economic analysis on implications of BMPs in general. Examples of how BMPs work in real-world in the two countries' administration, and why BMPs are important and can affect businesses strategically, are given. Then the issue of cross-border enforcement, which is generally thought of as a particularly challenging aspect of BMPs, is touched on. In the final chapter, placed in a globalized context, the concept of externalities in economics is introduced into the analysis of the BMPs' value for a country's innovation and entrepreneurial environment. The purpose of this thesis is to explore important dimensions of BMPs from an updated and more globalized angle, providing a perspective for policymakers, practitioners and scholars in the field, especially for those who are interested in the two countries being researched.

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INTRODUCTION

Conceptual Framework

Over the past decade, the Intellectual Property field has witnessed a drastic expansion of its own scope. Among others, business method patents (BMPs) have been most conspicuous. Since 1998 when the United States Court of Appeals for the Federal Circuit (CAFC) dismissed “business method exception” in *State Street Bank & Trust Co. v. Signature Financial Group Inc.*, and embraced a broader scope of patentable subject matter, issues of patenting business methods have become increasingly an emerging frontier in the legal discipline of the Intellectual Property law. Meanwhile its significance as a legal leverage for businesses in real-life is, unsurprisingly, increasing as we enter this global digital age.

After a brief booming period following the late 1990s, a recent United State court decision in October 2008, *In re Bilski*, by CAFC, the exact same court who gave an official birth to business method patents a decade ago, arguably cast an ominous shadow on business method patents’ future. Legislators, lawyers and scholars specializing in Intellectual Property laws are now intensely debating on directions in which the trend for business method patents is heading. In the most recent *Bilski* decision made on June 28 2010, the U.S. Supreme Court prudently refrained from laying down a clear test regarding eligibility of business methods as a statutory patentable subject matter, adding to the uncertainty of the future of BMPs. The first objective of this thesis is to understand these recent developments of business method patenting in the United States and their significance, thus providing a legal reference frame for further research of comparison with China.

Also over the past decade, we have witnessed that some of the U.S. significant doctrinal developments regarding business method patenting quickly spread from the United States and

influenced other major jurisdictions worldwide. This continues to generate a considerable degree of controversy and an enforceability division. Yet interestingly, while the longitudinal studies on business method patenting focusing on one particular country abound, cross-sectional studies of this subject between different countries, especially those of different legal family and disparate economic status, are much fewer in current literature. Indeed such cross-sectional studies are very important and valuable. From a theoretical point of view, lacking such a cross-sectional study will render a theory incomplete, no matter how rich in its longitudinal studies. Today laws are evolving dramatically. In the meantime, legal pluralism and diversity are emphasized. One aspect of a country's law may be beneficial to be introduced into another country's law. Answers derived from a cross-sectional study are helpful for a better understanding of the implications and mechanism of the business method patent in a global context. From a practical point of view, in the absence of such a cross-sectional study, practitioners and other market players will run into problems when dealing with an issue involving different jurisdictions, which becomes more and more inevitable in today's global business environment; a cross-sectional study sometimes also can help us to think outside the box, yielding more meaningful and insightful solutions to some of the problems that are hanging over this subject; and even more importantly, with the prior art database becoming more and more searchable from another country's patent office, a cross-sectional study becomes more and more essential.

Indeed this is now a perfect time to conduct a comparative study on the topic of business method patent, because: 1) as noted earlier, recently there have been some significant and meaningful developments in the birthplace of the BMPs----the United States. Such developments are worthy of a thorough comparative examination to gauge the new (if any) gap with, and new influences on, the rest of the world, in particular for those emerging economies, as the latter are

experiencing their own course of drastic patent reform these years also;¹ 2) Catalyzed by the Internet, service industry is experiencing an unprecedented boom at this moment. The unique features of online business demand a comparative examination of the global business method patenting regime, which becomes an increasingly imperative and integral part for the overall issue of business method patenting; 3) Such a comparative examination of two hypothetical extremes of a continuum in terms of business method patenting policy, namely the United States and China, would also shed some light on policymaking for other countries in the middle ground. Evidence accumulated through the past decade in the aforementioned extreme countries will emerge more vividly through such a cross-sectional study, which is helpful in identifying proven patterns or desirable trends. These patterns and trends can provide guidance for those countries which are sitting on the fence puzzling.

This thesis is situated into such a critical position, attempting to answer two overarching questions: How do the recent developments affect or predict the viability of the business method patents across the researched two countries? From a normative view, what factors should a policymaker consider in dealing with business method patents? In addressing these two questions, this thesis is divided into five chapters, following the logic map below.

Chapter 1 provides an overview of the issue of patenting business methods, including its brief history, prevalence and problems, etc. A background analysis of business method patents' unique features and their differential forms in different countries are essential. For someone who has not investigated deeply in this topic before, the findings in this chapter can be counter-intuitive. For instance, while business method patenting may be claimed a "new species in the

¹ Using China as an example, it has just undergone a patent act revision in 2008, with its revised Patent Act coming into force in October, 2009. Correspondingly, China's patent administrative authority also released its new version of Examination Guidelines (2010), which came into force on February 1st, 2010. China is now seeing a new round of heated debate as to whether the steps reflected in the new patent reform are effective and beneficial.

patent family”, one would find it surprising that indeed it has a much longer history. This section posits that studying business method patents is like looking through a kaleidoscope, each turn gives the viewer a differently fantastic and informative scene.

Chapter 2 is the kernel of this research, which provides a comprehensive and detailed descriptive analysis of business method patenting in the two researched countries, namely the United States and the People’s Republic of China. In this chapter I conduct a three-tier analysis of the target countries’ business method patent regime, namely the theory and terminology comparison, statutes and case law comparison, administrative regulations and practice comparison, employing a legal comparative approach. The recent patent reforms in the two countries are discussed and analyzed. In addition, Patent Cooperation Treaty (PCT) and service industries developments in the two countries are identified as two other influential factors in the issue, and analyzed in this chapter also.

Drawing upon the descriptive analysis between the two countries in the previous Chapter, Chapter 3 goes one further step to conduct a prescriptive analysis on the pros and cons of business method patenting, employing some law and economics concepts. In Chapter 3, the underlying rationale of the patent protection on business methods will be discussed and analyzed, revolving around their current controversies, historic revelations, and future prospects. To address ‘current controversies’, my analysis and examples will show that even though patent theorists have long pointed out three main justifications for granting a patent, one of the three is currently being disproportionately underestimated. In addition to stimulating creativity and promoting disclosure, which are the two justifications that are generally agreed upon, a patent also serves as a guarantee to rewarding capitalists’ investment and marketing promotion efforts. It is this last one justification that is highly relevant yet often underrated in the case of business

method patenting. Ignoring this aspect is expensively unbearable, conceivably leading to a similarly frustrating situation in the U.S. prior to the introduction of Bayh-Dole Act in early 1980s, where no entity would bother to promote any new innovation to the market, because of a lack of property rights guarantee. This chapter will illustrate in real life how the elimination of such an incentive influences market and ultimately, the general public, by examples of today's insurance industry in China, where homogeneous products teem despite diversified consumer demands. Based on serious and extensive analysis, this chapter clarifies many myths regarding business method patenting, including the scapegoat of so-called "junk patents" and "patent trolls", the alleged harm to small businesses' innovation, etc. Furthermore, much of historic evidence leads to such a conclusion that the legitimacy of all kinds of patents have always been debated and attacked, and yet the patent system never ceased to thrive. This trend can be predictive in the case of current business method patenting predicament. For the prospects, this chapter will briefly discuss the possibility of a 'sui generis' protection of business methods.

Chapter 4 deals with a special and yet imperative aspect of the business method patents, namely their cross-border enforceability. Patent laws are territorially defined, both in prosecution phases and in enforcement phases. However the advent of the Internet has challenged this principle drastically, especially for the case of business method patents, for two reasons: 1) business methods tend to have a universal appeal; with the aid of the Internet a business method can be more quickly conducted internationally, thus is more susceptible to cross-border infringement; 2) business methods themselves are the least uniformly recognized patentable subject matter, thus making the contrast of legal division more evident than other types of Intellectual Property rights. Many argue that the prevalence of Internet use would render one country's business method patent regime useless, as in the context of omnipresent Internet

network one jurisdiction's patent can be easily circumvented by establishing the server in another jurisdiction where such patent protections are absent. In Chapter 4 I attempt to examine to what extent this argument is true. Such an examination would hopefully improve our understanding of the implications and significance of business method patenting framework at a global level.

Finally, in Chapter 5, drawing on all the factors discussed in previous chapters, I will render a complete picture of the implications as to what the recent developments of business methods patenting can have. Considering the increasingly complementary nature of the Sino-US economic and trade relations, and more concretely, the increasingly intensified cooperation between the two countries' patent authorities in prior art search and other patent database sharing, such implications are unsurprisingly bidirectional, which means both parties need to be wary and informed of what the other did. In addition to analyzing and summarizing the current literature regarding policy issues in the two countries, I posit my own new theory that there exists externalities of one country's patent laws which must be taken into consideration. Externality is an economics term describing spillover value of a certain action or policy made by one entity for another. Incorporating externalities into legal studies is not novel. In environmental law there has been literature employing it. Unfortunately, environmental law and Intellectual Property (IP) law seem to be insulated and such theories have not stimulated further significant research or theoretical developments in the IP field, where the externalities are very conspicuous. This chapter will contain many of my own opinions, being the most original part of this thesis.

Methodology

There are many jurisdictions and regions in the world which have established a robust patent regime, why choose the U.S. and PRC as the countries in this research? Before embarking

on an intensive comparative research, first I need to determine the countries upon which I conduct the comparative research.

True, there are so many jurisdictions where patent system has long been existent and developed, particularly among the Western countries. Even more so, business method patents are widespread in many countries, depending on how broad the definition is. In some countries, business method patenting is developing very rapidly recently. For instance, Japan has established its special institute dedicated solely to the studies of business method patenting.² All of them seem to deserve research. However, as noted earlier in the conceptual framework section, in order to construct a model that is more indicative of the patterns and trends, the more polarized research targets would be the more informative. Following this logic thread, this thesis selectively filters out bland samples, focusing exclusively on the most influential ones. To achieve this end, the following criteria are constructed.

One side of the comparison should be a country with a liberal approach to BMPs, according to the three criteria. First, it must be abundant in indigenous legal scholarship and practice regarding business method patenting. Here “indigenous” does not mean that the author or the initiator of the action must be local nationals, rather, any literature or legal activities will qualify as indigenous so long as it targets the selected country. For instance, when a Russian company files a business method patent application in Sweden, such activity would be classified as Swede indigenous as it is under Sweden patent framework and directed to Sweden. If such filing activities are abundant, this thesis would choose Sweden as the researched country. Second, a country on the liberal side must have exhibited influences on other countries, both in legal sense and in economic sense. If the first criterion emphasizes the quantity aspect, then this

² They established an official website: <http://www.bmp2000.net/> back in 2005. But for some reason the website is not accessible at the point of this writing.

second criterion emphasizes the quality aspect. In this sense, sheer PCT country phase application quantity does not automatically make a country a candidate for being researched in this thesis. To be considered, it must have some original jurisprudence that is influencing other countries, either through *stare decisis* or through trade relations. Third, an ideal liberal country for this research should better be described as a country where the issue regarding the business method patenting is still in an unsettled state, than a country where most legal issues are in a chronically stagnant state. Therefore countries wherein a patent reform is underway will be given more attention.

Correspondingly, for the other side of the comparison, namely countries which adopt a more conservative stance in terms of patenting business methods, three criteria are followed in the selection process. First the candidate country must already have a functional patent system in place. Although being treated conservatively, BMPs should not be completely unheard. Comparable cases that relate to BMPs should have a minimum presence in that country, either officially or merely in practice. Second that country must have an exhibited or potential economic significance in the global market, especially for its service industries, as BMPs are most crucial in service industries. Finally, as with the case of the liberal countries, ideally the candidate country selected in this research is still unsettled with the issue of patenting business methods, and more ideally being among those least studied, opening up an opportunity to explore uncharted territory. Generally speaking, to make the scope of the comparison more encompassing, an emerging economy is more ideal than a developed country on this side of the comparison, as far as this research is concerned.

To satisfy the criteria set out above, I chose the United States as the liberal country in terms of business method patent system, and the People's Republic of China as the comparing

country. In 2008, there were in total 13,779 application filings under the USPC Class 705 (for business method) to the United States Patent and Trademark Office (USPTO), and 1,643 patents were granted³. The U.S. is the most ideal country in terms of its indigenously generated business method patents, compared to other developed countries, for example, Canada. In 2005 Canada's business method patent applications reached its peak, but still only not exceeding 600;⁴ at the same period of time, USPTO received 9,027 applications under Class 705 and granted 711 patents. In the 14 year period 1993 to 2006, there were only 4,902 patent applications in total in the IPC business method classes in Canada, less than the number for the USPTO's one year statistics. In addition to its high grant rate, the diversity of the USPTO's patent grants is also worthy of research. From healthcare management to online shopping, from methods of avoiding taxes to unique advertising schemes, USPTO's patent grants often pushes the boundaries and provides new insights into traditional patentable subject matter. For administration aspect, the U.S. is also a valuable research target, in particular for its prior arts search mechanisms. USPTO has also established a separate organ, "Technology Center 3600", within its administrative body to deal exclusively with the patent applications in business related data processing methods and technologies. This unique organ itself is valuable to study and compare to other country's equivalence. With respect to international influence, the U.S. is the strongest economy in the world. In particular, the U.S. is the leader in online E-commerce, which is a growing and influential portion of the service industries. The U.S. is also undergoing patent reform, with

³ The United States Patent and Trademark Office, Class 705 Application Filing and Patents Issued Data (based on information available as of May 13, 2010), online: USPTO <<http://www.uspto.gov/patents/resources/methods/applicationfiling.jsp>>.

⁴ To the contrary of the belief that Canada does not accept BMPs at all, in reality, there is a small portion of BMPs issued in Canada, which usually demand skilful drafting techniques to frame the claims. The grant rate of BMPs in Canada is particularly low compared to other developed countries. See Hazel V J Moir, "Do Patent Systems Improve Economic Well-Being? An Exploration of the Inventiveness of Business Method Patents" (2008), online: SSRN <<http://ssrn.com/abstract=1423248>>. See also Mark B Eisen, "Arts and Crafts: The Patentability of Business Methods in Canada" (2001), 17 C.I.P. Rev. 279.

business method patenting being an important issue thereof. Thus the U.S. definitely meets the criteria set out earlier. For the PRC, it has established its patent regime since 1984, which remains functional since then. Its patent regime is dramatically evolving and yet is among the least researched countries in current literature. As an developing country of the civil law family, PRC contrasts distinctly to the U.S. in many ways, hence the ideal country to conduct the comparison. As for economic significance, the population base in PRC strongly indicates a huge potential for service industries. Most importantly, PRC recently made the third amendment to its Patent Act, which came into force in October 1, 2009 and marked a new step in its patent reform. Indeed one of the most important contributions of this thesis is that it updates the current literature with the latest legislation in China, namely the Patent Act 2008.⁵ To summarize, comparative studies between the U.S. and PRC are valuable and informative.

Now the fundamental methodology is in place that determines what countries I compare in this thesis, next I need to further set out issues that will be examined. Generally speaking, the comparative study in this research follows a functional comparison paradigm, employing a special design. As stated in the conceptual framework part, a three-tier comparison is conducted, in order to understand the equivalence and dissonance, as well as gauge the possible gap between the two countries. These three tiers are elaborately designed, based on the following two considerations.

First, at the very fundamental level, due to the different legal family and contrasts in laws, as well as the elusive nature and the diversified philosophy of the subject matter, there is a need for a comparison and clarification of relevant terminologies, such as “non-obviousness” for the

⁵ A search of LegalTrac on January 13th 2010 turned up no literature on the topic of business method patenting in China which is based on the Patent Act 2008. The latest literature up till then was by Zhang, Yurong and Yu, Xiang, which was based on Patent Act 2001. See Yurong Zhang & Xiang Yu, “The Patent Protection for Business Method Inventions in China” (2008) 30 E.I.P.R. 412.

U.S. compared to “inventiveness” for the PRC. Unlike the following Definition section of the Introduction which provides definitions from a general context, the comparison section in Chapter 2 will mainly address the distinctions between the two countries, in order to make the remaining comparison more effective and accurate. Second, the comparison of the law is divided into functional elements. To understand how the business method patenting works in the researched countries, the best way is to follow such a logic sequence that reflects the real-world application and enforcement, namely patentable subject matter, technical requirements for the PRC’s case, substantive requirements, disclosure obligations. This design bestows and assures my research with more practical values.

Definitions

Before entering Chapter 1, a conceptual analysis of the subject matter is necessary because “business method” is really a very broad term in semantic sense, and subject to a variety of different interpretations.

What are business method patents? This term, unfortunately, is never explicitly defined in any countries’ patent acts or statutes.⁶ In some common law countries, case law jurisprudence defines this term negatively through “exceptions”, which are usually hardly clear-cut or final. In seeking an answer to this question of definition, however, there are three other sources available which we may find helpful in defining the term.

The first source is from documents regarding patent classification provided by some international patent organizations. In the 8th edition of the International Patent Classification

⁶ Probably no country has, as of yet, stipulated an express definition in its written legislation. Although in 2000 a U.S. Representative proposed the *Business Method Patent Improvement Act* (H.R. 5364) which provided with a written definition of “business methods”, this bill did not pass in 2000. Then this same bill was reintroduced in 2001 as H.R. 1332, however as of yet the congress has neither adopted it nor rejected it. Therefore, this bill has never become law. See Russell A. Korn, “Is Legislation the Answer? An Analysis of the Proposed Legislation for Business Method Patents” (2001-2002) 29 Fla. St. U. L. Rev. 1367.

(IPC)⁷ administered by the World Intellectual Property Organization (WIPO), the subclass "G06Q" is designated to business method patents. The definition under this subclass reads, "Data processing systems or methods specially adapted for administrative, commercial, financial, managerial, supervisory or forecasting purposes".⁸ This classification code has been adopted by the State Intellectual Property Office of the People's Republic of China as a statistical tool in publishing its surveys. However, as one may find out by reading literally, this definition by IPC is fairly narrow, much narrower than even its earlier version. A comparison conducted by an Australian scholar has shown that, "of the original 404 applications filed from 1993 to 1999 and classified as business methods under IPC7, 189(47 per cent) were not in the IPC8 business method classes dataset."⁹ The United States uses its own U. S. Patent Classification (USPC).¹⁰

The second source to find a definition of business method patents are government administrative regulations governing the business method patenting issues. In reality, few countries have their government documents explicitly stipulating the definition of the business method patents. The United States, with its unique patent classification method in the world, stands alone to provide a definition by its patent office. In the U.S. Patent Classification System - Class 705(30 June 2000), the USPTO defines "Business Methods" as "apparatus and corresponding methods for performing data processing operations, in which there is a significant change in the data or for performing calculation operations wherein the apparatus or method is uniquely designed for or utilized in the practice, administration, or management of an enterprise, or in the processing of financial data. This class also provides for apparatus and corresponding

⁷ WIPO, The International Patent Classification (8th Edition) (2010), online: WIPO <<http://www.wipo.int/classifications/ipc/ipc8/>>.

⁸ *Ibid.*

⁹ Hazel V J Moir, "Do Patent Systems Improve Economic Well-Being? An Exploration of the Inventiveness of Business Method Patents" (2008), online: SSRN <<http://ssrn.com/abstract=1423248>>.

¹⁰ For the rationale of the patent classification, see Xu Yi-Ping & P. James Terragno, "The U. S. Patent Classification or the International Patent Classification: Which System Should the People's Republic of China Adopt?" (1980) 2 World Patent Information 125.

methods for performing data processing or calculating operations in which a charge for goods or services is determined.”¹¹ At this level, like most other countries, China’s government documents do not expressly provide any official definition to the business method patents.

Finally, the last but not the least resort to giving a meaning to the term “business method patent” is the literature from academia and sometimes industry norms. It is this sector of the definition sources that is most active and diversified, most reflective of a constant evolution and sometimes most rich in terms of giving detailed reasoning of the benefits on a certain way of defining business method patents. Such analysis cannot be acquired through the other two above mentioned sources. For instance, in analyzing a dead congress bill proposed by a U.S. House Representative who set out his version of “business method” definition¹², The definition in the act provides, “(1)a method of(A) administering, managing, or otherwise operating an enterprise or organization, including a technique used in doing or conducting business; or(B) processing financial data;(2)any technique used in athletics, instruction, or personal skills; and (3) any computer-assisted implementation of a method described in paragraph (1)or a technique described in paragraph (2).” The scope provided here is so broad that it leads people to believe that it may create a new class of patent by itself.

Katherine J.Strandburg provides a much clearer clue as to a scientific way of categorizing business methods. She divides up all business methods into four classes, namely “(1) back office or administrative operational methods; (2) customer service operational methods; (3)methods of providing personal or professional services; and (4)intangible products.”¹³ This taxonomy is probably the most comprehensive one currently available.

¹¹ The United States Patent and Trademark Office, U.S. Patent Classification System - Classification Definitions (as of June 30, 2000), online: USPTO <<http://www.uspto.gov/web/offices/ac/ido/oeip/taf/def/705.htm>>.

¹² See *Business Method Patent Improvement Act*, H.R.5364,106th Cong. 2000.

¹³ Katherine J. Strandburg, “What If There Were A Business Method Use Exemption to Patent Infringement?” (2008) Mich. St. L. Rev. 245.

The vagueness in semantics and taxonomy undoubtedly bewilders the patent practice every now and then. In practice, there is no such a thing as a categorical business method patent. This statement holds true for every country. For example, from 1993 to 2006 Canada received 4,902 in total business method patent applications, however, if “using a narrower definition of business methods requiring that the main IPC class be a business method class,” the number of business method applications drops by 43 per cent.¹⁴ In the U.S., “not all business method claims are classified in Class 705. For example, methods of teaching are classified in Class 434, Education and Demonstration. Methods of playing games are classified in Class 273, Amusement Devices, Games. Methods of improving crop yields are classified in Class 47, Plant Husbandry.”¹⁵ This chaos has led to extreme difficulty in selecting business method patents from a country’s patent office’s database for further research.

It is also worth noting that, the definition of business method patents must be distinguished from the definition of software patenting. Mingling business method patents with software patents is a common yet absolute misconception since the two, although having some overlapping areas, are indeed different categories. A business method patent does not necessarily have to be implemented by any computer software. For example, the more diversified U.S. legal context once pushed the traditional boundary so far that, although it was criticized, a “method of bra size determination by direct measurement of the breast” can be granted a patent.¹⁶ According to some scholars, a business method can be broadly defined as “a method of operating any aspect of an economic enterprise,”¹⁷ which does not involve software at all. Having said that, software

¹⁴ *Supra* note 9.

¹⁵ John J. Love & Wynn W. Coggins, “Successfully Preparing and Prosecuting a Business Method Patent Application” (2001), online: USPTO < <http://www.uspto.gov/web/menu/pbmethod/aipapaper.rtf> >.

¹⁶ “Method of bra size determination by direct measurement of the breast”, U.S. Patent No. 5965809 (8 September 1998).

¹⁷ Pol S *et al.*, “Business method patents: A primer” (2009) 1 J Young Pharmacists 379.

patents and business method patents' destiny are often bundled together.

This intersection of business method patents and software patents is indeed a coincidence, and largely due to a compromise: according to most countries' patent laws, pure business methods are not patentable by themselves, i.e. they need to seek out a more tangible embodiment to be patentable. Computerized apparatus happened to be the most effective way of carrying out these business methods, compared to mechanical or whatever other more traditional embodiments (e.g. if you embody your business method into a pure mechanical cash registering machine, no matter how innovative the way it operates, it would not bring you much competitive advantage in today's business world, where all your competitors use electronic cash registering machines). Since the art of drafting patent claims is about maximizing the patent scope, by narrowing their claim from an otherwise ubiquitously-applied method to its most effective embodiment, i.e. a computerized apparatus, the applicant actually sacrifices nothing, thus an expedient compromise occurs; at the same time, because computer software also operates on the same embodiment, the computers, and also because in many cases the software and the hardware are hardly distinguishable, if an applicant attempts to attach their abstract business methods to a an apparatus like a computer, they probably also need to collaterally mention the software, hence the intersection of the software patents and business method patents. If the law allows for abstract rules or methods to be patentable directly without mandatory embodiments, such intersection could have not been present at all.

From the above analysis, the definition and scope of business method patent is highly controversial, in theory and in practice alike. Drawing a clear dividing line between patentable business methods and non-patentable ones is difficult under the current framework.

Chapter 1 **Background and a Brief History of BMPs**

For most of human history, business methods were either in the public domain or protected by trade secrets, although in occasional cases copyright was employed.¹⁸ However in recent decades, as Intellectual Property rights in general are expanding their scope throughout the world, patenting a business method has increasingly become a tempting idea for businesses. Although patent protection costs more fortune and expires its duration more quickly, it is often preferable to trade secret and copyright protection because a patent affords its holder an exclusive right to stop others from using the patented method, regardless whether the competitor developed the method by itself or not.

The behaviours of patenting business methods can have huge impact on a specific industry as well as the entire society. Imagine what would have happened to the airline industry “if the first company to offer frequent flyer miles had enjoyed the sole right to award them”.¹⁹ The significance and consequence of admitting business methods as patentable subject matter is still subject to heated controversies around the globe.

Indeed, since the establishment of patents system, businesses have never ceased to attempt to seek for patents on their creative ways of doing business. Take the U.S. as an example. The actual history of business method patenting is much longer than one decade, marked by the milestone U.S. *State Street Bank* case in 1998. Even before this, the official birth of the business method patenting, one source estimated that there may have been over 2,000 financial products related patents granted in the U.S. which were indeed business method patent in essence.²⁰ Even further back, in the eighteenth century, U.S. business method patents mainly took the form of

¹⁸ There is a Canadian case best illustrates such effort. See *Bulman Group Ltd. v. "One Write" Accounting Systems Ltd.*, [1982] 2 C.F. 327.

¹⁹ Rochelle Cooper Dreyfuss, “Are Business Method Patents Bad for Business?” (2000) 16 Santa Clara Computer & High Technology Law Journal 263.

²⁰ Jaret Seiberg, “Docket: Ruling Threatens Banks with Patent Lawsuits” (1998) American Banker 3.

financial products patents. The first financial product patent of this kind was issued on March 19, 1799, to Jacob Perkins of Massachusetts and was directed to “Detecting Counterfeit Notes.” Unfortunately, however, a disastrous Patent Office fire of 1836 destroyed all details of Mr. Perkins invention, leaving us unaware of how much tangible element was involved in that claim.²¹ On April 28, 1815, another financial patent to a printing method directed to “A Mode of Preventing Counterfeiting” was granted to John Kneass.²² In 1857 a patent was issued for the method of including local advertising in a hotel register.²³ On June 20, 1893, John T. Hicks received U.S. Patent Number 500,071, directed to “Method of and Means for Cash Registering and Account Checking.” The patented method was used for preventing theft committed by restaurant waiters. However this patent was later invalidated by the court on the ground that it lacked patentability.²⁴ On January 8, 1889, United States patents 395,781; 395,782; and 395,783 were issued to Herman Hollerith. “Mr. Hollerith's method and apparatus patents automated the tabulating and compiling of statistical information for businesses and enterprises. They were acclaimed nationally and viewed as revolutionizing business data processing. The protection of his patents allowed his fledgling Tabulating Machine Company to succeed and thrive. In 1924, Thomas J. Watson, Sr. changed the company name to International Business Machine Corporation. Hollerith manual punch cards (IBM punch cards) and his methods for processing business data were still being used up until the birth of the personal computer era.”²⁵

Aside from its longstanding “latent history” in our society, another counter-intuitive aspect of business methods patenting is its prevalence across countries. Rather than being limited

²¹ The claim was presumed to be something related to the printing art. See *Supra* note 17.

²² *Supra* note 17.

²³ Bronwyn H. Hall, “Business Method Patents, Innovation, and Policy”(2009), Department of Economics, University of California, Berkeley, Working Paper No.CPC03-39.

²⁴ *Supra* note 17.

²⁵ *Ibid.*

to certain superpower countries, like the U.S., as one might expect, such a craving for patent by businesses is a universal one, regardless of their economic context. Other than the two countries being researched in this thesis, namely the United States and People's Republic of China, almost every country where there is a functioning Intellectual Property regime combined with a market economy there is a trace of attempts to patent business methods by market players. For instance, Canada is traditionally considered a country where business methods are not eligible for patentable subject matter. Such belief is quite compellingly justifiable, considering that in Canada the Manual of Patent Office Practice explicitly lists "[t]hree categories of claims are possible for computer implemented inventions" and business methods are not mentioned at all.²⁶ However, employing some claiming techniques that add a recitation of a tangible component, even something as conventional as a read-only memory (ROM) to the otherwise non-patentable "means plus function" statements could render the claims patentable in Canada.²⁷ Many companies have taken, and probably will continue to do so, this advantage.²⁸ So in reality business-method-related patents already found their way to far more countries than many believe. Great minds think alike. Shrewd businessmen all over the world have probably found out, or sensed by their intuition, that patenting their business methods is the most efficient way of maximizing their wealth.

Despite this, the truly significant emergence of business method patents came rather late. This booming era for business method patents was marked by a 1998 U.S. case, *State Street Bank & Trust Co. v. Signature Financial Group Inc.*, which I will discuss in great detail later in

²⁶ Canadian Intellectual Property Office, Manual of Patent Office Practice (MOPOP) (2009), s.16.04.

²⁷ See Mark B Eisen, "Arts and Crafts: The Patentability of Business Methods in Canada" (2001), 17 C.I.P. Rev. 279.

²⁸ See e.g. "Method and apparatus for high speed determination of JTH roots and reciprocals of JTH roots", Can. Patent Application No. 2047731, PCT Patent No. PCT/US1990/006532 (13 November 1990). See also "Device and method for evaluating exponentials", Can. Patent Application No.2085228, PCT Patent No. PCT/US1991/004443 (24 June, 1991).

this thesis. After this U.S. case, the number of applications for business method patents started to explode(See the figure below), the industries from old long-established economic order started to panic, and legal theorists started to exclaim that “The trend toward expanding protection deserves attention, with the advent of business method patenting deserving the most attention of all”²⁹. Since then, patenting business methods has quickly emerged as a hot issue in Intellectual Property field both in the U.S. and in other place of the world.

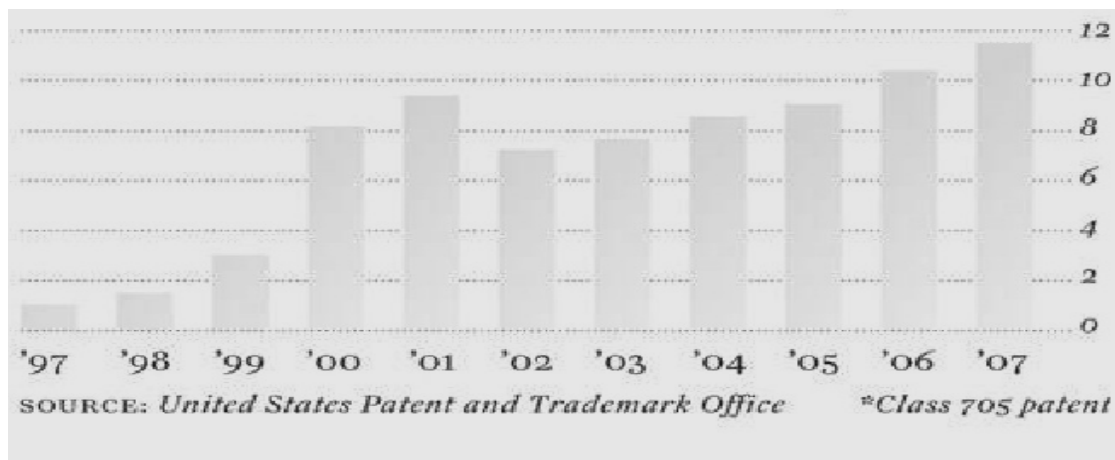


Figure 1: U.S. Business Method Patent Fillings (Unit: Thousands Source: USPTO)

Unfortunately, partly due to the inherently pervasive and penetrating nature of business method patents, fuelled by the fact that patent holders were litigating these patents very aggressively in the past decade, business method patents seem to have encountered more societal resistance than do other species in the patent family, in almost every country. The backlash from society is sometimes so pessimistic and does not distinguish good from bad. For instance, Leo Raskind, Professor of Law at Brooklyn University, argues that business method patents are “thrust into a vibrant, established process of competitive commercial rivalry, a process that has traditionally been governed by emulation and by customary practices. An added perverse result of this intrusion is the incentive for some entrepreneurs to become collectors of patent royalties,

²⁹ *Supra* note 19.

rather than to continue as active participants in the marketplace. If the boom in business method patents continues at its accelerating pace, the so-called superhighway of electronic commerce could be partially converted into a toll road.”³⁰

As of now there is no international convention or any other kind of agreement regarding whether business methods should be considered as a patentable subject,³¹ the issue thus completely rests with domestic laws of an independent jurisdiction. To illustrate this, for instance, Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) Article 27.1. only provides that in principle, “Patents shall be available for any invention, whether product or process, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application.”³² Article 27.2 and 27.3 do not expressly provide the exclusion of business methods in general from patentability and there is no further definition of the terms “invention” and “technology”.

Among different types of patents, business method patents are inherently of higher value of commercial utility and implementation rate. Unlike traditional technology patents, which usually are driven by researchers who are not necessarily aware of current trends of practical utility, business method patents are almost always derived from and driven by successful business practice, thus are inherently commercially viable.

It can be argued that the emergence of the issue of patenting business methods is largely spurred by the new economy of Internet related E-commerce. Studies on business method patents are like viewing a kaleidoscope: although balancing the interests between the public and the

³⁰ Leo J. Raskind, “The State Street Bank Decision: The Bad Business of Unlimited Patent Protection for Methods of Doing Business” (1999) 10 Fordham I.P., Media & Ent. L. J. 61 at 66.

³¹ European Patent Convention (EPC) provides requirements for patentable subject matter in Article 27, 29 and 52, however it is not an international agreement in true sense, but only is at most a regional agreement.

³² Agreement on Trade-Related Aspects of Intellectual Property Rights. (15 April 1994) online: WTO <http://www.wto.org/english/tratop_e/trips_e/t_agm0_e.htm>.

rights holders is a perennial effort, each turn of view allows you a unique scene, which provides a fantastic knowledge and insight into the social change, technology innovation and economic advancement of the society at the time. In the following chapters I will discuss and focus on two distinct countries, where patenting business methods arguably has more significance to the whole world.

Chapter 2 A Comparative Study of the Business Method

Patenting in the United States and in the People's Republic of China

Both in the U.S. and in China, the logic for granting a patent (business method patents or de facto business method patents are included) is basically the same: First the claim in the patent application must fall into statutory patentable subject matter categories, if not then the application is rejected; passing this initial examination then the application enters into substantive examination. Both in the U.S. and in China, requirements for patents are explicitly prescribed in their patent acts, however for the U.S., precedents flesh out the detailed scopes and tests while in China the Implementing Regulations of the Patent Act of the People's Republic of China promulgated by the State Council somehow serves as the explanatory role. Both in the U.S. and in China, patent administrative authorities set rules determining operational details of implementation of the laws. Both in the U.S. and in China, federal governments (or central government in China) enjoy exclusive jurisdiction over granting patents. Having said that, many of the norms, scope, doctrines or even fundamental concepts are quite different in the two countries. In this Chapter I will follow these logics and go through functional cores in the two countries to examine and compare the doctrines and practices regarding business method patenting.

2.1. A Comparison of the Legal Terminologies Relevant to the Business

Method Patenting in the Theory and Practice of the Two Countries

In order to make the comparison more effective and relevant, there is a need to first align the terminologies that are underpinnings of the topic. As far as patenting business methods are

concerned, I have identified a number of paired terminologies which are similar in function but differently phrased, similarly phrased but substantially different in meaning, in the two countries. These include: some of the taxonomy of patents in the two countries (e.g. utility patents in the U.S. are quite different from the “utility model” patents in China), the conception of inventiveness v. non-obviousness, and most importantly, the terminology of “business method patent” itself. In this section I will just compare the differences, but not go into too much details of the doctrinal analysis, which will be left to later sections.

2.1.1. Taxonomy of Patents in the Two Countries

In the U. S., patents are classified into three categories: plant, design and utility.³³ The utility patents protect inventions, chemical formulas and other discoveries. Business method patents are a type of utility patent in the U.S.

In the PRC the patents are classified into: invention, utility model and industrial design.³⁴ Here it is important to note that although both in the U.S. and in China there are “utility (model)” patents, they are not the same. China’s utility model patents in fact correspond to the U.S. “improvement” patent, i.e. some improved products or methods building on the previous fundamental inventions.³⁵ Because in China utility model patents only protect “the shape, structure or their combination of a product” rather than a process, they are not applicable to business methods. Under the patent system in PRC, business methods can only be protected under invention category.

³³ Louis S. Sorell, “A Comparative Analysis of Selected Aspects of Patent Law in China and the United States” (2002) 11 Pac. Rim L. & Pol’y J. 319.

³⁴ See Patent Act of the People’s Republic of China (Amended in 2008), s. 2, “The ‘inventions and creations’ as referred to in this Law shall mean the inventions, utility models and designs. The invention shall mean the new technical solution to a product, a process or an improvement thereof. The utility model shall mean the new technical solution to the shape, structure or their combination of a product, which is fit for utility. The design shall mean the new design of the shape, pattern, or their combination of a product, and the combination of the colour, shape and pattern of a product, which is aesthetic and fit for industrial application.”

³⁵ *Supra* note 33.

2.1.2. Inventiveness v. Non-obviousness

In the U.S. Patent Act the term “non-obviousness” is employed in Section 103, meaning that someone who has “ordinary skill” in the art could not easily think of it.³⁶

In the PRC, its Patent Act Section 22 provides, “The inventiveness shall mean that, compared with the existing technology, the invention has prominent and substantive features and represents a marked improvement, or the utility model possesses substantive features and represents an improvement.”³⁷

As we can see, although phrased differently, the fundamental principle of “non-obviousness” and “inventiveness” are basically the same.

Because non-obviousness (inventiveness) is a crucial substantive requirement for granting a patent and contains many cases and tests, further details of this comparison will be left to the next section of this chapter.

2.1.3. The Concept of “Business Method Patents”

As noted in the Introduction of this thesis, the definition of the business method patents has never been unanimously agreed upon. This discrepancy manifests itself at different levels in the two countries.

Literally the term “business method patent” gives off a sense that any method having a commercial significance has a potential to be patentable. This is misleading, considering that the term has never fully, as of yet, attained its literal definition in either of the two countries. However the U.S. is closer than China to the attainment of the literal definition of “business method patent”.

³⁶ *Patent Act*, 35 U.S.C. §103 (1790).

³⁷ *Patent Act of the People’s Republic of China* (Amended in 2008), s22.

In the meantime, “technical character”, an implicit element in the term of business method patent, has always played a crucial role, although to a varying degree among different countries. In the U.S., for instance, as a patent lawyer argued in his article, an overnight delivery scheme itself may not be patentable due to a lack of technical character, but a system (technical embodiment) that computes “fees based on how far a package travels and when it arrives” has the merits of potential patentability.³⁸ Generally speaking, the PRC excludes any “business method patent” that lacks “technical character”. The specific requirements for statutory patentable subject matter will be analyzed in the following sections of this Chapter.

It is interesting to note that in China there seems to be a consensus that “business method patents” and “software patents” can be used interchangeably. Leading Chinese patent scholars almost always consciously mix up the definition of the business method patent and the software patent, and defend this by stating that in China all the granted business method patents and the majority of the new business method patent applications are software-related, hence the term “software-related business method patents”³⁹. Such misattribution has systematically narrowed down the scope of business method patenting, and is readily aligned with the patent authority’s will in China. Government publications tend to adopt a stance that reconciles such confusion, for example, by pointing out “Business method patent, also business model patent is called business method software patent as well because most business method patents are combined with computer software.”⁴⁰ In China, generally speaking both among the academia and practitioners the term “business method patent” is largely confined to the more tangible domain. China’s

³⁸ See “Method of exercising a cat”, U.S. Patent No. 5443036 (2 November, 1993). See also Frank S. J., “The death of business-method patents” (2009) 46 Spectrum, IEEE 32.

³⁹ Yurong Zhang & Xiang Yu, “The Patent Protection for Business Method Inventions in China” (2008) 30 E.I.P.R. 412.

⁴⁰ China International Electronic Commerce Center, “Principles of examining business method patent application”. online:< <http://www.chinaipr.gov.cn/Guides/patent/guidance/241156.shtml> >.

conservative definition of the term business method patent reflects a restrictive orientation in its legislative intent.

In the sphere of patent theory, some Chinese scholars believe that in China now, it is not appropriate to accept business methods as a patentable subject matter. This viewpoint holds that: behind the issue of whether to grant business method patent protection lies a huge national interest, which is the reason why developed countries, the U.S. in particular, are trying to expand their patentable subject matter. They are not only strong in technology, but also in their commercial business and service industries. For them the consequence of adopting the business method patents is that it makes their own domestic companies more protected.⁴¹ The author of the book entitled “Business Method Patent”, Yi Huang and Long Yin are two government officials in the China Banking Regulatory Commission. Their views largely reflect the mainstream thoughts from the standpoint of China’s domestic banking sector. These scholars’ opinions have an influence on China’s legislation and policies.

2.2. A Comparison of the Laws between the Two Countries at the Legislative and Judiciary Level

2.2.1. The United States— The Official Birthplace of the Business Method Patent

In the United States, generally speaking, there is broader scope for the patentable subject matters than most other countries in the world, reflecting a policy orientation that emphasizes proprietary ownership of intellectual products. For a comparison, Japanese patent system was designed generally with a narrower scope for the patentable subject matter, reflecting a different

⁴¹黄毅 & 尹龙, *商业方法专利* (Beijing: China Finance Press, 2004) [Huang, Yi & Yin, Long, Business Method Patent, title translated by Niu, Jinghui].

legislative intent to promote sharing and disseminating of the invention and innovation.⁴² This unique environment lies in the very heart of the U.S. statute, and further developed through jurisprudence of case laws.

While the United States has its statutory patent law, the U.S. Court's precedents have always played a decisive role as far as the patent law is concerned. In the U.S. patentable subject matters are prescribed by the statute, while exceptions are set by case laws. Aside from subject matter's eligibility requirement, in order to acquire a patent a U.S. claim must also pass three substantive tests, namely utility, novelty and non-obviousness, as well as disclosure obligations, which respectively correspond to Section 102, 103 and 112.⁴³ For the purpose of comparison, one would find that these requirements are expressly stipulated in the PRC's patent statute also.

2.2.1.1 Major Functional Cores of Business Method Patenting in Statute and Case Laws

Patentable Subject Matter

The U.S. *Patent Act* section 101 provides that “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.”⁴⁴ It is worth noting that in the U.S. patent statute there is no “technical effect” or “technical contribution” requirement. Business methods may qualify as a statutory “process” under the U.S. *Patent Act* section 101. However, whether a method claim satisfies the requirements for patent-eligible subject matter is still subject to case law and, to some extent, the

⁴² *Supra* note 9.

⁴³ *Patent Act*, 35 U.S.C. §102, 103, 112.

⁴⁴ *Patent Act*, 35 U.S.C. § 101.

USPTO's Guidance for Examining Process.

According to precedents of the U.S. Supreme Court, laws of nature, natural phenomena or abstract ideas are not patentable subject matters. If the scope of the claims is not the laws of nature itself, but the implementation of the laws of nature in a particular way, then it falls into the category of patentable subject described in section 101.

How to determine the scope of a patent application claim and tell whether it is an implementation of the laws of nature or it is indeed the laws of nature itself? The Supreme Court established a so-called “machine-or-transformation” test consisting of two criteria. Satisfying either of these two will result in the application being deemed to have met the requirement of Section 101. The first test provides that the claims and the specific procedures described should be tied to a particular machine or apparatus. The second test provides that the claims and the procedure described should transform a particular article to a different state or thing.⁴⁵ These two standards have been imposed on the scope of the claims in order to limit it and ensure that the patent grant points to the implementation of the laws of nature, rather than the laws of nature itself. After *Bilski*, this test is currently becoming dominant. More details will be discussed in the later section.

It is worth noting that, there was a failed legislative attempt to clearly define the subject matter business method patents. In the Business Method Patent Improvement Act of 2000 the term “business method” is defined as

“(1) a method of

(A) administering, managing, or otherwise operating an enterprise or organization, including a technique used in doing or conducting business; or

⁴⁵ *Gottschalk v. Benson*, [1972] 409 U.S. 63. *Parker v. Flook*, [1978] 437 U.S. 584. *Diamond v. Diehr*, [1981] 450 U.S.175.

(B) processing financial data;

(2) any technique used in athletics, instruction, or personal skills; and

(3) any computer-assisted implementation of a method described in paragraph (1) or a technique described in paragraph (2).”⁴⁶

If this Bill had passed, this would have been the first statutory description concerning BMP as a patentable subject matter. However, this bill did not pass the congress.

Substantive Requirements

Eligible subject matter is only the first hurdle for any patent applications, including BMPs. In order to acquire a patent, an application must also meet statutory requirements of novelty, non-obviousness and utility.

The Novelty Requirement:

Article 102 of the U.S Patent Act prescribes that:

“A person shall be entitled to a patent unless—

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent, or

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, or

(c) he has abandoned the invention, or

(d) the invention was first patented or caused to be patented, or was the

⁴⁶ *Supra* note 12.

subject of an inventor's certificate, by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application for patent or inventor's certificate filed more than twelve months before the filing of the application in the United States, or

(e) the invention was described in—

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for the purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language; or

(f) he did not himself invent the subject matter sought to be patented, or

(g) (1) during the course of an interference conducted under section 135 or section 291, another inventor involved therein establishes, to the extent permitted in section 104, that before such person's invention thereof the invention was made by such other inventor and not abandoned, suppressed, or concealed, or

(2) before such person's invention thereof, the invention was made in this country by another inventor who had not abandoned, suppressed, or concealed it. In determining priority of invention under this subsection,

there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.”⁴⁷

The above subsections can be generally grouped into two categories. The first category addresses the conditions where the novelty is not met due to another party’s actions, including (a), (e) and (g). The second category, including (c), (d), addresses the conditions where the novelty is not met due to the applicant’s own actions. Subsection (b) falls under both categories. Subsection (f) prescribes that in the U.S, only the inventor himself can apply a patent, anyone else is not eligible.

For any BMP applications, only when they do not fall into any subsections prescribed above, can they possibly acquire a U.S. patent.

The Non-obviousness Requirement and Graham Test

Article 103 of the U.S. Patent Act stipulates the “non-obviousness” requirement. In the U.S., the non-obviousness requirement is largely derived from case law, namely the Graham test. For a BMP application, the non-obviousness requirement is applied the same as with other types of patents.

An application does not meet non-obviousness requirement if the differences between it 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.”⁴⁸ Specifically, the Graham test is applied to examine: (1) the scope and content of the prior art; (2) the level of ordinary skill

⁴⁷ *Patent Act*, 35 U.S.C.A. § 102.

⁴⁸ *Patent Act*, 35 U.S.C.A. § 103(a). See also *Graham v. John Deere Co. of Kansas City*, [1966] 383 U.S. 1, 86 S. Ct. 684, 15 L. Ed. 2d 545; *WMS Gaming, Inc. v. International Game Technology*, [1999] 184 F.3d 1339, reh’g denied, in banc suggestion declined.

in the art; (3) the differences between the claimed invention and the prior art; and (4) objective evidence of non-obviousness.⁴⁹

Apart from these statutory and judicial requirements concerning non-obviousness, the USPTO also has published some supplementary guidelines to illustrate Article 103. In 1996 the USPTO issued the Examination Guidelines for Computer-Related Inventions. This guideline stresses the difference between “functional descriptive material” and “non-functional descriptive material”.⁵⁰ “functional descriptive material” refers to the codes in software that carry out core functionalities of that software, while “non-functional descriptive material” refers to the auxiliary part of the codes. For example, for some computer games, “non-functional descriptive material” could be music, graphical cartoon or player’s database, etc. If an application only differs from prior art in “non-functional descriptive material”, then it should be deemed as obvious.

The Utility requirement:

Unlike China, the U.S. does not put the utility requirement into a separate article in its Patent Act. Instead, the utility requirement is inherent in Article 101, along with other leading cases. The Article 101 states, “whoever invents or discovers any new and useful process, machine, manufacture, or any new and useful improvement thereof, may obtain a patent therefore, subject to the conditions and requirements of this title.”⁵¹ According to the leading case, a patent is deemed to satisfy utility requirement if it “may be applied to a beneficial use in society, in contradistinction to an invention injurious to the morals, health, or good order of society or frivolous ...”⁵²

⁴⁹ *Graham v. John Deere Co. of Kansas City*, [1966]383 U.S. 1, 86 S. Ct. 684, 15 L. Ed. 2d 545.

⁵⁰ USPTO, Examination Guidelines for Computer-Related Inventions, online:<
<http://www.uspto.gov/web/offices/pac/compexam/examcomp.htm>>.

⁵¹ *Patent Act*, 35 U.S.C. § 101.

⁵² *Brenner v. Manson*, [1966] 383 U.S. 519, 86 S. Ct. 1033, 16 L. Ed. 2d 69; *Bedford v. Hunt*, 1817 3 F. Cas. 37, No. 1217 (C.C.D. Mass. 1817) (stating that “[i]t is sufficient, that it has no obnoxious or mischievous tendency, that it

Disclosure Requirements

The U.S. *Patent Act* Section 112 is also relevant to patentable subject matter eligibility. This section requires that any claim in a patent application must be worded and specified in “full, clear, concise, and exact terms as to enable “people skilled in the arts” to make and use it.”⁵³ The purpose of this disclosure and enablement requirement is to preclude excessively broad claims from gaining patent protection. This is not likely to present any significant problem for traditional technological patents, as they are usually very focused on a special technical feature. However, for a process patent, in particular for a business method, this section could be a significant hurdle, as any process is inherently more difficult to describe than a product.

Injunction

When analyzing the U.S. business method patenting system, we should not overlook injunctions. It is well known that BMPs can be used aggressively against competitors. This is particularly true in the U.S., largely credited to the reality that the U.S. injunctions are often used as a potent bargaining chip. From a legal perspective, injunctions are a kind of equitable relief. From a business perspective, however, this relief or remedy is so sought-after as a result of a business-method-patent lawsuit, only because blocking a competitor’s operation can be a crippling blow to the competitors and of more significance than claiming monetary damages.

Injunctions in patent lawsuits had been generously granted by U.S. courts. “Since the 1980s, courts could almost automatically issue permanent injunctions once infringement and validity were found.”⁵⁴ After *eBay* case, however, odds began turning against plaintiffs.

may be applied to practical uses, and that so far as it is applied, it is salutary.”). See also *Lowell v. Lewis*, 1817 15 F. Cas. 1018, No. 8568 (C.C.D. Mass. 1817).

⁵³ *Patent Act*, 35 U.S.C.A § 112.

⁵⁴ Steve Seidenberg, “Troll control: The Supreme Court's eBay Decision Sets Back Pesky 'Patent Trolls' or American Innovation, Depending Upon Which Side You're On” (2006) 92 ABA Journal, 50.

The opinion by Justice Clarence Thomas ruled that a four-factor test must be met in order for an injunction in a patent infringement case to be granted: “(1) that it has suffered an irreparable injury; (2) that remedies available at law, such as monetary damages, are inadequate to compensate for that injury; (3) that, considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (4) that the public interest would not be disserved by a permanent injunction.”⁵⁵

Specifically concerning BMPs, the concurrence of Justice Anthony M. Kennedy stressed that certain types of patent lawsuits require more scrutiny, and that these patents may require courts to deny injunctions against infringers. “Kennedy's concurrence, joined by Justices John Paul Stevens, David H. Souter and Stephen G. Breyer, indicated that it could well be appropriate to deny injunctive relief if the plaintiff's patent:

- Is a business method patent.
- Is just a small component of a much larger product that the defendant makes.
- Is owned by an entity that ‘use[s] patents not as a basis for producing and selling goods but, instead, primarily for obtaining licensing fees.’”⁵⁶

⁵⁵ *eBay Inc.v.MercExchange,L.L.C.*, 2006 547 U.S.388.

⁵⁶ *Supra* note 54.

After the *eBay* case, the district courts have applied the four-factor test methods to all the hearings of the patent infringement cases. U.S. scholars carried out 30 case studies after *eBay* and found that in 23 cases where an injunction was awarded, there were 22 cases in which the patent owner and the infringer were in a direct competitive relationship. At the same time, in 7 cases where injunctions were declined, 5 cases in which the patent owner themselves did not put their patent into industrial use, or the patent owner and infringer were not in a direct competitive relationship, or both. This study indicates a more prudent consideration has been established when it comes to issuing an injunction in the U.S.⁵⁷

2.2.1.2 U.S. Decisive Jurisprudential Developments of Case Law Regarding Patentability and Doctrines Thereof

The U.S. Court's precedents have always played a decisive role in shaping its business method patenting regime. In the U.S., several different tests regarding business method patenting claims have evolved, although up until now there is no single test that prevails at all times. Among others, “useful-concrete-tangible” and “machine-or-transformation” are most relevant to the recent debates surrounding business method patenting issues. I will focus on discussing two most important cases, namely *State Street Bank* and *Bilski*, as well as the key commentators on these two important cases.

A Brief History of the U.S. Jurisprudence Concerning BMPs

For most of U.S. jurisprudential history, there existed a “dark age” for business method patenting. A so-called “business method exception” doctrine dominated the patentability of

⁵⁷ Virginia K. Demarchi, “Injunctions After *eBay* v. Merc Exchange” (2007), online: <http://www.fenwick.com/docstore/Publications/Litigation/Injunctions_After_eBay.pdf>.

business methods for almost a century. This doctrine has been established as early as in 1908, in an influential case *Hotel Security Checking Co. v. Lorraine Co.*, when the court ruled that the bookkeeping techniques are by themselves not patentable.⁵⁸ It was not until the 1980s that the U.S. jurisprudence started gradually shifting its direction towards an increasingly positive stance concerning the patentability of business methods, and finally in 1998 the “business method exception” doctrine was struck out in *State Street Bank*.

Before the dramatic landmark of the removal of “business method exception” doctrine, however, there existed a revolutionary prelude in late 1970s and 1980s, which indeed came from the related area of computer software, an area that often shares the same fate with business method patenting. For a long time, like business methods, computer software also had been regarded as not eligible for patentable subject matter due to its mathematical algorithm nature.⁵⁹ During 1970s and 1980s, a so-called “trilogy of Supreme Court decisions” on the patentability of computer software took place in the U.S.⁶⁰ It could now be speculated that it was the rise of the U.S. own software industry that contributed to the breakthrough in this critical jurisprudence development. In 1981, the United States Supreme Court, through the decision of *Diamond v. Diehr*⁶¹, held that a rubber-curing process incorporating a computer program performing a mathematical formula named “Arrhenius equation”, was not automatically excluded from

⁵⁸ *Hotel Security Checking Co. v. Lorraine Co.*, 1908 160 F. 467. See also Baird, Kevin M., "Business Method Patents: Chaos at the USPTO or Business as Usual"(2001) J.L. Tech. & Pol'y 347.

⁵⁹ See *Gottschalk v. Benson*, 1972 409 U.S. 63. In the *Gottschalk v. Benson* decision the court stated, “Phenomena of nature, though just discovered, mental processes, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work.” See also *Parker v. Flook*, 1978 437 U.S. 584, in which the Supreme Court decided that a mathematical algorithm is patentable only if its application is novel and the mathematical algorithm itself must be deemed as prior art, thus never patentable.

⁶⁰ These three cases are: *Gottschalk v. Benson*, 1972 409 U.S. 63, *Parker v. Flook*, 1978 437 U.S. 584 and *Diamond v. Diehr*, 1981. The *Diehr* case was the ice-breaking one, while the other two were merely restatement of the longstanding algorithm exception rules.

⁶¹ *Diamond v. Diehr*, 1981 450 U.S. 175, 101 S. Ct. 1048, 67 L. Ed. 2d 155.

patentable subject matter under § 101 merely because it employed a scientific truth.⁶² The Supreme Court stated that: “A claim drawn to subject matter that is otherwise statutory does not become nonstatutory simply because it uses a mathematical formula [or] computer program. . . . It is commonplace that an application of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection.”⁶³

In 1998, a landmark case, *State Street Bank & Trust Co. v. Signature Financial Group Inc.*, put an end to the business method exception. This case was a real turning point in the history of BMP jurisprudence and was handed down by a then “pro-patent” court, the Court of Appeals for the Federal Circuit (CAFC). At the time, “the Supreme Court has rendered itself well nigh invisible in modern substantive patent law. The Court of Appeals for the Federal Circuit, created in 1982, has become the de facto supreme court of patents. In those rare patent cases when the real Supreme Court has materialized, the Court has left behind a largely uninspiring jurisprudence.”⁶⁴

This is the brief history prior to *State Street Bank*. Now we focus on the most recent developments.

State Street Bank & Trust Co. v. Signature Financial Group Inc.: “Useful, Concrete and Tangible Result” Test

For almost a century, business methods had been excluded from patentable subject matter by the U.S. courts. Back in 1908, *Hotel Security Checking Co.* established the principle that precludes business methods from receiving a patent, on the ground that business method is

⁶² *Ibid.*

⁶³ *Ibid.*

⁶⁴ See Mark D. Janis, “Patent Law in the Age of the Invisible Supreme Court”(2001) U. Ill. L. Rev. 387.

abstraction, like mathematics formula and gravity, not eligible for patentability.⁶⁵ Ever since then, until the case of *State Street Bank*, this principle of precluding business method had not been seriously challenged, partly due to the fact that there had been an absence of a typical case, upon which the court can set up a new rule.

In the 1998 case of *State Street Bank & Trust Co. v. Signature Financial Group Inc.*, the U.S. Court of Appeals for the Federal Circuit (CAFC) upheld the patent in question and set a precedent that greatly favored business method that lacks a technical character. The patent in question, U.S. Patent 5,193,056 issued in 1993 by the USPTO, was a financial arrangement called “hub-and-spoke” held by Signature Financial Group that enables automated data processing.⁶⁶ State Street Bank initially engaged with Signature in a license negotiation, which was not successful. After that, *State Street Bank*, the plaintiff, applied for this patent to be annulled, on the ground that it does not control physical stuff.

The district court invalidated the patent held by Signature, citing both the long-standing “business methods exception” doctrine, which explicitly states that “business ‘plans’ and ‘systems’ are not patentable.”⁶⁷, and “mathematical algorithm/physical transformation test”.⁶⁸ The court judged that “patenting an accounting system necessary to carry on a certain type of business is tantamount to a patent on the business itself. Because such abstract ideas are not patentable, either as methods of doing business or as mathematical algorithms”⁶⁹

The case was then appealed and the CAFC reversed the ruling by the district court and affirmed the patent. In doing so, CAFC first challenged the applicability of the Freeman-Walter-Abele test, saying that “after *Diehr* and *Chakrabarty*, the freeman-Walter-Abele test has little, if

⁶⁵ *Hotel Seurity Cheeking Co.v.Lorraine Co.*1908 160 F.467 (2d cir.1908).

⁶⁶ *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 1998 149 F.3d 1368 (Fed. Cir. 1998).

⁶⁷ *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 1996 927 F. Supp. 515 (D. Mass. 1996).

⁶⁸ *Ibid.* at 513.

⁶⁹ *Ibid.* at 516

any, applicability to determining the presence of statutory subject matter.”⁷⁰ “[W]hether a claim encompasses statutory subject matter should not focus on which of the four categories of subject matter a claim is directed to ... but rather, on the essential characteristics of the subject matter, in particular, its practical utility.”⁷¹

The key issue here is that CAFC held that the “transformation” does not need to be limited to tangible or physical matter. It reasoned that because the software created a “useful, concrete, and tangible result”, the transformation of the data into a final share price for mutual funds was a result sufficiently tangible for patentability.

Thus the so-called “useful, concrete and tangible result” test was born, which was derived from CAFC’s ruling on the *State Street Bank*, stating “after Diehr and Alappat, the mere fact that a claimed invention involves inputting numbers, calculating numbers, outputting numbers, and storing numbers, in and of itself, would not render it nonstatutory subject matter, unless, of course, its operation does not produce a useful, concrete and tangible result.”⁷² “the transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application of a mathematical algorithm, formula, or calculation, because it produces ‘a useful, concrete and tangible result’ -- a final share price momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades.”⁷³

As for the “business method exception”, the judge of CAFC emphasized that it is “the opportunity to lay this ill-conceived exception to rest... since the 1952 Patent Act, business methods have been, and should have been, subject to the same legal requirements for

⁷⁰ *Supra* note 66.

⁷¹ *Ibid.*

⁷² *Ibid.*

⁷³ *Ibid.*

patentability as applied to any other process or method.”⁷⁴ “whether the claims are directed to subject matter within [section] 101 should not turn on whether the claimed subject matter does ‘business’ instead of something else.”⁷⁵

This case and the doctrine set up through it caused a tremendous impact on patent community. Later in *AT&T Corp. v. Excel Communications, Inc.*,⁷⁶ the CAFC confirmed the *State Street* decision. These favourable decisions towards business method patents encouraged a result of a dramatic increase in patent applications. “Filings for business-related ideas surged fivefold between 1998 and 2000. Actual grants for computer-implemented business patents rose fivefold from 1997 to 2006.”⁷⁷ It is also this decision that widened the legal divide between the United States and the rest of the world. Facing this sudden flood of questionable business method patents, CAFC itself might have also felt uneasy. The U.S. patent community had long been speculating that CAFC was attempting to seek an opportunity to correct its “error”. This might be true, for example, in 2007 in *Comiskey* case the CAFC rejected a “method with the compulsory arbitration to resolve disputes” patent application, on the ground that the method to resolve legal disputes between the parties by an arbitrator falls into the category of thinking activity, which is not a patentable subject matter.⁷⁸ In this background, we can better understand why in the later *In re Bilski* case CAFC reversed the principle established by itself.

Bilski v. Kappos

In 1997, Bernard Bilski and Rand A. Warsaw, two founders of a U.S. resources company,

⁷⁴ *Ibid.*

⁷⁵ *Ibid.*

⁷⁶ *AT&T Corp. v. Excel Communications, Inc.*, 1999 172 F.3d 1352.

⁷⁷ *Supra* note 38.

⁷⁸ See *In re Comiskey*, 2007 499 F.3d 1365, 1368, 1379 (Fed. Cir. 2007).

filed an application to the USPTO⁷⁹; the questionable patent claim involves a method of hedging against risk in commodities trading. According to the court decision text, the Claim 1 of *Bilski*'s patent application read as follows: "A method for managing the consumption risk costs of a commodity sold by a commodity provider at a fixed price comprising the steps of: (a) initiating a series of transactions between said commodity provider and consumers of said commodity wherein said consumers purchase said commodity at a fixed rate based upon historical averages, said fixed rate corresponding to a risk position of said consumer; (b) identifying market participants for said commodity having a counter-risk position to said consumers; and (c) initiating a series of transactions between said commodity provided and said market participants at a second fixed rate such that said series of market participant transactions balances the risk positions of said series of consumer transactions."⁸⁰

The USPTO denied a patent to the applicant on the ground that the claim was not patentable subject matter, stating that "the invention is not implemented on a specific apparatus and merely manipulates [an] abstract idea and solves a purely mathematical problem without any limitation to a practical application, therefore, the invention is not directed to the technological arts."⁸¹

Bilski, the applicant, then appealed to the Board of Patent Appeals and Interferences (BPAI). In September 2006, the Board upheld the decision made by the USPTO, although it also struck out the "technological arts" ground previously held by the examiner. After applying three tests of patentability to the questionable claim, BPAI found that none of them favoring the applicant. The three tests are "transformation" test, the "abstraction" test and the "useful,

⁷⁹ Serial number for the patent application is 08/833,892.

⁸⁰ See *In re Bilski*, No.2007-1130, 2008 WL 417680 (Fed. Cir.Feb.15,2008).

⁸¹ BPAI *Ex Parte Bilski*. decision rejecting the patent application, online: <<http://www.uspto.gov/web/offices/dcom/bpai/its/fd022257.pdf>>.

concrete and tangible result” test, made by the U.S. courts’ precedents.⁸²

In February 2007, this case was brought to the Court of Appeals for the Federal Circuit. CAFC decided to hear the case en banc on October 1, 2007, which indicates a particular care of the court.⁸³ After going through four tests, namely Freeman-Walter-Abele test, useful-concrete-tangible result test, technological arts test, machine-or-transformation test, the Court adopted the machine-or-transformation test, ruling that to be eligible for a patent, a process claim must be tied to a particular machine or it must transform an article into a different state or thing.⁸⁴

CAFC also restated that “Phenomena of nature, though just discovered, mental processes, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work.”⁸⁵

Thus the CAFC affirmed the BPAI’s decision on October 30, 2008. Because machine-or-transformation test prescribes a much narrower scope than does the useful-concrete-tangible result test, and the court said that this ‘machine or transformation’ test is the only test for determining patent eligibility of process claims, CAFC actually annulled its own principle made through the *State Street Bank* case.

In January 2009, Bilski and Warsaw petitioned the U.S. Supreme Court for a writ of certiorari, which was granted on June 1, 2009. Since then, it has been highly expected that the U.S. Supreme Court will take this opportunity to provide a definite and clear test for BMPs, although the case has been pending on writ of certiorari for quite a long period of time.

In November 2009, the United States Supreme Court heard oral arguments in the case of

⁸² *Ibid.*

⁸³ en banc means the case is heard by all of the judges and a written decision is finalized.

⁸⁴ *In re Bilski*, No.2007-1130, 2008 WL 417680 (Fed. Cir.Feb.15,2008).

⁸⁵ See *Gottschalk v. Benson*, 1972 409 U.S. 63 (1972); *Parker v. Flook*, 1978 437 U.S. 584 and *Diamond v. Diehr*, 1981 450 U.S. 175.

Bilski v. Kappos.⁸⁶ News media reports that some justices of the Supreme Court are not satisfied with the restrictive test of machine-or-transformation established as the sole test through this case, and may overturn it in their decision.⁸⁷ During the session the justices raised several hypothetical pure BMPs, such as claims relating to estate plan, tax avoidance, resisting corporate takeovers, choosing juries (Ginsburg, p. 5); processes that help business succeed (Breyer, p. 6); speed dating (Sotomayor, p. 7); teaching antitrust law without students falling asleep (Breyer, p. 9); compiling actuarial tables and their application to risks (Kennedy, p. 11); horse whispering (Scalia, p. 16); and alphabet as a process of forming words (Roberts, p. 22).⁸⁸

On June 28th, 2010, the U.S. Supreme Court finally handed down its long-awaited decision on *Bilski v. Kappos*. The court upheld the decision made by CAFC that the invention in question is not eligible for patenting. All nine justices agreed on the opinion that *Bilski* method was only an abstract idea, which is out of the patentability sphere. However, rather than upholding the CAFC's "machine-or-transformation test", the court went into greater details on precedents "to find the claimed method unpatentably abstract".⁸⁹

However, the Court also warned that they had "more than once cautioned that courts 'should not read into the patent laws limitations and conditions which the legislature has not expressed.' *Diamond v. Diehr*, 450 U.S. 175, 182 (1981) (quoting *Chakrabarty*, *supra*, at 308; some internal quotation marks omitted)." Because in patent law "[u]nless otherwise defined, 'words will be interpreted as taking their ordinary, contemporary, common meaning.'"⁹⁰

Indeed, the U.S. Supreme Court did not provide any test concerning BMPs. It may take

⁸⁶ U.S. Supreme Court, The transcript before the Supreme Court. Online: <www.supremecourt.gov/oral_arguments/argument_transcripts/08-964.pdf>.

⁸⁷ Jess Bravin, "Skeptical Justices Mull Business Method Patent" *Wall Street Journal [Eastern edition, New York]*. (11 November 2009) B5.

⁸⁸ *Supra* note 86.

⁸⁹ "*Bilski v. Kappos*" *Patent Law Blog (Patently-O)* (28 June 2010), online: <<http://www.patentlyo.com/patent/2010/06/bilski-v-kappos-business-methods-out-software-still-patentable.html>>.

⁹⁰ *Bilski v. Kappos* 2010 U.S. Supreme Court 561 U.S. (08-964).

more time for the U.S. to create a definite test for BMPs in its jurisprudence.

2.2.2. People's Republic of China— An Emerging Economy in the Game of Business

Method Patent: Convergent or Divergent?

When comparing China's patent regime with the U.S., it is important to bear in mind that generally the Chinese patent system is a legal implant from the Western. Given this fact one may expect that the patent systems in the two countries would be largely convergent. However, this is not always the case, especially for BMPs.

The laws and statutes applied for conducting the comparative study in this thesis are: *Patent Act of the People's Republic of China* (Amended in 2008), Implementing Regulations of the Patent Act of the People's Republic of China (Amended on January 9, 2010). Because China is a civil law country, there is no case law that is binding.

A Brief Sketch of Three Amendments in History

China has made three amendments to its patent law over the past 25 years, which took place in 1992, 2000 and 2008. It is almost a coincidence that exactly every 8 years there is a major amendment to China's *Patent Act*.

In its young life, China's *Patent Act* has encountered a series of external pressures and internal drives that led to the changes since its inception in 1984.

On March 12 1984, the *Patent Act* was first enacted in China. Shortly afterwards, in 1992, after the grim Sino-U.S. IPR negotiations, China amended its Patent Act to adjust to 1992 MOU. In this amendment, the patentable subject matter was expanded significantly. Article 25 of the new law prescribes that medicine, chemical products, food and drink all became eligible subject

matter.⁹¹

Soon after the amendment in 1992, TRIPS Agreement came along in 1994, making the newly revised version outdated again. Therefore, in 2000, as one of the commitments to TRIPS agreement, China amended its *Patent Act* again, making it conform to international norms better.

More recently, in order to keep up with its fast economic development, and also arguably in an effort to free itself from previous strong influence of the U.S., China decided to revise *Patent Act* again. On December 27 2008, the latest amendment to China's *Patent Act* was enacted. On January 9 2010, the revised Implementing Regulations of the Patent Act of the People's Republic of China was also enacted. If not otherwise indicated, the following part will be dedicated only to the latest version of the laws.

Patentable Subject Matter

Up until now, there is no separate examination standard for applications of the business method type in China, nor is there any "business method exception" as in the U.S. jurisprudence; one cannot identify such an equivalence in Chinese legal documents. Concerning eligible subject matter, the law does provide a number of exceptions. Patent Act of the People's Republic of China (Amended in 2008) Article 25 sub 1, 2 and 3 provide that " No patent right shall be granted for any of the following items: (1) scientific discoveries; (2) rules and methods for mental activities; (3) methods for the diagnosis or treatment of diseases;"⁹² there is no explicit reference to business methods, neither is there any specific category for business method claims. So in theory the standards applied to business method claims are no different than other inventions.

⁹¹ See *Patent Act of People's Republic of China* (Amended in 1992), s.25.

⁹² *Patent Act of the People's Republic of China* (Amended in 2008).

Technical Requirements

The most critical difference between the U.S. BMP regime and China's is that China has its explicit technical requirements on BMP applications. These requirements deserve a thorough analysis.

Article 2 of the Patent Act states:

“The ‘inventions and creations’ as referred to in this Law shall mean the inventions, utility models and designs.

The invention shall mean the new technical solution to a product, a process or an improvement thereof.

The utility model shall mean the new technical solution to the shape, structure or their combination of a product, which is fit for utility.”⁹³

Here “technical solution” should be emphasized. The explicit reference to “technical solution” unequivocally excludes so-call pure business methods, the one lacking technical characters, but if put in the U.S. context would still qualify as patentable subject, from patentable subject matter. If we compare this requirement to the equivalent U.S. doctrine, we will find that the U.S. “useful, concrete and tangible result” test is much broader as it does not require any “technical solution”. Indeed, despite wording difference, what China adopts is quite similar to the U.S. “machine-or-transformation” doctrine, although “transformation” aspect is not as pronounced. Therefore, as far as patentable subject matter is concerned, the U.S. regime has been much more liberal than China. However, now that the U.S. recent *Bilski* case abandoned its previously generous “useful, concrete and tangible result” test, it is fair to say that at the statutory and case law level, the two countries’ BMP systems are convergent.

⁹³ *Ibid.*

It is very important to note that, in its previous version, such technical character requirement was not put into the text of China's Patent Act, but rather in its Implementing Regulations. In the 2006 version of Implementing Regulations of the Patent Act of the People's Republic of China Art. 2, it provides that "'Invention' in the Patent Law means any new technical solution relating to a product, a process or improvement thereof."⁹⁴

This is a major change. Previously, because the Implementing Regulations and Guidelines for Examination are relatively much easier to modify,⁹⁵ it is fair to say that the technical requirement should not have been considered a long term rigid policy ingrained into China's patent regime. At that time China actually enjoyed much flexibility to implement its discretion as to whether to grant a patent to pure business methods in the future or not. To better serve its national interests, it would have been quite possible for China to adopt a more pro-business method patent system in the future, when its own service industry has attained a high status. But now, as this requirement has been put into the Patent Act, it might be a signal that China's legislature has decided to tighten the BMPs examination.

Substantive Requirements

Within China's patent regime, the substantive requirements for patentability are largely similar to the U.S. model. In China's patent statute, there are explicit requirements for the substantive examination of any type of patents, namely novelty, inventiveness and applicability, which also apply to business method patents. Art.22 (2) of the China's Patent Act stipulates novelty requirement. Art.22 (3) stipulates inventiveness, which is the equivalence to the U.S. non-obviousness requirement. As in the U.S., a Chinese patent must also exhibit usefulness,

⁹⁴ Implementing Regulations of the Patent Act of the People's Republic of China (2006).

⁹⁵ Indeed China does modify its laws (including its constitution) and regulations at quite a high frequency by some Western countries' standard.

which is termed “applicability” in Art. 22 (4).⁹⁶ The Article 22 reads as follows,

“Any invention or utility model for which a patent right may be granted shall have novelty, inventiveness and applicability.

The novelty shall mean that the invention or utility model does not fall within the existing technology, and no unit or individual has filed an application for the same invention or utility model at the administrative department of patent under the State Council before the filing date, and records it in the patent application documents published or patent documents announced after the filing date.

The inventiveness shall mean that, compared with the existing technology, the invention has prominent and substantive features and represents a marked improvement, or the utility model possesses substantive features and represents an improvement.

The applicability shall mean that the invention or utility model can be made or used and can produce positive results.

The “existing technology” as referred to in this Law shall mean the technology that has been known to the public at home and abroad before the filing date.”⁹⁷

Disclosure Requirements

For BMPs, due to its abstract nature, the disclosure requirement is usually pivotal for examinations. In the 2008 version of China’s Patent Act, there are two articles dealing with disclosure. Article 26 states:

“When a patent application is filed for an invention or a utility model, a request, a description and an abstract thereof, a claim and other relevant documents shall be submitted.

The request shall state the title of the invention or utility model, the name of the inventor,

⁹⁶ *Patent Act of the People’s Republic of China* (Amended in 2008).

⁹⁷ *Ibid.*

the name and address of the applicant, and other related matters.

The description shall describe the invention or utility model in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art, and drawings shall be required if necessary. The abstract shall describe briefly the technical essentials of the invention or utility model.

The claim shall, on the basis of the description, clearly and concisely define the scope for which protection is sought.”⁹⁸

Article 36 prescribes,

“When requesting substantive examination of an application for an invention patent, the applicant shall furnish reference materials concerning the invention that were available prior to the filing date.

If an application for an invention patent has been filed in a foreign country, the administrative department of patent under the State Council may require the applicant to furnish the materials for that foreign country to make search for the purpose of examining that application or the materials concerning the results of that examination within a specified time limit. If the materials are not furnished within the specified time limit without justification, the application shall be deemed to have been withdrawn.”⁹⁹

Compared to the U.S. system, however, Chinese patent system does not require that the applicant or agent continues to fulfill disclosure requirements on an ongoing basis throughout the examination.

⁹⁸ *Ibid.*

⁹⁹ *Ibid.*

2.3. A Comparison of the Two Countries' Practices at Administrative Level

The patent offices of both the U.S. and the PRC have long established a set of their own examination rules and norms with regards to processing the application files. Such administrative regulations have a great (and sometimes more direct) impact on the shaping of the business method patent. The patent offices in both countries also play similar roles within the context of their respective domestic patent Regime. The following will examine significant aspects of the two countries' patent authorities.

2.3.1. The United States

2.3.1.1. General Stance and (Any Special) Treatment towards BMPs

In its 1994 Examination Guidelines, the USPTO held that “though seemingly within the category of process or method, a method of doing business can be rejected as not being within the statutory classes. See *Hotel Security Checking Co. v. Lorraine Co.*, 160 F. 467 (2nd Cir. 1908) and *In re Wait*, 24 USPQ 88, 22 CCPA 822 (1934). MPEP § 706.03(a) (1994).”¹⁰⁰ During the mid-1990s, there was a turnaround in the USPTO's stance, which was reflected in its modification of Examination Guidelines. In its 1996 Examination Guidelines, the USPTO changed its stance by eliminating the aforementioned phrase and adopted a principle that methods of doing business should be handled with the same criteria as any other process claims.¹⁰¹ This pro-BMP stance finally gave rise to the *State Street Bank* case in 1998.

Even after the *State Street Bank* case, for quite a long period the USPTO still held that “technological arts”, as with traditional patents, must be present in order for a business method patent application to be considered patent eligible. In 2001, the U.S. BPAI endorsed this

¹⁰⁰ 149 F.3d 1368, 47 U.S.P.Q.2d 1596.

¹⁰¹ The United State Patent and Trademark Office, Examination Guidelines (1996) 61 Fed. Reg. 7478 at 7479.

principle in the case of *Ex Parte Bowman*.¹⁰² However, in 2005, a BPAI decision notably eliminated this “Technological Arts” requirement.¹⁰³ In their decision on *Ex parte Lundgren*, the five-to-three majority of the panel of BPAI reversed the rejection, and reasoned that:

“Our determination is that there is currently no judicially recognized separate ‘technological arts’ test to determine patent eligible subject matter under § 101. We decline to create one. Therefore, it is apparent that the examiner's rejection cannot be sustained.”¹⁰⁴

If there is a list counting all the USPTO’s special treatment towards BMPs at the administrative level that contribute to the widening of the regulation gap between the U.S. and the rest of the world, then *Ex parte Lundgren* decision must be at the top of the ranking. USPTO is the minority, if not the only, country that tolerates BMPs without technicality. The recent *Bilski* case is likely to affect this freedom set by *Ex parte Lundgren*.

On March 29, 2000, the USPTO launched its Action Plan for business method patents to “improve the quality of the examination process in technologies related to electronic commerce and business methods”.¹⁰⁵ On 26 June 2007, USPTO announced its Peer to Patent Pilot and later expanded this pilot to business method applications.¹⁰⁶ With these initiatives, the USPTO has gained an advantage in collecting and searching prior arts in a designated field.

2.3.1.2. Classification Concerning BMP Applications

For a long time, whether business method patents should be determined and treated based on the same statutory requirements as any other inventions, or be held as a separated different

¹⁰² *Ex Parte Bowman* 61 USPQ 2d 1669 (Bd. Pat. App. & Int. 2001).

¹⁰³ See Dennis Crouch, “Patent Board Eliminates ‘Technological Arts’ Requirement for Business Method Patents” (2005), online: Patently-O < http://patentlaw.typepad.com/patent/2005/10/patent_board_el.html >. See also *Ex parte Lundgren*, 2005 Appeal No. 2003-2088 [BPAI 2005].

¹⁰⁴ BPAI 2005, *Ibid*.

¹⁰⁵ USPTO, White Paper - Automated Financial or Management Data Processing Methods [Business Methods], online: USPTO < <http://www.uspto.gov/web/menu/busmethp/index.html> >.

¹⁰⁶ USPTO, Announcement of Peer to Patent Pilot, 26 June 2007. Official Gazette, online: < <http://www.uspto.gov/web/offices/com/sol/og/2007/week26/patsuba.htm> |USPTO>.

class and treated fundamentally differently, has troubled the USPTO. Up until now, there is no official clarification on this, although there is division of specialties for convenience purposes. The Court, however, has stated that “claims drawn to a method of doing business should not be categorized as a ‘business method’ claim, instead they should be treated like any other process claim.”¹⁰⁷

For examination practice, in the USPTO each patent application is channeled to a designated examiner who specializes in a particular technical field. A business method can be directed to a number of fields for examination. First, U.S. Class 705, the class for “automated business data processing technologies”, is a major field for BMPs. “The majority of business method related applications are filed in this area since the methods and apparatuses claimed in these applications are related to financial and business data processing.”¹⁰⁸ However, Class 705 does not define the boundary of BMPs, as there are other technology fields wherein BMPs can be present. For example, “methods of teaching are classified in Class 434, Education and Demonstration. Methods of playing games are classified in Class 273, Amusement Devices, Games. Methods of improving crop yields are classified in Class 47, Plant Husbandry.”¹⁰⁹

Class 705 can be further divided into four specific aspects of the general business operations¹¹⁰:

- “1. Determining Who Your Customers Are, and The Products/Services They Need/Want:
Operations Research - Market Analysis
2. Informing Customers You Exist, Showing Them Your Products & Services, and

¹⁰⁷ *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 1998 47 USPQ2d 1596, 1604 (Fed. Cir. 1998). See also Wynn W. Coggins, “Prior Art in the Field of Business Method Patents - When is an Electronic Document a Printed Publication for Prior Art Purposes?” (2002). USPTO, online:<
<http://www.uspto.gov/patents/resources/methods/aipfall02paper.jsp>>.

¹⁰⁸ *Ibid.*

¹⁰⁹ *Ibid.*

¹¹⁰ USPTO, White Paper - Automated Financial or Management Data Processing Methods [Business Methods], online: USPTO <<http://www.uspto.gov/web/menu/busmethp/index.html>>.

Getting Them to Purchase: Advertising Management, Catalog Systems, Incentive Programs, Redemption of Coupon

3. Exchanging Money and Credit Before, During, and After the Business Transaction: Credit and Loan Processing, Point of Sale Systems, Billing, Funds Transfer, Banking, Clearinghouses, Tax Processing, Investment Planning

4. Tracking Resources, Money, And Products: Human Resource Management, Scheduling, Accounting, Inventory Monitoring.”

2.3.1.3. Organization Structure

Originally, Workgroup 2760 of the USPTO was “responsible for examining patent applications in business related data processing methods and technologies, Class 705.”¹¹¹ However, for the purpose of improving examination quality, a series of initiatives involving organization structure have been introduced over recent years.

In USPTO, Patent Examiners are divided into different Group Art Units, which is “a working unit responsible for a cluster of related patent art” and “staffed by one supervisory patent examiner (SPE) and a number of patent examiners who determine patentability on applications for a patent.”¹¹² A Group Art Unit is denoted as “Patent Technology Center” plus a four-digit number. After the introduction of Peer-to-Patent project in 2007, BMP applications are currently handled by Technology Center 3600 (TC 3600). In order to facilitate public accessibility to the examination information, TC 3600 has established an official “Technology Center 3600's Business Method Web Site”, which is “specifically designed to provide you with

¹¹¹ *Ibid.*

¹¹² United States Patent and Trademark Office, Patent and Trademark Glossary, online: USPTO < <http://www.uspto.gov/main/glossary/index.html> >.

current information on Business Method-related patent issues.”¹¹³ TC 3600 also recruited a Business Practice Specialist¹¹⁴, to assist in its business-related judgments.

In its organizational structure, the USPTO has a separate administrative body called the Board of Patent Appeals and Interferences (BPAI), which is responsible for reexamination and decision on contested patent applications previously rejected by the USPTO’s examiners.¹¹⁵ Occasionally, rejected cases involve patentability issue. Decisions of the BPAI can be further appealed to the United States Court of Appeals for the Federal Circuit (CAFC) under 35 U.S.C. § 141.¹¹⁶ In theory, if an applicant is dissatisfied with the result made by CAFC, they can appeal further to the United States Supreme Court.

Compared to China, there is a unique feature in the U.S.’ patent application procedure, namely the “prosecution history”.¹¹⁷ This history provides a record of communications between examiners and patent applicants that can be publicly accessed. This mechanism helps the public better access the information as to the scope of a patent in question. China has not yet established such a mechanism in its patent system.

2.3.1.4. Prior Arts Search

With business method patent examination, a particularly difficult challenge is the prior arts search, due to its more abstract nature. Many critics of BMPs contend that many abstract methods actually do not satisfy the novelty requirement, yet had been granted patent because of a lack of knowledge on the patent examiner’s part about the existing prior arts. As one of

¹¹³ United States Patent and Trademark Office, Patent Business Methods, online: USPTO<<http://www.uspto.gov/patents/resources/methods/index.jsp>>.

¹¹⁴ United States Patent and Trademark Office, Technology Center 3600 Business Methods List of Contacts, online:USPTO <<http://www.uspto.gov/patents/resources/methods/contact.jsp>>.

¹¹⁵ See USPTO, U.S. Manual of Patent Examining Procedure (MPEP) (2008).

¹¹⁶ *Ibid.*

¹¹⁷ *Supra* note 33.

USPTO's specialist puts "It can be extremely difficult to identify business methods that may have been common practice or common knowledge in an industry, but have not been documented properly, nor dated, nor disclosed in a form that is easily accessible by patent examiners."¹¹⁸ This is particularly true in today's computer age, with so many different business processes churning out every day. That specialist points out, "Industry and patent practitioners have voiced concerns about the availability of prior art and the quality of the searches being performed in these emerging technology areas."¹¹⁹

In the USPTO's practice, prior arts are generally classified as two broad categories: published patents and non-patent literature (NPL). The published patents are searchable through USPTO's own Automated Patent System (known as EAST and WEST)¹²⁰, which tracks more than six million patents issued since 1790.¹²¹ NPL is facilitated by Electronic Information Center (EIC), which includes nearly every commercially-available database of scientific literature.¹²² For BMPs examination, NPL includes not only professional journals, magazines, and conference proceedings, but also extends to textbooks, newspaper articles, and even sales brochures. Examiners can search over 900 Commercial Databases of NPL.¹²³

NPL has been an emphasis and challenge, since there are limited Previous Patents on the same or similar topics. USPTO has regularly published core NPL databases searched by the business method examiners and leaves the door open to public comment. This mechanism helps USPTO keep current on relevant databases of the technology of Class 705.

¹¹⁸ Wynn W. Coggins, "Prior Art in the Field of Business Method Patents - When is an Electronic Document a Printed Publication for Prior Art Purposes?" (2002) online: USPTO < <http://www.uspto.gov/patents/resources/methods/aipfall02paper.jsp> >.

¹¹⁹ *Ibid.*

¹²⁰ *Ibid.*

¹²¹ Ian Ramage, "Patenting Innovation: Intellectual Property Rights in the New Economy" (2002), online: UBC Library < <https://circle.ubc.ca/handle/2429/12210> >.

¹²² *Ibid.*

¹²³ *Supra* note 118.

2.3.1.5. A Glimpse into Examples of USPTO’s Issued Business Method Patents

The USPTO provides a rich repository of diversified examples of business methods being patented, which is ideal for case studies. This section selects some typical representatives to show the rough shape of U.S. BMP in the real world, delineating BMP prior arts.

Take U.S Patent 6,978,253 as an example of U.S. Class 705 “Incentive Programs”. This patent protects a business method of online dynamic pricing. Specifically, it protects a business model that is “for conducting business transactions over the Internet, allowing buyers to reduce the price of the selected product/service based on buyer’s performance during a collateral activity. Sellers offer the product/service within a specified price range, and buyers accept the offer, in exchange for the opportunity to close the transaction at the lowest price offered by achieving a high score during the collateral activity.”¹²⁴ This patent was filed on June 29 1999, which means until 2019 such a business method will be held inviolate. The application of this patent is very broad. Dynamic pricing is a fundamental breakthrough in online E-commerce. This patent covers a range of potential online models, including online auctions, e-commerce, online games, and more. Almost any activity involving competition and entertainment can be used as the pricing scale.

U.S. Patent 5,948,061 is an example of U.S. Class 705 “Advertising Management”. This patent is on “Methods and apparatuses for targeting the delivery of advertisements over a network such as the Internet”.¹²⁵ “Statistics are compiled on individual users and networks and the use of the advertisements is tracked to permit targeting of the advertisements of individual users. In response to requests from affiliated sites, an advertising server transmits to people

¹²⁴ “Systems and methods for transacting business over a global communications network such as the internet”, U.S. Patent No. 6978253, (20 December 2005).

¹²⁵ “Method of delivery, targeting, and measuring advertising over networks”, U.S. Patent No. 5948061 (7 September 1999).

accessing the page of a site an appropriate one of the advertisement based upon profiling of users and networks.”¹²⁶

The U. S. Patent 7,711,653 is a recent example of U.S. Class 705 “Operations Research - Market Analysis”. This patent is held by Amazon Technologies, protecting “A system, method and computer-readable medium for facilitating customer service feedback utilizing embedded feedback links” which involving “A consumer generates an inquiry to a service provider. The service provider generates a responsive communication that includes at least one feedback link embedded within the response communication. The consumer can manipulate the feedback link to instantiate a variety of actions, including the escalation of the consumer inquiry.”¹²⁷

2.3.2. P.R. China

2.3.2.1. General Stance and Treatment towards BMPs

In China, all patent applications are currently processed and examined by the State Intellectual Property Office (SIPO), which is the equivalent to the USPTO.

Part II, Chapter 9 of SIPO’s Guidelines for Examination (2006) ¹²⁸provides that “an invention application relating to computer programs is the subject matter of patent protection only if it constitutes a technical solution”, “...if the solution of an invention application relating to computer programs involves the execution of computer programs in order to solve technical problems, and reflects technical means in conformity with the laws of nature by computers running programs to control and process external or internal objects, and thus technical effects in

¹²⁶ *Ibid.*

¹²⁷ “System and method for facilitating customer service utilizing embedded client feedback links”, U.S Patent No. 7711653(4 May 2010).

¹²⁸ SIPO recently launched a newer version of The Guidelines for Examination (2010), which came into force in February 1st, 2010. However, with regards to business method patents, the newer version does not change anything. Due to difficulties in access to the newer version from our library, this thesis will still be discussing the 2006 edition.

conformity with the laws of nature are obtained, the solution is a technical solution as provided for in Rule 2.1 and is the subject matter of patent protection.”¹²⁹ The examination rule set up here, combined with China’s Patent Act Art 2 and Art. 25, clarifies the Chinese version of business method patent test, which is basically very similar to the machine aspect in the U.S. “transformation-or-machine” test.

On SIPO’s official website, there is a comment regarding BMPs. Although the statistics in it are somehow outdated, this comment does provide a general stance towards BMP applications held by SIPO. In this comment SIPO states, “While there is no separate examination standard for applications of the business method type in China, the standard for applications of computer programs applies to the type.”¹³⁰ This comment also suggests the examination criteria for business method applications:

“(1) When the subject matter of the application only involves business method as such (pure business method) and consequently there is no technical character, the subject matter belongs to rules and methods for mental activities. Therefore no patent shall be granted.

(2) When the subject matter involves the business methods executed through the adoption of technologies such as network or computer, it is required to determine whether the subject matter ‘adopts technical means, resolves a technical problem and creates a technical effect’.”¹³¹

Another helpful hint coming from SIPO’s official website is a FAQ section concerning patentability; there the issue of software patenting is listed. It states, “An invention containing a computer program may be patentable if the combination of software and hardware as a whole can really improve prior art, bring about technical results and constitute a complete technical

¹²⁹ The State Intellectual Property Office, The Guidelines for Examination (2006), online: SIPO <[http://www.sipo.gov.cn/sipo2008/zlsqzn/guidelines2006\(EN\).pdf](http://www.sipo.gov.cn/sipo2008/zlsqzn/guidelines2006(EN).pdf)>.

¹³⁰ SIPO, “Patent Protection of New Technologies” (2009), online:<http://www.sipo.gov.cn/sipo_English/news/official/200904/t20090417_453512.html>.

¹³¹ *Ibid.*

solution.”¹³² The rationale stated here can also be applied to BMPs, as there is no legal barrier between “a computer program” and a business method.

However strict the test may be, there is a large volume of applications for business method patents to SIPO. Many cases were strategically filed to SIPO, reflecting different speculations by market players as to how China's business method patent regime will evolve. As early as late 1990s, many multinational corporations, especially for those financial institutions, have started engaging in deploying their business method patents in China. During this period of time, for example, Citibank has filed 19 business method patents relating to online banking business to SIPO. Between late 2002 and early 2003, SIPO granted the first two "business method" patents to Citibank. The first is a patent for "an electronic money system" (application No. 92113147) and the second is a patent for "a computer system for data management and method for operating said system" (application No. 96191072).¹³³ JP Morgan Chase also filed 10 business method patent applications to SIPO around the same period.¹³⁴ Filing and maintaining a patent portfolio is an expensive enterprise. Given the costs, there are still many applications. This fact proves the strategic importance of business method patent in China.

SIPO, however, is known to be cautious towards this flood of BMP applications. One of the most publicized cases that indicate an even more stringent stance held by SIPO is the recent revocation hearing held by SIPO on Number 96,191,072 business method patent.¹³⁵ Before the hearing closed, Citibank, the patent right owner, surprisingly abandoned all its procedural rights

¹³² SIPO, “Can computer software be patented?” (2009), online: < http://www.sipo.gov.cn/sipo_English/FAQ/>.

¹³³ Ge Bao Cheng, “Patentability of Inventions Relating to Business Method” (2003), 75 China Patents & Trademarks 60.

¹³⁴ *Supra* note 39.

¹³⁵梁宵,“花旗中国专利:踌躇满志登场 稀里糊涂落幕” *China Business Journal* (06 June 2009), online: <<http://www.cbmedia.cn/html/45/n-29745.html>> [Xiao Liang, “Citibank’s Patents in China: In Like a Lion Out Like a Lamb”, title translated by Niu, Jinghui]. See also “Alert 331 China - Revocation of Citibank 'business method' patent” (2009), Rouse, online:<<http://www.iprights.com/content.output/589/589/Resources/Alerts/Alert%20331%20China%20-%20Revocation%20of%20Citibank%20'business%20method'%20patent%20.msp%20x%20>>.

to defend its precious patent that it painstakingly earned previously, leaving this a mystery to the public.

There is a myth regarding China's BMP situation that only the above-mentioned CitiBank's patents have been the officially granted business method patents. Indeed China has granted quite a number of business method patents, which are defined under IPC Class G06F 1760 or G06Q. A survey conducted by SIPO in 2008 indicates that a grant rate of 15% is enjoyed by BMP applications to SIPO (See Figure 2 below).¹³⁶

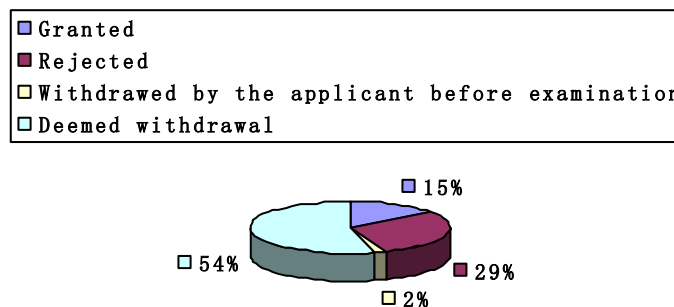


Figure 2 Survey of Legal Status of 706 Patent Applications Filed to SIPO under IPC Class G06F 1760 or G06Q (As of September 2008, Source: SIPO)

2.3.2.2. Classification Concerning BMP Applications

Unlike the USPTO, SIPO does not adopt a different patent classification system of its own. Instead, it uses International Patent Classification (IPC). The latest version is IPC8. BMPs can be found in the following classes: G06F 13/00; G06F 15/00; G06F 15/30; G06F 17/00; G06F 17/30; G06F 17/60; G06F 19/00; G06F 11/00; H04L 9/00; H04L 9/32; H04L 9/30; H04M 3/42. As noted in Introduction of this thesis, the definition of BMPs is narrower under the IPC than USPC.

¹³⁶ SIPO, “我国商业方法专利申请状况及分析”(2009), online: SIPO <http://www.sipo.gov.cn/sipo2008/ztzl/ywzt/zlsd/200812/t20081204_428899.html>. [“An Analysis on China's Business Method Patent Applications”, title translated by Niu, Jinghui].

According to a survey by the SIPO, as of September 2008, a total of 4,487 patent applications under IPC Code G06F 1760 (IPC 7th edition) has been made public, at the same time, a total of 5,848 patent application under the IPC Code G06Q (IPC 8th edition) has been made public. Because there is no overlapping between these two categories, the statistics mean a total of 10,335 business method patent applications are waiting for processing.¹³⁷

2.3.2.3. Organization Structure

Unlike the USPTO, SIPO does not have a separated work unit specialized in BMPs application examinations. A majority of the BMP applications are being processed under its Electronic Department. This underdeveloped organizational structure also reflects China's prudent stance towards business method patenting.

Within SIPO, there is a Patent Reexamination Board, which is the equivalent to the BPAI in the U.S.¹³⁸ If an applicant is not content with the result made by the Patent Reexamination Board, he or she can institute an administrative legal procedure to the designated People's Court, which is Beijing Number One Intermediate People's Court. This legal procedure can be further appealed to Beijing Higher People's Court.

Overall, for SIPO, the practice of BMP application examinations is still in an infant stage. BMP examinations do not have distinct procedures within a distinct department.

2.3.2.4. Prior Arts Search

One of the conspicuous differences between SIPO and USPTO's examination practices is transparency, as there is no single official document released from SIPO that systematically prescribes how the prior art search is conducted in SIPO. After a thorough search, a SIPO's

¹³⁷ *Ibid.*

¹³⁸ *Supra* note 33.

internal training material regarding prior art search was identified, wherein some rules and norms are listed.

According to this document, which is entitled “Patent Novelty Search”¹³⁹, the prior art search in SIPO must include the following:

- 1) Previous patent literature (since 1920) of the eight nations (the United States, Japan, Britain, Germany, France, Switzerland, the former Soviet Union (Russia), South Korea) and the two organizations (the European Patent Office, World Intellectual Property Organization);
- 2) Previous patent literature (since 1920) of all English-speaking, French-speaking, German-speaking, Spanish-speaking countries that do not claim priority rights;
- 3) More than 100 science and technology journals published in the past 5 years;
- 4) Chinese patent literature and China's science and technology journals

Up to the point of this writing, there has been no peer review mechanism established in SIPO, nor has SIPO published any core database list for its prior art search practice.

Compared to the U.S., which requires that prior art in non-publication form, such as use, must be limited to the U.S., China does not require such geographic limitations.

Another tiny yet important difference of prior art search practices between SIPO and USPTO is the time horizon of the prior arts. Because U.S. patent regime is first-to-invent, correspondingly the prior art includes any public knowledge prior to the invention. In contrast, SIPO's practice reflects China's first-to-file regime, which means any public knowledge prior to application will be considered prior art.

¹³⁹贾丹明, “专利新颖性检索” (2008), 国家知识产权局专利局文献部, online: SIPO <<http://www.sipo.gov.cn/sipo2008/wxfw/mfzljzyjspx/mfpxkj/200804/P020080414347918667312.ppt>>. [Danming Jia, “On Patents’ Novelty Search”, title translated by Niu, Jinghui].

2.3.2.5. Case Study on SIPO's Issued Business Method Patents

Although BMPs are much fewer in quantity in China than in the U.S., the case study on them is no less dramatic.

First case is Citibank's patent for "a computer system for data management and method for operating said system".¹⁴⁰ Citibank acquired this patent in 2002. The importance of this business method patent is beyond any doubt. As commented by Zhang Ping, a famous Chinese IP expert and professor of Beijing University, "[It] covers a large range of financial services including insurance, auditing and banking that relate to electronic payment. It is like a time bomb. If the [Citi]bank decided to charge royalties, China's financial industry would suffer a huge cost..."¹⁴¹

Just recently in May 2009, according to the latest news in China Operation Newspaper, on application of the IP centre of China Politics and Law University, SIPO revoked No. 96,191,072 business method patent on the ground that it lacks technicality.¹⁴² As Citibank did not even attend the hearing held by SIPO on April 20th, 2009, many Chinese patent experts guess that it indicates that Citibank has decided to abandon the patent because it has lost confidence in the value of business method patent in China. Since there has been no comment from Citibank, we cannot imagine the reason for certain; however, one thing is certain, compared to the early 2000s, Citibank's passion for applying business method patent in China has become relatively reduced.

This case has left us full of mystery. First, why did Citibank choose to abandon its valuable patent assents? If someone argues that China's strict examination standard predicts a

¹⁴⁰ "A computer system for data management and method for operating said system", Chinese Patent No. 96191072 (10 September 1996).

¹⁴¹ *Supra* note 135.

¹⁴² *Ibid.*

death of business method in China, then one fact may serve as a good counter-example. China's two largest state-owned banks, Industrial and Commercial Bank of China and China Construction Bank, which have more financial support from the Government, have filed the most applications for their business methods.¹⁴³ If China's policy is really heading to put business method patent to death, then why are these state-owned banks so enthusiastic to deploy their business method patent assets? Then why did Citibank lose this piece of valuable IP asset without a minimum effort to defend? Why did it cease to pay annual patent maintenance fees for its other patent for "an electronic money system" (application No. 92113147) several years ago, leading it to expire automatically in 2006? The manager of Citibank in China refused to comment to the public, and so far Citibank has maintained a low-key stance. Without official explanations from Citibank, no one else can answer these questions. However, some conjectures can be made, which might shed light on the future of business method patent in China.

There are a number of conjectures as follows, which are not mutually exclusive. First, due to a previous public media campaign, Citibank's business method patents are already well known to the public and earned Citibank a negative image to the general public. In this situation, charging patent royalties would be difficult and might potentially cause backlash from consumers. Second, the intent for Citibank to deploy these patents at the beginning was merely to secure a spot in a queue, in the speculation that China would one day have adopted a more pro-business method patent stance. Since in 2006 SIPO renewed its Guidelines for Examination without any favorable steps towards business method patent, quite to the contrary it indeed made the standards even stricter, making such a spot in the queue already useless, thus Citibank abandoned its two patents. Third, online payment system is pivotal to both online banking and e-commerce, the stake is too high for the Citibank to give a bitter comment on the loss.

¹⁴³ *Supra* note 39.

More recently, another very important BMP case has attracted much publicity in China. In 2004, SIPO received ZL200480009850.2 patent application, which is a business method patent on a “methods and systems with which telecommunications data transmission operator joins the contents of the telecommunications with number of words”.¹⁴⁴ In essence, this patent is an application of SMS interactive services, which in Europe is called “AQA” (Any Question Answered). Such a business method can also serve as a mobile phone “precision marketing” service, which has widespread applications. On June 17, 2009, the patent was issued by SIPO. The owner of this patent is a Chinese American named Sang-jun Sheng.

As one can imagine, there are potentially a wide range of target defendants for the application of this patent. For example, Chinese central television agency and other media often promote such schemes as: The audience can trigger a specific service or feedback by “Sending xxxx to XXXXX”. Such activities are exactly what this patent protects. Even the Chinese Red Cross sometimes adopts a similar scheme, encouraging the general public to use SMS to make donations. Examples also include some governmental platforms, such as consumers sending text messages to make complaints to market inspectors, or citizens reporting emergency through SMS to the local police station’s 110 service (equivalent to “911” in North America), etc. All of the aforementioned activities are likely to infringe the patent in question.

As expected, soon after the patent was issued, it was involved in a lawsuit. On August 4 2009, plaintiff Feng Sheng Zhong Information Technology Co., Ltd. and Information Technology Exhibition (Shanghai) Co., Ltd., filed a lawsuit against the defendant Li B Industry & Trade Co., Ltd. in Shanghai. Shanghai Second Intermediate People's Court decided to hear the case. The interesting part of this lawsuit is the plaintiff’s choice of the defendant. Due to the

¹⁴⁴ “Methods and systems with which telecommunications data transmission operator joins the contents of the telecommunications with number of words”, Chinese Invention Patent No. ZL200480009850.2 (28 October 2003).

broad claim of the patent, the plaintiff could have chosen a wild number of bigger companies as its defendant. However, to most people's surprise, Li B Industry and Trade Co., Ltd. Shanghai, a small company for the "air-conditioning copper tube" became the defendant. This is largely due to litigation strategy. An unsubstantiated source has disclosed that the defendant company indeed is controlled by the plaintiff, so that the defendant will purposely act stupidly enough to lead the court make the decision that the infringement is established. Then the plaintiff can use this decision to go after other bigger targets.¹⁴⁵

Due to length limitation, the case study is not a focus of this thesis. It should be also noted that in China, under current stringent environment for BMPs, a significant amount of BMP applications are being filed, not for the purpose of acquiring a patent, but rather for the purpose of throwing that business method into public domain and making no one else eligible to patent it in future. If a company thought the idea was obvious and didn't even bother to apply for a patent, later it will run a risk of having to fight off an infringement suit by someone who did acquire a patent on the idea. This also explains why there are still large quantities of BMP applications in China even though a majority of them have been rejected by SIPO.

2.4. Other Factors Influencing Business Methods Patenting

To supplement the above doctrinal analysis of the two countries' business method patenting regime, I have also identified some other factors that affect business method patenting in the researched countries. Among these factors, one is the Patent Cooperation Treaty (PCT), which drives the number of patent application steadily and rapidly. The other factor is the

¹⁴⁵ See “寻址专利遭遇侵权 被告面临高额索赔” *Intellectual Property Protection in China* (6 August 2009), online:< http://www.ipr.gov.cn/alxdarticle/alxd/alxdzl/alxdzlgna/200908/289333_1.html>. [“ ‘target-seeking’ patent infringed, defendants facing high damages”, title translated by Niu, Jinghui]. See also 沈阳, “中国最牛反侵权案开场” *21cbh* (1 September 2009), online: *21cbh.com* < http://www.21cbh.com/HTML/2009-9-1/HTML_8DIYP0Q1G8X5.html>. [Yang Shen, “The Greatest Patent Infringement Lawsuit in China”, title translated by Niu, Jinghui].

robustly growing service industry in the two countries, which contributes and underlies the growth of business method patenting. Public opinion can sometimes influence BMPs in some ways.

2.4.1. Patent Cooperation Treaty (PCT) and Inter-Office Cooperation in Examination

For the domain of Intellectual Property Rights, generally speaking there is a very prominent unification among different jurisdictions. Thanks to various international treaties, notably the Patent Cooperation Treaty (PCT) in 1970 and the WTO's intellectual property regime -- the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) -- in 1994. With the Paris Convention in 1883 already established the right of priority allowing international application easier to some extent, the Patent Cooperation Treaty (PCT) made one further step towards unification. The unification of the patent system at a global level allows much predictability. If an invention is patentable in the United States, it is most likely to be also granted a patent in Europe and Japan by their respective examination standard. However, this unification only holds true for an ordinary patent, it is not the case for the field of new species of the patent categories, e.g. business method patent, where a huge divergence occurred since the first day of its emergence. For example, even between the United States and Japan, who enjoy the similar economic status in the global market, there is considerable discrepancy in respect of business method patentability. In 2001, Japan Patent Office rejected Amazon's business method patent application on the famous "one-click" online purchasing process,¹⁴⁶ which has already been granted a patent in the U.S.

¹⁴⁶ Stephen Lawson, "Japan set to reject Amazon patent" *CNN.com* (15 May 2001), online: < <http://archives.cnn.com/2001/TECH/industry/05/15/amazon.patent.idg/index.html> >.

The dissonance and divergence has caused much inefficiency. To address this, many attempts have been tried. International treaty, in particular the PCT, does have an influence on a country's business method patenting regime in a procedural sense that the PCT patent office search reports can affect the prior art search quality.

The PRC became a member of the PCT treaty on January 1, 1994.¹⁴⁷ According to its guideline, a PCT application consists of two phases. The first phase is the international phase in which a single patent application filed with a "receiving patent office" of a contracting state of the PCT. The second phase is the national phase which follows the international phase in which the previous phase is further pursued by filing necessary documents with the "designated patent offices" of separate contracting states of the PCT.¹⁴⁸ The intriguing aspect of the PCT is its publication mechanism. 18 months after the filing date or the priority date, the application is published by the International Bureau at the WIPO in a variety of "languages of publication" including: Arabic, Chinese, English, French, German, Japanese, Korean, Portuguese, Russian, and Spanish. This publication undoubtedly can be searched by the patent offices, thus has an impact on the prior art search. However, the PCT does not make any specific provision concerning BMPs.

In addition to an international treaty like PCT, other forms of inter-government cooperation also develop rapidly. By the same token, major patent offices in the world have been enhancing their cooperation in the field of prior art search, influencing the business method patenting with an increasing magnitude. As Won-Jung Kim, the KIPO Vice-Chief stated in the Vice Ministerial Consultations in Murnau, Germany, that "international cooperation in patent

¹⁴⁷ Kurt R., "The Patent Cooperation Treaty (PCT) in 1994- A Review of Events and Accomplishments" (1995) 35:3 J. Chem. Inf. Comput. Sci. 451.

¹⁴⁸ World Intellectual Property Organization, The PCT Applicant's Guide (2009), online: WIPO <<http://www.wipo.int/pct/guide/en/>>.

examination became an international trend and will be more successful than ever before.”¹⁴⁹

According to sources, the five major intellectual property offices (IP5, account for about 77% of the worldwide patent applications) which include the United States Patent and Trademark Office (USPTO) and the State Intellectual Property Office of the People's Republic of China (SIPO), have announced that they are seeking to standardize patent examination.¹⁵⁰ The standardization efforts include ten “foundation projects” concerning patent examination as follows:

“Establishing a Common Documentation Database to bring together a common set of relevant patent and non-patent literature from around the world to assist patent examiners in their prior art searches.

Establishing a Common Hybrid Classification System to enable joint and efficient updating of patent classification.

Establishing a Common Application Format by utilizing electronic patent application filing in XML format and subsequently processing and publishing in XML format.

Providing Common Access to Search and Examination Results to enable examiners to find references in the dossier information of other offices, such as search and examination results, and to efficiently conduct priority document exchange (PDX) to reduce applicants' cost of ordering copies of priority documents and the administrative cost of processing such orders.

Establishing a Common Training Policy to standardize the training of patent examiners at each office, helping examiners produce search and examination results of consistent quality.

Establishing Mutual Machine Translation to help the offices overcome the language barrier and allow greater access to each other's patent information.

¹⁴⁹ Jack Eui-Hwan JUNG & Hye Joo MIN, “Standardization of patent examination sought by IP5” (2009) WLNR 23399196 (Westlaw).

¹⁵⁰ *Ibid.*

Establishing Common Rules for Examination Practice and Quality Control.

Establishing a System of Common Statistical Parameters for Examination at the five offices and exchanging information on examination practices under the common rules and parameters.

Establishing a Common Approach to Sharing and Documenting Search Strategies to enable the patent examiners of each office to understand each other's search strategies.

Establishing Common Search and Examination Support Tools to facilitate work-sharing.”¹⁵¹

If the above ten foundation projects are carried out successfully in the future, it will inevitably impact the current business method patenting regime in the two countries because the prior art search quality is being enhanced.

2.4.2. Growing Service Industries in the Two Countries

The service industry, as Donald Rutherford defined in his dictionary “An industry not producing goods but performing various tasks, including transportation, distribution, professional advice, finance. This sector has expanded rapidly in Western countries since 1950...”¹⁵² In terms of International Standard Industrial Classification (ISIC) Rev. 3 services are defined loosely in terms of the following Tabulation Categories:¹⁵³

“- wholesale and retail trade, repair of motor vehicles, motorcycles and personal and household goods (G);

- hotels and restaurants (H);

- transport, storage and communications (I);

¹⁵¹ *Ibid.*

¹⁵² The Dictionary of Economics, s.v. “Service industry”.

¹⁵³ See ISIC Rev. 3.

- financial intermediation (J);
- real estate, renting and business activities (K);
- public administration and defence, compulsory social security (L);
- education (M);
- health and social work (N);
- other community, social and personal activities (O);
- private households with employed persons (P);
- extra-territorial organizations and bodies (Q)."

Note that most of the above mentioned industries have a common trait, they only yield “non-physical output”, which renders them somewhat vulnerable or even at risk under an anti-business-method-patent regime. This might partly explain why the famous consulting company Accenture has been so enthusiastically supporting BMPs. As the service industries continue to grow in the following decades ahead, business method patents can increasingly be strategic assets for firms.

In the U.S., a greater share of GDP is accounted for by the financial sector rather than manufacturing.¹⁵⁴ In the meantime, increasingly, U.S. lead firms have restructured their business to participate in a service industry. Take International Business Machines Corp. (IBM) as an example. In 2005, IBM sold its PC Company Division to China's Lenovo Group Ltd.¹⁵⁵ This illustrates exactly the trend for a U.S. firm to switch from manufacturing in order to focus on “core competence,” in this case business consulting services.¹⁵⁶ According to Mark Loughridge, chief financial officer at IBM, the deal “helps IBM focus on enterprise and SMB [small and

¹⁵⁴ William Milberg, “Shifting Sources and Uses of Profits: Sustaining U.S. Financialization with Global Value Chains”(2008), Proceedings of CEPN/SCEPA conference, University of Paris.

¹⁵⁵ *Ibid.*

¹⁵⁶ *Ibid.*

medium-size business] segments where we can best leverage our value-add.”¹⁵⁷ Online E-commerce has grown rapidly also. In 2004, the Business-to-Business E-commerce (B2B) market size amounted to US\$1821 billion.¹⁵⁸ In 2006, Business-to-Customer E-commerce (B2C) sales are estimated at over US\$200 billion, an increase of 20% versus 2005.¹⁵⁹

The U.S. fast growing service industries, in particular the online E-commerce, have been contributing much to its legal developments. Among others, the BMP system is largely propelled by this growth. What about China then?

In analyzing China’s BMP issues, there is a special sector to be noted, the banking sector. Because China has a huge population base, the market capacity of its online banking service is considered to be potentially vast.

Similar to the U.S., another important aspect of the service industries in China is the growing online E-commerce. Because E-commerce has a conspicuous second-mover advantage, China has been adopting a very positive policy orientation towards the development of it. In April 2005, hosted by Xinhua News Agency, “the eighth China International E-Commerce Conference” was convened. During the session it disclosed statistics on e-commerce in China that it is developing rapidly at an average annual growth rate of 40%.¹⁶⁰

In a word, for both countries, service industries have been a driving force for future patent reforms.

¹⁵⁷ *Ibid.*

¹⁵⁸ See “2004 e-Commerce Multi-Sector Report” (Washington: U.S. Department of Commerce, 2006), online: <<http://www.census.gov/eos/www/papers/2004/2004reportfinal.pdf>>.

¹⁵⁹ See J.Symons, *Online Sales to Surpass\$200 Billion This Year* (Cambridge: Forrester, 2006), online: <<http://www.forrester.com/ER/Press/Release/0,1769,1081,00.html>>.

¹⁶⁰ Demin Dong, *Grid-based Construction of the Concept of E-commerce Application Platform and Software* (Beijing: China. Economy Press, 2004).

2.4.3. Public Opinion towards Business Method Patenting

In the U.S., public opinion has been affecting the shaping of BMP regime in a more direct way. For example, recently the *Bilski* case has invited a number of amicus brief filed to the court. Many market participants from a variety of industries threw in their understanding of how BMPs should be defined. According to sources, IBM, which has acquired many business method patents, filed an amicus brief, stating that the company is now opposed to business method patenting.¹⁶¹ IBM's argument was that the business method patents are not necessary to promote innovation. By contrast, Accenture, a globally leading consulting and technology services firm, vigorously supports business method patents.¹⁶² The picture regarding the U.S. public opinions towards business method patenting is quite complicated and confusing at the moment. As this Chapter is dedicated to descriptively delineate the issue, the in-depth analysis of why certain groups hold certain opinions will be addressed in next Chapter.

In the PRC, the picture is far more monotonous than among the U.S. Public, and even in academia, the opinion towards business method patenting somehow exhibits a pattern of paranoia, which is very susceptible to manipulation by the media.¹⁶³ Many times a strong nationalism sentiment dominated and prevailed. For instance, in 2002 when Citibank had filed 19 business method patents relating to online banking business to SIPO, a Chinese researcher of Beijing International Economy and Trade Institute quickly found out this fact through her research and published her thesis entitled *Intellectual Property Rights of Financial Products*.¹⁶⁴

¹⁶¹ Michael Orey, "Supreme Court to Review 'Business Method' Patents" *BusinessWeek* (1 June 2009), online: [businessweek.com < http://www.businessweek.com/technology/content/jun2009/tc2009061_905686.htm>](http://www.businessweek.com/technology/content/jun2009/tc2009061_905686.htm).

¹⁶² *Ibid.*

¹⁶³ The underlying impetus for this propaganda manipulation and public paranoia is largely due to China's IP policy, which will be discussed in the last Chapter of this thesis.

¹⁶⁴ See 刘景明, "论商业方法、商业方法软件及系统的可专利性——以花旗银行的专利申请为例" (2003), 12 Electronic Intellectual Property 25. ["On the Patentability of Business Methods, Business Software and Related Systems: CitiBank's Application as an Example", title translated by Niu, Jinghui].

This thesis, for the first time, revealed the disparity between the foreign financial institutions and Chinese domestic banks in terms of sheer volume and the importance of their business method patent applications.¹⁶⁵ In her thesis Citibank's 19 applications were analyzed in detail, and immediately attracted huge attention among academia. Soon afterwards, the public media swarmed to the scene and cite the figure and analysis into their report, sending a strong alerting signal to the industry and the public against foreign banking institutions. Shortly later, when SIPO finally granted the first two "business method" patents to Citibank, Chinese public media and interested groups were enraged. Public news media bombarded a series of critique, employing emotionally appealing phrases in their titles, such as "Citibank is deploying traps in China, When will Chinese banks wake up?"¹⁶⁶ "Business Method Patents Secretly Threatening Banking Industry,"¹⁶⁷ etc. Since then the negative attitude towards BMPs has been deeply rooted into the public awareness and has not been reversed up till now.

This comparison of situations substantiates more recent "economic stages theory" by Stefan Kirchanski, which claims that a country's economic status ultimately determines its position in whether or not it provides a strong patent regime.¹⁶⁸ Since China's service industry, although rapidly growing, is still fledgling, its resistance to the business method patenting is understandable. Only when China has developed a robust service industry and its indigenous entrepreneurs have devised more proven successful business methods, such as Google and YouTube, then there will be a less monotonous tone in China.

¹⁶⁵ Although at the time when her paper was published, these applications she studied were still pending at the time.

¹⁶⁶ 王丰 & 马凌, "花旗中国暗布专利暗器 中资银行何时梦醒?" (2002) 南方周末 (5 September 2002). [Feng Wang & Ling Ma, "CitiBank Is Deploying Killer Patents in China, When Will Chinese Bankers Wake Up?" title translated by Niu, Jinghui].

¹⁶⁷ 吴静森, "'商业方法专利'暗迫银行业" (2004), 24 China Internet Weekly 22. [Jingmiao Wu, "Business Method Patents Undermining Chinese Banking Industry", title translated by Niu, Jinghui].

¹⁶⁸ See Stefan Kirchanski, "Protection of U.S. Patent Rights in Developing Countries: U.S. Efforts to Enforce Pharmaceutical Patents in Thailand" (1994) 16 Loy. L.A. Int'l & Comp. L. J. 569.

Notes:

Public opinion towards business method patenting (and more generally towards the patent system as a whole) should not be confined only to the present, but be also examined through the lens of history. One of the most interesting aspects of the patent history is the cyclic anti-patent sentiments and pro-patent passion. Studying these anti-patent movements and related public sentiments in history is undoubtedly helpful in understanding how business method patents affect the society. However, the study on historic public sentiments unavoidably blurs the line between the descriptive and prescriptive analysis. This chapter is dedicated to descriptive studies of the two researched countries. For a broader discussion, a prescriptive section of the studies of historical public opinion towards business method patenting in the Western countries, including the U.S., is deferred to the next Chapter.

2.5. Conclusion to the Chapter

The trend in today's global IP regime is convergence. For example, as a more binding system, TRIPS Agreement sets out minimum standards of patentability for the signatories,¹⁶⁹ further ensuring a convergent global patent system. Today the patent statutes in many jurisdictions look more similar to one another than one century ago, making the patent law one of the most unified legislation around the world. Some scholars are even contemplating a Global Patent System to issue "international patents", under which the territory feature of the Intellectual Property will disappear. Having said that, convergence does exist, especially for emerging patentable subject matters such as business methods.

In the U.S., from a historic perspective, it can be argued that the recent decisions of the *Bilski* case by the CAFC then by the Supreme Court are a normal backlash response, rather than

¹⁶⁹ *Supra* note 32, s. 27 (1).

a death sentence. *State Street Bank* had previously yielded an unintended consequence. The courts are attempting to do some recalibration, while trying not to overdo it.

In comparison to the U.S., the PRC enjoyed a heavily constraining patent regime, with a deliberately tight constraint on BMPs. China does exhibit a reluctance to follow the U.S. step in terms of business method patent. Such a restrictive context may have a potentially harmful effect on its service industries and particularly E-commerce development. For some sectors, such as banking and online e-businesses, BMPs could be decisively significant. Although China's current patent regime does not accept patentability of pure business methods, foreign financial institutions and many Information Technology businesses are still enthusiastic about drafting tricky patent applications circumventing the limit set out by the law.

Through comparison it is fair to argue that at the statutory level the divergence regarding business method patenting between the U.S. and the PRC is not evident, however at the administrative level the practice and norms of the two countries' patent offices are distinctively different. According to economic stages theory, due to the significant difference between the two countries' economic status, the two countries' business method patent regime is understandably disparate.

However the foregoing comparative study only raises more questions. What impact does a divergence of business method patenting regime have on international enforcement, and the global economy? From a micro perspective, what strategy or principle might individual patent owners find helpful in dealing with a divergence in a globalized age, with fly-by-night companies plus anti-business method patent jurisdictions? Apparently this issue involves a major aim to understand what effect particular legal rules have on overall social welfare. One country's patent legislation and policies do have an effect on other countries, thus the perspective should

not be confined within one single country. Bearing this in mind then we may proceed to next Chapter and analyze the rationale underlying the business method patent.

Chapter 3 A Prescriptive Approach to Business Method

Patents: A Sleeping Tiger in a New Era of Economy?

Now that we have descriptively discussed the business method patenting in the two countries, let me take further steps to analyze the rationale behind BMPs and do some speculations as to what fueled the debate over whether business methods should be patentable at all. This Chapter mainly focuses on the U.S. situation, where the issue is most full-blown. However, the basic rationales also apply to other countries.

Before we go into details, let me provide an overview of this Chapter. First, by “prescriptive” it largely means explorative, i.e. to explore some prescriptions to the current BMP problems. To achieve this goal, it will inevitably employ some economics concepts and theory. Like other analysis on an aspect of current legal regime of this kind, “In a nutshell, its main aim is to understand what effect particular legal rules have on overall social welfare.”¹⁷⁰ In this case, the rules concern business method patenting.

Second, by “a sleeping tiger” I refer to unintended (positive) consequences brought by BMPs. This metaphor gives off a sense of huge energy being hidden behind the scene. The unintended consequences, sometimes also being referred to as “spontaneous order” or “hidden order”, is not a completely new concept in economics. Adam Smith stated long ago in his *Wealth of Nations*, that “It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own self-interest.”¹⁷¹ By a similar token, a BMP system is not working as a moral education that leads people to intentionally innovate for the purpose of improving societal welfare, but rather as “an unseen hand” that makes some

¹⁷⁰ Mathias M. Siems, “Legal Originality” (2008) 28 *Oxford Journal of Legal Studies* 147.

¹⁷¹ Adam Smith, *The Wealth of Nations*. (Chicago: University of Chicago Press, 1776).

unintended societal welfare improvements possible. Using this metaphor, I intend to stress that the consequence of allowing BMPs is significant.

Finally, economics principles are metaphysical. Like all metaphysical principles, they cannot be applied correctly completely deprived of their context, which means first a thorough exploration of the subject matter is usually required. With respect to business method patenting, which is a legal problem with significant economic aspects, both law and economics are important aspects.

3.1. What Make Business Method Patents So Controversial

Business method patents do not enjoy any special privileges in terms of duration or enforceability; neither do they consume more societal resources to implement. Why have they attracted so much fire-power from critics of patent system? This thesis lists the following five factors that contribute to the primary reasons for BMPs having been the most vulnerable segment of patent family, namely abstract nature of BMPs, a lack of technical element, pervasiveness and its inevitable consequential overly monopolistic power, practical difficulties in examination, and finally, the reality and future potential of being misused and abused. We will soon examine them respectively in this part.

Indeed, the controversy can be best reflected in the indeterminacy of the legislature and higher level of court decisions regarding defining the scope of BMPs in the U.S. One may wonder that: if it is the case that patenting business methods involves a radical departure from the traditional patent regime, thus unequivocal legislation is required for BMP to be patentable? Yes and no. Yes it is much desirable if a clear and unequivocal legislation can define the scope of BMP. No is because without a prudent definition, rigid legislation can be too risky.

3.1.1. Patenting Laws of Nature, Natural Phenomena and Abstract Ideas

Patenting laws of nature, natural phenomena or abstract ideas have been a focal point which the critics are aggressively using to attack BMPs. All too often the rationale of not patenting something abstract or laws of nature is considered as a given, without deeper consideration or examination of its underpinnings. However, anyone who is looking at issues as revolutionary as business method patenting cannot avoid asking such a fundamental question: why is patenting something abstract or belonging to Mother Nature a taboo? Indeed there are a number of reasons being involved in this seemingly self-evident principle. The following part attempts to capture and summarize them into three different levels.

Take the U.S. as an example,¹⁷² even from a very superficial level, controversy and debate are present in the literal interpretation of certain key phrases. Article §101 of the U.S. patent law states that “any new and useful machine, article, process, or composition of matter” is patentable. In the meantime, a number of leading cases have narrowed down this scope to exclude abstract ideas and laws of nature. However, the linguistic scope of some key words used in legislation and leading cases can often be overlapping, leading to much controversy. As Bronwyn H. Hall pointed out, “It is presumably the shades of difference in meaning between the definition of a ‘new and useful process’ and an ‘abstract idea’ that is the source of the debate surrounding business methods as a suitable subject matter for patentability.”¹⁷³ How to draw a line between a “process” and an “idea”, even if we, for simplicity, eliminate the controversial modifiers such as “new and useful” and “abstract” before them? Indeed, the modifiers of “useful” and “abstract” can sometimes provide some limited degree of clarity, if we are willing

¹⁷² Choosing the U.S. as the example is because the controversies have manifested and been well debated in this country. It is not exclusive though. The same rationale can be applied to other countries too.

¹⁷³ Bronwyn H. Hall, “Business Method Patents, Innovation, and Policy” (2009), Department of Economics, University of California, Berkeley, Working Paper No. CPC03-39.

to take them literally. Because “abstract” ideas standing alone seem to be disembodied concepts or truths which may depart from “useful” from a practical standpoint, i.e., they are not “useful” until put into some practical applications, patenting something purely abstract seems to violate the statutory “useful” requirement in Article 101.¹⁷⁴ However this is only true for literal sense, as one can easily attach an abstract idea to a tangible but general-purpose machine to make the idea useful. In a word, the controversies at the word-for-word level do not seem to be productive in solving the problems of business method patenting.

At a deeper level, beyond the literal interpretations and arguments, there lies a more fundamental conflict bearing on the legitimacy of assigning property rights in particular circumstances, i.e., should those exclusive rights such as a patent be granted for processes that are considered to be “common”? In *Alappat*, the court decided that “Laws of nature and natural phenomena are in essence manifestations of nature (i.e., not “new”), free to all men and reserved exclusively to none,”¹⁷⁵ Put plainly, if something that is not made by you but by Mother Nature, how could you claim property rights on it? This fundamentally economic concern seems to invalidate all the attempts to patent on something abstract, laws of nature or natural phenomena. In the most recent Supreme Court ruling on *Bilski*, the court has made it clear again that an abstract idea is not patentable. The court states that “Allowing petitioners to patent risk hedging would preempt use of this approach in all fields, and would effectively grant a monopoly over an abstract idea.”¹⁷⁶

In my own opinion, however how firmly held that abstract ideas are not patentable, it is

¹⁷⁴ *American Jurisprudence*, Proof of Facts 3d 1 (Originally published in 2001) “Categories of inventions held not be patentable”, §10.

¹⁷⁵ *In re Alappat*, 1994 33 F.3d 1526 (Fed. Cir. 1994), footnote 18, internal quotes omitted. See also, *Diamond v. Chakrabarty*, 1980 447 U.S. 303, 100 S. Ct. 2204, 65 L. Ed. 2d 144; *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 1948 333 U.S. 127, 68 S. Ct. 440, 92 L. Ed. 588.

¹⁷⁶ *Bilski v. Kappos* 2010 U.S. Supreme Court 561 U.S. (08-964).

still beneficial to reflect on whether they have some merit to be entitled some degree of exclusive rights. Treating abstract ideas, laws of nature and natural phenomena as held in common is right most of the time, but sometimes can be problematic from practical point of view, especially for the cases of business method patenting. By saying “only something made by man, not by God, is patentable”, we are actually removing all the privileges or honors that could be assigned to discoverers, who have been and will continue to be contributing to our society in many ways. No other rewards can provide an incentive that matches a patent in its accuracy and adequacy for a potential discoverer. Greater details of this reasoning will be placed in next section, “3.3. In Search of a Self-perpetuating Rewarding Mechanism: Imagine a Future in which Business Method Patents are Completely Eliminated”. Moreover, in many cases, human behaviors of discovering and inventing sometimes are not very distinguishable. Take medical inventions as an example. Countless great new medicines are “invented” by scientific guess and trial and error. Can such an “invention” be also interpreted as a “discovery”? It is not strictly made by the inventor, although the inventor does help nature manifest itself in a novel way. Consider this, it is usually the case that a naturally existing substance by itself has long been neglected (e.g. penicillin), until some great inventor find a novel way to utilize it to our human’s advantage.

A more difficult question arises in this Internet Age, as to whether an idea in e-commerce might be considered an abstract idea, a law of nature, or an invention by human beings. Take the boom of the Peer to Peer file transfer method (P2P) on the Internet as an example. If the inventor of the P2P wanted to patent “A system and method of distributing data online in a decentralized manner”, he or she might encounter tremendous difficulties. First, the technical aspect of this novel protocol is no big breakthrough, what really was revolutionary was the very idea of decentralized file sharing system, which can be attacked as being too abstract. The success of the

P2P system is credited with successfully taking advantage of one of the most prevalent human natures: the preference for something that is free, which, unfortunately for the inventors, is law of nature. The mechanism of the P2P system designed by the inventors has some unique properties that lend itself to amplifying the network effect, thus exponentially exploded its subscribers, which, however, can be explained as being just a natural phenomenon. The conclusion would be that there is no merit for granting such a patent on the P2P system. It would have been struck out at the first hurdle, namely the eligible subject matter test.

Somehow this is unfair for a novel item like P2P that has so much human ingenuity in it but still must be treated as “common property”, being completely excluded from proprietary domain. In my own opinion, this partly explains why P2P providers worldwide are so enthusiastically involved in or conniving copyright infringements, they simply cannot find a legitimate way to realize their share of profits. If the P2P inventor could acquire a patent, it would not only substantially reduce the current number of P2P provider competitors (Bittorrent, limewire, emule, etc.), but also provide a legal asset (or a deposit in a legal sense) for the P2P provider to negotiate with copyrighted content owners, hence an incentive for that provider to conform to copyright norms. This might have been a win-win solution, a much better equilibrium.

The current controversy and debate on the vagueness distinction between abstract ideas and inventions is somehow beneficial, as at least it leaves the issue open, rather than say a definite no to all abstract ideas, laws of nature and natural phenomena. Apparently there is a benefit of the doubt for cases like BMPs that lie on the borderline.

Finally, at the last level there are practical reasons for not allowing for patenting abstraction and laws of nature, namely the extreme difficulties in enforcement. Imagine you have a patent on a special algorithm, which is basically mental abstraction and wholly divorced from

the physical world, every time when someone else thinks about it, he or she is running a risk of infringing your patent. However, how could you ever possibly stop the infringers from thinking about your patented abstractions? The same difficulties would arise for patenting laws of nature or natural phenomenon. How could you ever possibly stop Mother Nature herself from implementing one of the laws of nature, e.g. gravity, and collaterally (or accidentally) favored a third party? Is it fair to allow you to sue that third party for patent infringement? Therefore, in order to acquire protections under patent law, the invention has to be at least distinguishable when, where, how and by whom it is implemented. Abstract ideas, laws of nature and natural phenomena are all quite weak in this point.

In brief, at all three levels, namely literal interpretation level, economics theory level and practical implementation level, the controversy of whether patenting abstract ideas, laws of nature and natural phenomena is legitimate or not is not settled. Both sides have advantages and disadvantages. Therefore, patenting abstract ideas, laws of nature and natural phenomena, standing alone, should not be used to strike out business method patenting.

3.1.2. Lacking Technology Advancement

For some people, technicality is an inherently implied requisite in the core definition of “patent”. In their eyes, the future of the patent system should be like this, “‘B.Sc. patents’ are going to make it, while the ‘B.A. patents’ will be thrown out: ‘Patents by people with liberal arts degrees are all invalid.’”¹⁷⁷ Although this line is half-joking, it does reflect a quite prevalent view that all patents need to have at least some technical feature.

This rationale finds its way into legislation or legal norms worldwide. Technology advancement, technicality or technical character are common phrases one can find in many

¹⁷⁷Joe Mullin, “*In re Bilski* and the future of business method patents” (2008), online: <http://thepriorart.typepad.com/the_prior_art/2008/10/in-re-bilski-decided.html>.

countries' patent law or legal interpretations. For example, in European countries, it has widely been assumed that an invention must have technicality in order to be patentable under the EPC.¹⁷⁸ Article 52 of the EPC is dealing with patentability, which states “(1) European patents shall be granted for any inventions which are susceptible of industrial application, which are new and which involve an inventive step...”¹⁷⁹ Here, some argue that the requirement is implicit in the meaning of “industrial application.”¹⁸⁰ Another important source that indicate technicality requirement under EPC is rule 27 of the Implementing Regulations to the Convention on the Grant of European Patents, which requires that the patent specification must “specify the technical field to which the invention relates.”¹⁸¹ Therefore, although lacking an official definition of “technical”, the “technical character” requirement is firmly established in European patent law.

China traditionally has been following European Union's model in this respect. Prior to 2008, under China's patent regime the technicality requirement did not appear in its Patent Act, but rather in Implementing Regulations of the Patent Act of the People's Republic of China. The Article 2 of Implementing Regulations of the Patent Law of the People's Republic of China states, “‘Invention’ in the Patent Law means any new technical solution relating to a product, a process or improvement thereof.”¹⁸² This article had been strictly implemented. In practice, the Article 2 of Implementing Regulations of the Patent Law of the People's Republic of China was the most frequently cited source when a pure business method patent application was being rejected by the examiners. In 2008 revision to Patent Act, China has moved this technical requirement from

¹⁷⁸ R Bakels & PB Hugenholtz, “The Patentability of Computer Programs: Discussion of European-Level Legislation in the Field of Patents for Software” (2002) EUR.PARL.DOC.(JURI 107 EN) 21.

¹⁷⁹ *European Patent Convention*, 5 October 1973, 1065 U.N.T.S.255.

¹⁸⁰ John R. Thomas, “The Patenting of the Liberal Professions” (1999) 40 B.C.L.REV.1139, 1181.

¹⁸¹ *Supra* note 178.

¹⁸² Implementing Regulations of the Patent Law of the People's Republic of China (2001).

Implementing Regulations to the Patent Act, further underscoring the importance of technicality in a patent application.

The U.S. does not explicitly prescribe technicalities in its Patent Act. However a longstanding norm did exist in patent examination practice, which assumes that there is a “technological arts” requirement embodied in the Patent Act. This norm had been held unchallenged until 2005, when a landmark decision made by the Board of Patent Appeals and Interferences eliminated this assumption in *Ex parte Lundgren*. Since 1988, two patent applications were submitted by Carl Lundgren on two economic inventions. One of the two is “Method and Apparatus for Preventing Oligopoly Collusion,” Serial No. 07/277,142, filed on November 29, 1988. The other is “A Method of Motivating Unbiased Human Predictions,” Serial No. 07/495,772, filed on March 19, 1990. The latter was later renamed “Method of Eliciting Unbiased Forecasts by Relating a Forecaster's Pay to the Forecaster's Contribution to a Collective Forecast” in Continuation-in-Part application (containing both old and new material), Serial No. 08/008,340, filed on January 25, 1993.¹⁸³ Both of these two inventions had been rejected on subject matter grounds. Regarding the former patent application (“Method and Apparatus for Preventing Oligopoly Collusion”), the applicant was not satisfied with the rejection and the case was appealed twice.¹⁸⁴ In 2005, A BPAI five-member panel reviewed this case, and a three-to-two majority signed the opinion that upheld the patentability of the claim. Regarding the PTO “technological arts” test, the panel found that such a test does not exist under the Patent Act. “Our determination is that there is currently no judicially recognized separate ‘technological arts’ test to determine patent eligible subject matter under § 101. We decline to

¹⁸³ “Dr. Lundgren's Patent Applications”, online: ValMarPro Forecasting, Inc. <http://valmarpro.com/rel_1b.html>.

¹⁸⁴ *Ex parte Lundgren*, 2005 Appeal No. 2003-2088 (BPAI 2005).
Online: <<http://www.uspto.gov/web/offices/dcom/bpai/prec/2003-2088.pdf>>.

create one. Therefore, it is apparent that the examiner's rejection cannot be sustained.”¹⁸⁵

When it comes to taxonomy of different “arts”, the U.S. scholars have contributed helpful insights. Chiappetta et al. proposed to distinguish between “competitive arts” and “technological arts”.¹⁸⁶ Such taxonomy sheds a particularly valuable light on the issue of business method patent, as for business methods what is usually lacking is “technological arts” while what is abundant is “competitive arts”, i.e. an improved way of extracting revenues. This feature of the business method patent differentiates itself from the rest of the patent family, and somehow reduces its validity, as it somehow represents a zero-sum game in our human society, as opposed to a triumph over nature. For instance, in 2006 a lawsuit on a U.S. tax-saving patent, No.6,567,790 issued by the USPTO won itself an “overwhelmingly negative” reaction from the society, accusing such patent as “socially wasteful”.¹⁸⁷

However, a business method lacking “technological arts” does not necessarily have to be “socially wasteful”. From a practical point of view, it would be of great benefit if we can clearly define what “technicality” specifically means and distinguish between those socially useful and socially wasteful. Using this benchmark, we can then ask a question, does no technical character in an invention mean no value to the society? This would ultimately finalize the controversies around technicalities. Unfortunately, at least in the legislation of the two researched countries, we cannot find a concrete answer. “Technical” in English has no specific meaning and, in Chinese patent laws, it is not even mentioned how this expression is exactly interpreted.

It is important to note, however, that critics of BMPs sometimes mistakenly mingle

¹⁸⁵ See Dennis Crouch, “Patent Board Eliminates ‘Technological Arts’ Requirement for Business Method Patents” (2005), online: Patently-O < http://patentlaw.typepad.com/patent/2005/10/patent_board_el.html >. See also *Ex parte Lundgren*, 2005 Appeal No. 2003-2088 (BPAI 2005).

¹⁸⁶ See *supra* note 13.

¹⁸⁷ Lucas Osborn, “Tax Strategy Patents: Why The Tax Community Should Not Exclude the Patent System” (2008) 18 Albany Law Journal of Science and Technology 325.

together technicality with other statutory requirements. Here is an example quoted from a comment to the Ex parte Lundgren decision.

“By the logic of this decision it would seem that subject matter drawn to human activity lacking any technological component may be patentable. So for example if a health spa came up with a new method of performing a massage could they patent it? Or if an obstetrician develops a new method of breathing to assist in labour could this too be patentable?”¹⁸⁸

The short answer is no. Not because they are “lacking any technological component” though, but because they all require professional skills, failing the statutory enablement requirement of Section 112.

In a nutshell, a lack of technicality in many business method patents does present much contention towards their legitimacy, but this is not as seriously fatal to the BMPs as is the criticism of patenting abstract ideas, laws of nature or natural phenomena, which is analyzed earlier in this Chapter.

3.1.3. Concerns of Overly Monopolistic Power and Dominance over a Business

BMPs tend to be pervasive. They tend to be able to find their way to an increasing number of human activities. One may not have to confront the method of curing rubber daily, which can be a typical technological patent in the industrial age, but one can hardly avoid being presented with a new life-insurance policy at some point in life, or receiving some kind of rewarding points through commercial schemes, or using a search engine and ending up clicking on some related advertisements, or sending text messages through cell phones to a business service centre to make instant inquiries, or even participating in a new method of speed dating, etc. This pervasive nature of “business processes” raises concerns for many critics of BMPs,

¹⁸⁸ See Dennis Crouch, “Patent Board Eliminates ‘Technological Arts’ Requirement for Business Method Patents” (2005), online: Patently-O < http://patentlaw.typepad.com/patent/2005/10/patent_board_el.html >.

drawing much firepower from their opponents.

Limiting the scope of claims in a patent application to prevent it from being interpreted overly broadly is a common task clearly written in most patent laws worldwide. The U.S. Patent Act Section 112 that an invention must be specified in “full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.”¹⁸⁹ In China’s Patent Law, Article 26 states, “The claim shall, on the basis of the description, clearly and concisely define the scope for which protection is sought.”¹⁹⁰ Failing to fulfill these requirements can lead to rejection of the patent application.

Traditional technological patents seldom defy these specification or scope requirements written in patent laws. It is the inherent pervasiveness in BMPs that makes some of them inconsistent with those requirements in such a systematic manner. Take the most recent U.S. *Bilski* case as an example. The claim of *Bilski* patent was “A method for managing the consumption risk costs of a commodity sold by a commodity provider at a fixed price comprising the steps of: (a) initiating a series of transactions between said commodity provider and consumers of said commodity wherein said consumers purchase said commodity at a fixed rate based upon historical averages, said fixed rate corresponding to a risk position of said consumer; (b) identifying market participants for said commodity having a counter-risk position to said consumers; and (c) initiating a series of transactions between said commodity provided and said market participants at a second fixed rate such that said series of market participant transactions balances the risk positions of said series of consumer transactions.”¹⁹¹ The claims at issue were quite broad and the possibility that a prior art exists increases as such claims become

¹⁸⁹ *Patent Act*, 35 U.S.C. §112.

¹⁹⁰ Patent Law of the People’s Republic of China (Amended in 2008).

¹⁹¹ *Bilski v. Kappos* 2010 U.S. Supreme Court 561 U.S. (08-964).

broader. As pointed out by Justice Stevens, “Since at least the days of Assyrian merchants, people have devised better and better ways to conduct business.”¹⁹² Even if the *Bilski* claims met the statutory subject matter requirement of Section 101, it would not have passed the specificity requirements of Section 112.

When the claim is overly broad, patent authority is typically reluctant to grant patent, for fear of an overly monopolistic power as the consequence of the grant. This is very sensible, indeed. An overly broad claim normally runs a risk of including some prior arts that may or may not be known to the examiners. Therefore, such reluctance on the examiner’s part is prudent.

In my opinion, the controversies around overly broad claims that are typically associated with BMPs are more worthwhile to discuss than all the other controversies around business method patenting, because this discussion is most likely to lead to some productive improvement in the patent reform that we must make now. Some controversies, like patenting abstract ideas, can never reach a unanimous agreement among different interest groups. Some controversies, like incompetency of the patent examiners, can be settled by themselves through time. However, the controversy of whether and how to set a limit on the scope of claims in BMPs now will affect our future. Indeed, some Chinese scholars have already posited a “sui generis” system for BMPs that a claim will only receive protection in a particular industry, somehow introducing a categories-specific system of trade-marks into patent protection, thus limiting the scope of one BMP claim. This “sui generis” system will be discussed in a later section of this Chapter.

¹⁹² *Ibid.*

3.1.4. Practical Difficulties: Examiner's Competence and Prior Arts Search

Facilities

For the traditional technology patents, whether product or process, as most of the prior arts are documented in the patent literature or patent documents, the novelty can be easily and reliably determined by searching and reviewing the current literature database. This is not the case for BMPs, especially where the BMP is Internet-related. Up to this point of writing, no single country claims that a comprehensive database for BMP prior arts has been officially established. Instead, to determine novelty, patent examiners usually have to search and review large quantities of information present in advertising, operational guidelines, training materials and other non-patent literature, which usually requires special expertise in that particular area of the application, and presents many difficulties in the examination practice.

Indeed, where there is too much cost on improving the examiners' competency and current database for prior art search, controversies as to whether such improvement is worthwhile at all would inevitably arise. A great deal of debate appears to revolve around how negative the effects are when BMPs overwhelmed the incompetent patent examiners and yield large amounts of incompetent patent granting.¹⁹³ Examples of such incompetent patents are eloquently provided by Gregory Aharonian, an active critic of software patents who owns an independent media, Internet Patent News Service.¹⁹⁴ He pointed out that on 6 July 1993, USPTO granted a patent for an "Automated Health Benefit Processing System" which was arguably covering exactly the same method and system that many 1980s conferences proceedings had

¹⁹³ See *supra* note 19. See also Matthew G. Wells, "Internet Business Method Patent Policy" (2001) 87 Virginia Law Review 729. See also Reder, Margo E. K., "Business Method Patents Challenge the Purpose and Intent of the Patent System" (2006) 39 Business Law Review 145.

¹⁹⁴ For reference his website is: <http://www.bustpatents.com/>.

already described in detail.¹⁹⁵ He further cites U.S. Patent No. 5,865,827 that protects a “device and method to provide a gateway for the transfer of information between financial markets and customers.” This patent was issued on 26 January 1996, although there had been a documented paper on the same topic published in 1985.¹⁹⁶ With so many practical difficulties in hand and so many bad patents being issued every year, some would naturally cite again the old argument that “much higher cost to society to operate the patent system than the supporters of the system will acknowledge.”¹⁹⁷

However, in my opinion, the effort to establish and maintain a competent prior arts database, no matter how difficult it might be, should be considered as a necessary evil, rather than net cost. All the debating seems to have begged some very important questions: Are BMPs the cause of the incompetent examiners or are incompetent examiners the cause of low-quality BMPs? Wouldn't it be necessary and beneficial for our society to know better and tally exactly what prior art really is in our possession in an explicit way, no matter how novel the subject matter is? If the answer is yes, then an investment must be made to improve current examination practices and we should stop unproductive debate. Some people, however, would rather blame BMPs as the culprit for the current mess in IP regime, than to invest in major improvements, which would in the longer term lead to a greater awareness of human knowledge inventory.

It is good that we have already seen some positive experiments happening. Again let us take the U.S., one of the most technologically advanced countries in the world, as an example. As just pointed out, there have been many critics asserting that the USPTO is ill-equipped to investigate whether a BMP is novel and non-obvious. Former director of the USPTO Bruce

¹⁹⁵ Gregory Aharonian, *Intellectual Property Rights: How Far Should They Be Extended? Presentation to the National Academies' Board on Science, Technology and Economic Policy (STEP)*, Washington, D.C. 2000.

¹⁹⁶ *Ibid.*

¹⁹⁷ See Carlos Alberto & Primo Braga, “Guidance From Economic Theory” (1990) World Bank Discussion Paper 17.

Lehman once pointed out, “We search the patent database, both U.S. and foreign, and search every commercial database. But there are many concepts that have been done which are what I call folklore. They are out there, and people know about them, but we can’t find any written documentation. The examination process requires that we have written documentation which we can point to which states a particular fact. Too often we can’t find the documentation. Then when the patent is issued, some people say, ‘Well this is well-known, it has been in the industry for years.’”¹⁹⁸ To address this problem, the USPTO announced in March 2000 that a new “layer of review” is added to business method patent applications. The USPTO has also been recruiting technology, financial and commerce specialists to aid examiners in the areas of finance, e-commerce, insurance and Internet infrastructure. It also has expanded the non-patent database by prescribing a list of core and subclass literature concerning different areas of BMP applications.¹⁹⁹ Although there is still a long journey to overcome all the practical difficulties in BMP examinations, the USPTO has already started to take some actions. Hopefully over time this controversy can be settled.

3.1.5. Misuses and Abuses: Are BMPs Inducing “Junk Patents” and “Patent Trolls”?

Many BMP critics cite so called “junk patents”²⁰⁰ and “patent trolls”²⁰¹ as social problems caused by, or inevitably associated with business method patent. Such criticism deserves detailed analysis in order to pinpoint the cause and effect between BMPs and patent

¹⁹⁸ Simson L. Garfinkel, “Patently Absurd” (1994) *Wired* 104 at 107.

¹⁹⁹ USPTO, White Paper on Business Methods Patents - Figures for Non Patent Literature Databases, online: <http://www.uspto.gov/patents/resources/methods/afindpm/section_v/quality.jsp#fignpl>.

²⁰⁰ There is no official definition for “junk patents”. “While a common explaining is that it refers in particular to those patents which have no commercial value and cannot contribute to economic growth.” See “Junk Patents”, online: Sino-Link Consulting <http://www.attorneysflosangeles.info/article-217-Junk_Patents>.

²⁰¹ The term was coined by Intel’s former Assistant General Counsel Peter Detkin, stating that “A patent troll is somebody who tries to make a lot of money from a patent that they are not practicing, have no intention of practicing and in most cases never practiced.” See Timothy J Haller and Sally Wiggins, “United States The patent troll myth”, online:< http://www.buildingipvalue.com/06US_Can/113_116.htm >.

abuses.

For the case of so-called “junk patents”, some frivolous business method patents did present, such as “a method of bra size determination by direct measurement of the breast”²⁰², or “a method for inducing cats to exercise”²⁰³, or even a method that claims to be able to compress any data set by at least one small part without any loss of information, which is logically ridiculous and impossible.²⁰⁴ Among other things, U.S. Patent No. 5,794,207 is commonly cited as an incompetent patent, which was held by Priceline.com protecting a model that allows the buyer to present a bid which they wish to pay for a product or service, and a seller then can choose to accept the buyer's offer to enter into a binding contract, typically as the result of a reverse auction process. It is considered incompetent because such reverse auction process had already been practiced long before the patent was applied.

However, this portion of frivolous BMPs is not representative of the overall characteristics of all BMPs. Note that “many of the most questionable patents around were issued before a 2007 Supreme Court ruling that required patents to meet a higher, more sensible standard of non-obviousness.”²⁰⁵ Indeed, as analyzed earlier in this Chapter, the quality concern can be much improved through an enhanced competency of examiners and database support. Just as we should not blame modern chemistry for air pollution, we should not blame a system, no matter how imperfect it is, for a problem it is still attempting to address.

If junk patents are due to temporary lag of competency on the examiners’ part, then “patent troll” is a different story, and a more complicated one as it sometimes involves

²⁰² “a method of bra size determination by direct measurement of the breast”, U.S. Patent No. 5,965,809 (12 October 1999).

²⁰³ “a method for inducing cats to exercise”, U.S. Patent No. 5,443,036 (22 August 1995).

²⁰⁴ See Philip E. Ross, “Patently Absurd Technology and Gamesmanship Has Overwhelmed the U.S. Patent Office. How to fix it?” (2000) May, *Forbes* at 180.

²⁰⁵ Rob Pegoraro, “Supreme Court 'Bilski' ruling doesn't rule out software, business-method patents” *Washington Post* (28 June 2010), online:<http://voices.washingtonpost.com/fasterforward/2010/06/supreme_court_bilski_ruling_ke.html>.

intentional abuses.

BMPs' sometimes have an overly broad claim. BMPs working together with the potential to acquire an injunction from the courts, can be a legal weapon to extort ransom. On April 21 2006, an Intel executive posed the following question before Congress in a testimony on patent reform: "If someone buys a patent for US\$50,000 and their business model is suing people, should they be able to get an injunction?"²⁰⁶ The lawsuit between MercExchange and eBay may best illustrate this issue.²⁰⁷

In October 2001, MercExchange instituted an action against eBay, claiming that eBay's "Buy It Now" feature had infringed two patents owned by it. In May 2003, a jury decided that eBay should pay MercExchange \$35million in damage, but did not grant an injunction. In 2005, the appellate court changed that decision and granted the injunction. On May 16, 2006 the U.S. Supreme Court overruled that injunction and sent the case back. On February 28, 2008, eBay purchased the three relevant patents from MercExchange.²⁰⁸ eBay had suffered from this lawsuit for several years. Interestingly enough, MercExchange is merely a tiny E-commerce firm, whose owner is a patent lawyer. During these lawsuits, Oracle, Microsoft and Intel publicly supported eBay. Indeed, many famous companies in the U.S. had suffered from so-called "patent trolls" attacks before eBay. Since a majority of those disputed patents belong to BMPs, such lawsuits triggered much controversy concerning BMPs' legitimacy.

Having said that, there is still a lack of preponderance of evidence to support the idea of completely outlawing all BMPs, just because patent trolls exist. Indeed, even the legitimacy of patent trolls themselves is much of debate. Someone eloquently argued, "So what do these patent

²⁰⁶ Timothy J Haller & Sally Wiggins, "United States The patent troll myth", online:<
http://www.buildingipvalue.com/06US_Can/113_116.htm>.

²⁰⁷ *eBay Inc.v.MercExchange,L.L.C.*, 2006 547 U.S.388.

²⁰⁸ For a detailed analysis of this case, especially for the injunction aspect, please refer to earlier chapter of this thesis.

trolls do that is so wrong? Apparently, the answer is that patent trolls do not manufacture the technology that is embodied by the patents that they seek to enforce. But is this really wrong?” and further pointed out, “There is, of course, no section of the Constitution or the patent laws that reserves the right to obtain and enforce patents exclusively for large manufacturing companies.”²⁰⁹ The tricky part of this is where we draw the line between appropriate leverage and abuse. In order to solve this problem we may first need to ask, what do we ask from a patent system?

Some scholar points out that “Casual observation suggests that business method patents are not being used to provide innovation incentives as much as they are being used to extract rents ex post”²¹⁰ This argument is indeed a false argument, since every enterprise rightfully seeks to maximize profits. Contribution to the society, either in the form of pecuniary taxation on profits or in the form of technology advancement embodied in their goods, is just a company’s unintended by-product. Moreover, the word “innovation” in this statement actually has a broader meaning than “benefits to society”, since a new way to “extract rents” can also be an “innovation”, from the company’s perspective. Could it be better (and clearer) to rephrase this argument as: Casual observation suggests that business method patents fail to solicit beneficial contributions from companies to society and is becoming a litigation vehicle? However, if our focus is on how much benefit a company should voluntarily bring to our society when it is conducting research & development, we should seek it from moral education, not from the patent system. To “extract rents” is just as important as, if not much more important than, “innovation” for a company. This rule applies to any kind of patents; there is nothing to blame BMPs in this respect.

²⁰⁹ *Supra* note 206.

²¹⁰ *Supra* note 23.

The true beauty of the patent systems lies in their unintended beneficial consequences to all market participants. It is true that some BMPs have been used as patent trolls, but other types of patents also face the same problem. Instead of debating on whether BMPs should be outlawed altogether because of patent trolls, in my opinion the more difficult controversy here is: are patent trolls an unavoidable by-product of a legitimate patent system? How can we improve it? However the further analysis on these questions is beyond the scope of this thesis.

3.2. Empirical Evidence of Historic Anti-patent Movements, And Its Prophetic Revelation to the Business Method Patents' Future

Business method patent is novelty; as with any novelty, it is only natural to expect controversies around it. However, interestingly enough the controversies themselves are not novel at all. History repeats itself in such an extreme way that some of the old criticisms that were used against the patents on ordinary technology inventions in the nineteenth century now are picked up without too much refurbishing and then used as the criticisms against today's business method patents. For example, back in 1827, patent reform advocates argued that the whole patent system should be abolished, claiming that the patent system is "expensive, clumsy and uncertain".²¹¹ Ever since then, whenever there is a proposal against patent system, regardless of whether the subject matter is technology or pure business methods, we can hear this cliché. Just as Machlup and Penrose pointed out back in 1950 when there was a heated debate around another patent reform in the U.S., that the rationale underlying the debate remains the same even though the economic environment had changed from the past.²¹² Learning from the past seems to be of particular importance yet so easy to be forgotten in the issue of patent reform.

²¹¹ Machlup and Penrose, "The Patent Controversy in the Nineteenth Century" (1950) 10 The Journal of Economic History 1.

²¹² *Ibid.*

It must be worth mentioning that the history of patents in Europe and the U.S. is closely linked with the Industrial Revolution. That is, during this period governments' grant of limited monopolies to inventors under a developing patent system is considered an influential factor in technological development.²¹³ According to a Machlup and Penrose's 1950's study, in European history the anti-patent movement reached its peak between 1850 and 1875, a quite wild development considering that until 1827 there still had been a serene picture for the issue of patent.²¹⁴ Like today's critics of the business method patent, the anti-patent movements in history were also not content with only minor tweaks on the issue. At each opportunity the anti-patent advocates would like to question the very core of the target issue, and attempt an elimination of the "flawed" system altogether. In the nineteenth century's Switzerland, at the time the only industrial country in Europe without a patent system, the anti-patent groups, represented by faculty members of the Zurich Institute of Technology, had successfully fought off several times the proposals of establishing a patent system by domestic engineers. The government provided a ridiculous reason for their decision, stating that "political economists of greatest competence" had testified that a patent system is "pernicious and indefensible" (verderblich und verwerflich).²¹⁵

Furthermore, today's anti-business method patent advocates share yet another common similarity with the anti-patent advocates in history-- both of them succeed, for the time being, in making people believe that there is the end to the systems in question in the offing.

In an 1869 issue of *The Economist*, the reporter had predicted that "It is probable enough

²¹³ See Victor M. Batzel, "Legal Monopoly in Liberal England: The Patent Controversy in the Mid-Nineteenth Century" (1980) 22 *Business History* 189.

²¹⁴ *Ibid.*

²¹⁵ See *supra* note 211211.

that the patent laws will be abolished ere long....”²¹⁶ In 2008, shortly after the decision of the *Bilski* case, a U.S. patent lawyer predicted in dismay that “If you want to protect new modes of shopping, delivering legal services, reserving a rest room on an airplane, or settling futures contracts, don’t ask the U.S. Patent and Trademark Office(PTO) for help” in his article *The death of business-method patents*.²¹⁷ For the first comment on *The Economist*, we now have found out that it is untrue-- Parliament passed a patent reform bill in 1872 that did not sentence the patent system to death.²¹⁸ Does this help weaken the validity of being pessimistic about the future of the business method patent? Indeed this has turned out to be the case. On June 28, 2010, the U.S. Supreme Court issued its decision on *Bilski* case.²¹⁹ To someone’s surprise, it did not close the door for business method patenting at all. Justice Anthony Kennedy's opinion stated that earlier decisions by CAFC went too far in rejecting any business method patent claims using a rigid test, warning judges not to read into it “limitations and conditions which the legislature has not expressed.”²²⁰ History repeats itself again.

3.3. In Search of a Self-perpetuating Rewarding Mechanism: Imagine a Future in which Business Method Patents are Completely Eliminated

Earlier in this Chapter the controversies concerning business method patenting is analyzed, now we turn to the question of underlying economic concerns.

The economic incentive theory considers patent granting as a bargain between inventors

²¹⁶ *Ibid.*

²¹⁷ Frank S. J., “The death of business-method patents” (2009) 46 Spectrum, IEEE 32.

²¹⁸ However the bill did place more restraints on patent monopoly at that time. For example the bill reduced the patent protection period to seven years and introduced the primitive compulsory license mechanism. See Supra, note 211.

²¹⁹ Supra note 90.

²²⁰ *Ibid.*

and the society in the spirit of Rousseau's social contract.²²¹ Like other classes of patents, a BMP also means a temporary monopoly granted by the government to the right owners, in exchange for the right owners disclosing their proprietary information, which is assumed to be beneficial to the whole society. Such a tradeoff between patent authority, which acts as the gatekeeper on behalf of the whole society, and individual patent applicants, requires a precise calculation, and usually involves many trials and errors to fine tune it. An error in the design of a trading mechanism of this kind could lead to huge unintended consequences. Business method patents in essence are merely a new kind of property right (although they only last in limited durations), which are designed to address the tragedy of the commons, thus to induce further innovation or other beneficial activities around innovation. Because of this nature of bargain, there has always been a need for "societal dividend" underlying it in order to justify any patenting. As one scholar points out, "In an ideal world, patents would be available only when the social benefits of encouraging innovation through the grant of exclusive rights outweighed the innovation-stifling effects of withholding them."²²² However, exactly how much dividend does it require to justify patenting, and how the dividend is calculated, has never been unanimously clear. Moreover, spelling out the underlying principle and theory is one thing; putting it into use and making sure it brings about the desired outcome is another. In a nutshell, all the debate and controversies over the legitimacy boil down to one fundamental concern: is BMP beneficial or harmful to the societal welfare?

In an earlier section I mentioned the controversy of patenting abstract ideas, laws of nature and natural phenomena, and explained that such controversies touch on a deeper question: should a discovery of a valuable item that is not absolutely made by the discoverer but by

²²¹ *Supra* note 211.

²²² *Supra* note 217.

Mother Nature be held as commons or entitled some type of exclusive rights, e.g. patents? especially when such discovery is involving a great deal of human ingenuity and being pivotal to a particular industry. Intuitively, the answer seems to be that they should be entitled for patent-like exclusive rights. After all, those discoveries are usually absolutely non-obvious in patent sense. Lacking exclusive rights protection it can really harm the incentives of the discoverers, and ultimately harm the industry as a whole.

Let me provide a real-world example here. More recently it is highly publicized that Google Inc. encountered some setback in China.²²³ This thesis does not discuss any political issues like Internet censorship, etc. Rather, here we focus on one fact: after 4 years operation, Google, the number one search engine giant in the world, only accounted for 31.3 percent of China's Internet search market in the third quarter of 2009, while “homegrown search leader Baidu Inc (BIDU.O) had the lion's share with 63.9 percent.”²²⁴ If anyone had used Baidu before, he or she would probably be surprised at how similar the functionality and working mode it shares with Google. For example, Baidu’s “Baidu Tui Guang” (百度推广, or “Promotions by Baidu”) is basically the same business model as Google’s AdWord, or maybe an evil version as Baidu actually sells the search results to advertisers and lists the search results in order of their bidding prices, which Google refuses to do out of concern that the bidding price may not accurately reflect the relevance of the search results and search engine users might be misled. We do not even need to mention that some core technologies like “automated web spiders” are imitated by Baidu from Google. Indeed the entire business model of Baidu is largely an imitation

²²³ See Jessica E. Vascellaro, “A Heated Debate at the Top: Co-Founder Brin Pushed for Strong Condemnation of China, While CEO Schmidt Argued to Stay” *Wall Street Journal* (14 January 2010), online:<<http://online.wsj.com/article/SB10001424052748704675104575001281662251848.html>>. See also Andrew Jacobs, “Google’s Threat Echoed Everywhere, Except China” *The New York Times* (13 January 2010), online:<http://www.nytimes.com/2010/01/14/world/asia/14beijing.html?_r=1>.

²²⁴ Melanie Lee, “China's search mkt grows 38 pct in Q3-research firm” *Reuters* (28 October 2009), online:<<http://www.reuters.com/article/idUSSHA28794420091028>>.

from Google. It is generally believed that Google is a pioneer in terms of having discovered the way to generate revenues from the Internet search industry. Then what can this pioneer do to stop its imitators from free-riding its rewards? Nothing. So maybe Google's withdrawal from China reflects its dismay about this unfair competition environment. Without some kind of exclusive rights, such unfairness can happen again and again.

Now let us return to economic justifications for BMPs, and for all patents in general: how can a patent benefit our society after all? Economists have listed a number of the ways that patents can contribute positively to our societal welfare. For instance, an economist when preparing for a presentation on business method patenting to an audience of bankers wrote this: "Most economists view the patent system as a necessary evil: with a patent grant we trade off short term exclusive (monopoly) rights to the use of an invention in return for two things: 1) an incentive to create the innovation; and 2) early publication of information about the innovation and its enablement."²²⁵ He went on to state, "Mazzoleni and Nelson (1998) expand on this analysis and provide two further related arguments for the existence of a patent system: it serves as an inducement for the needed investments to develop and commercialize inventions, and it enables the 'orderly exploration of the broad prospects' opened up by particularly novel inventions."²²⁶ These four benefits perfectly summarize what a patent, especially a BMP, can bring us.

In real life, business methods, by their very nature, can be categorized into two broad types. For one type, it is very difficult (if not impossible) to implement these methods while still keeping them under secret. For instance, incentive programs, coupon redemption mechanisms or innovative insurance policies, once put into use, the whole idea immediately becomes public

²²⁵ *Supra* note 23.

²²⁶ *Ibid.*

knowledge. Some E-commerce tools and infrastructure, e.g. user interface arrangements, auctions methods also fall into this type. For simplicity this type of is hereafter referred to as Type I business method in this thesis. By contrast, the other type of business methods, such as accounting methods, cash registering methods, or some resources optimization methods can be easily implemented for years without displaying the mechanism to the outsiders. This type is hereafter referred to as Type II business method. In theory, business method patents can protect a variety of business methods that includes both Type I and Type II.

As far as the aforementioned four justifications are concerned, for Type I business methods, we will see that promoting investment and implementation is the most salient justification. For Type II business methods, the justification is much more similar to the conventional technology patents, which is soliciting disclosure that would otherwise be kept as trade secrets, leading others to reinvent the wheel again and again.

What if we eliminate the business method patents completely then? Let us imagine a scenario where business methods are absolutely un-patentable, i.e. anything that touches on a way of doing business would automatically lose patentability. What would the consequences be like for such a scenario?

While constructing a full picture is somehow challenging, some model in history might serve as a hint. Before 1980s, prior to the enactment of the Bayh-Dole Act, the U.S. had been suffering a major problem concerning its research activities at a national level. Publicly-funded researches, no matter how promising their result might have looked, had failed to attract sufficient investment and effort to implement and promote. The extremely low implementation rate of the U.S. publicly-funded researches had become a threat to the nation. According to a study, “the license rate of the 28,000 patents owned then by the U.S. government to private firms

at the time was only four percent, while the rest remained silent waiting for development.”²²⁷

Why is it so? The reason is simple. At that time the U.S. legislation required that for any publicly-funded research, the title to acquire a patent on it is reserved for the government. Unless having been granted an explicit waiver in advance from the funding agency, the research agency or the researchers themselves are not entitled to apply a patent on what they had been researching.²²⁸ Like a saying states, “everybody's business is nobody's business.” In absence of patents, neither research institutes nor individual researchers had an incentive to implement what they have researched. Government, due to its inherently more vague property structure, was not so efficient in implementing all the research results that they legally owned. More importantly, lacking a patent on a research result is equal to lacking a predictable guarantee, which is doomed to turn off investors.

That is where the Bayh-Dole Act came in. Rai argues that the need to grant patents to publicly-funded research was “not for the traditional reason that such rights would provide an incentive to invent, but rather as an incentive for private firms to undertake the further investment necessary to translate the inventions into marketable products.”²²⁹ This is exactly one of the Bayh-Dole Act’s purposes, “to use the patent system to promote the utilization of inventions arising from federally supported research or development.”²³⁰

The above U.S. case best illustrates how miserable a scenario without a sufficient patent eligibility could be, especially how the utilization, as opposed to further innovation, is harmed by an insufficiently granted patent system. We can find examples from other countries too.

For instance, in China, we can find good examples to substantiate this hypothesis too.

²²⁷ See Arti K. Rai, “Regulating Scientific Research: Intellectual Property Rights and the Norms of Science”(1999) 94 Nw. U.L. Rev. 77 at 97.

²²⁸ *Supra* note 121.

²²⁹ *Supra* note 227 at 96.

²³⁰ *Patent Act*, 35 U.S.C s.200 (1994).

Financial institutions, in particular for those in insurance industry, have been suffering a strange equilibrium: although the market demand for more diversified financial products is out there, companies have little incentive to spend resources or adequate efforts on developing consumer's need into financial products, leading to a severe homogeneous competition among companies and a great waste in resource allocation. Take insurance as an example. To develop a new insurance product, a company first needs to spend money on surveys to identify potential insurance needs in the market. Then it must spend money on hiring experts to do actuarial calculations and designs. Once the policy is successfully designed, it takes legal experts to convert the designs into terms and conditions. Once all of these are done, a company needs to put a huge amount of money into the marketing and promotion of such a new insurance policy, in order to communicate the idea and benefits to the consumers and get them through the awareness phase to the adoption phase. All these costs mentioned above stack up to a considerable amount in the end. However, unfortunately for the hardworking company which has developed it, an insurance policy is exactly Type I business method, which means it is very difficult to be kept secret during implementation. Once a new insurance policy has been launched into the market, everybody will know 'ins and outs' about it, including the company's competitors. Because currently business methods fall outside of patent protection category, which means it belongs in the public domain, anyone else can also use it for free. Apparently the revenue generated through a new insurance product will not adequately compensate the R & D and marketing costs. Hence the equilibrium of a constantly underdeveloped market in China's insurance industry.

The need for stimulating investment and promotion efforts is not limited to the insurance industry. Online E-commerce is not supposed to be a free lunch either. For a new E-commerce business model, it requires considerable investment in network infrastructure, promotion and

training. Maintenance also costs fortune. Moreover, e-commerce compared to conventional business tends to be riskier and more volatile. In the absence of an adequate guarantee of the investment, a wait-and-see attitude is unavoidable.

All the above facts strongly suggest that introducing an adequately broad patentability scope is beneficial to the society, while limiting the scope or eliminating some patentable subject matter altogether leads to disasters. A properly defined patent system, which includes BMPs, should be a self-perpetuating rewarding mechanism for the innovation and utilization of great ideas in our society.

Admittedly, many scholars do not agree with the above opinion. There are many convincing arguments against this opinion in the literature. We now look at some.

Hall pointed out in his paper,

“From a social welfare perspective, an important characteristic of a high quality patent is that there be relatively little uncertainty over the breadth of its claims, i.e., over what specific features of a technical advance are claimed under the terms of the patent, as well as whether these claims are likely to be upheld in legal proceedings following the issue of the patent. Uncertainty about the validity of a patent has several potential costs: such uncertainty may cause the patentholder to underinvest in the technology, it could reduce investment by potential competitors in competing technical advances, and it may lead to costly litigation after both the holder and potential competitors have sunk sizable investments.”²³¹

This statement is absolutely true. However, the author argues that this uncertainty is inherent in BMPs, thus BMPs themselves are a bad idea. This is somehow inaccurate. Excessive patenting does present a problem of “patent-thickets” which are a threat to the so-called “cumulative invention”. However, as argued in previous section regarding the patent quality

²³¹ *Supra* note 23.

concerns, such problems can be addressed through a more rigorous and competent patent examination so that both the quality and the certainty are enhanced, and ultimately welfare-enhancing.

Hall is not just critical of BMPs, but rather he implies that patents in general are not as important as one may argue. He points out that,

“The Carnegie-Mellon and Yale surveys (Cohen et al 2000 and Levin et al 1987) demonstrate fairly clearly that patents are NOT among the important means to appropriate returns to innovation, except perhaps in the pharmaceutical industry. Similar results have been obtained by other researchers for Europe and Japan. Arundel (2001) reports the results of the PACE survey of large European firms, accounting for more than 75% of the patenting in Europe. In both the United States and Europe, firms rate superior sales and service, lead time, and secrecy as far more important than patents in securing the returns to innovation.”²³²

This seems to be quite compelling evidence for the overstated importance of patents. However, the above evidence is subjective rating, rather than objective cause-effect analysis. If you asked a UFO doomsday cult²³³ what their lives rely on, they would probably report a bizarre prophecy, despite the fact that they also eat food and drink water every day. People’s speech may not reflect their motivational drive or reason of an action, especially for CEOs in firms facing the general public and their competitors. Because factors such as good services or lead time are more accepted by everyone, while patent monopoly may trigger public antipathy and competitors’ alerts, CEOs have good reason to conceal their true preferences. There are no incentives, penalties or other constraints pressuring them to be truthful, and cognitive dissonance²³⁴

²³² *Ibid.*

²³³ Festinger, L., Riecken, H. W., & Schachter, S, *When prophecy fails*. (Minneapolis: University of Minnesota Press, 1956).

²³⁴ Cognitive dissonance refers to a tendency of human psychology where people try to invent some reasons to

sometimes could prevail. Here I am not suggesting that the survey is wrong. What I posit is subjective rating alone is not sufficient to undermine the importance of patents, including BMPs.

In her paper, professor Dreyfuss contends that “winning and losing in business is supposed to depend on execution, not on exclusive rights to the moves that need to be executed. We want the best book store to dominate the market, not the store that makes it easiest to check out.”²³⁵ The author is definitely implicating Amazon’s one-click patents and this argument is very provocative. However, the logic here is somewhat obscure. A more convenient way to check out a book is an important element to the overall customer’s experience. A bookstore whose payment methods happen to be lengthy and frustrating can surely not be a “best book store” as claimed by the author. Also, past experience tells us that one single patent rarely does the job of promoting a bad bookstore to a dominant position in the market, although the patent may positively contribute to its operation. A commercial success *is* ultimately determined by execution, regardless of whether we allow business method patenting or not. Therefore the author’s worry seems unjustified.

Professor Dreyfuss continues to argue, “just as sporting events identify the best athlete and team, market competition is what this society relies on to determine the best uses for particular resources. If that mechanism is distorted, then Adam Smith’s unseen hand is crippled.”²³⁶ Again the author seems to be worrying unnecessarily. Adam Smith’s unseen hand has proven to be very resilient and solid, not easily crippled. History has proven that any attempt to distort market competition is in vain in free-market countries. For those non-free-market countries, the entire economy soon collapses. If army, police, courts and the whole state together

rationalize their contradictory behaviours. An illustration of such dissonance is the “sour grapes” belief held by the fox in the fable *The Fox and the Grapes* by Aesop (ca. 620-564 BCE). For the theory, see Festinger, L., *A theory of cognitive dissonance*. (Stanford, CA: Stanford University Press, 1957).

²³⁵ *Supra* note 19 at 276.

²³⁶ *Ibid.*

fails to hold market competition to a distorted status, can a twenty-year patent monopoly held by a small business succeed?²³⁷

To summarize, the above analysis lead to the conclusion that BMP system itself is not problematic. If implemented properly, a BMP system can positively contribute to the societal welfare.

3.4. Who Benefits Most from Patenting Business Methods?

For any patent reforms across countries and throughout history, there are always different interested groups divided by some distinctive lines. Interestingly enough for the issue of business method patenting, the dividing line that separates interested groups seems to be very subtle to draw. Thus, answering the question “who is benefiting from patenting business methods?” is no easy job.

For example, one may readily conjecture that the financial service industry should be unanimously opposing the idea of patenting business methods, because allowing for such patents would render their everyday businesses under the potential attack of patent infringement lawsuits, much riskier. However this is not the case. Goldman Sachs and Accenture are both active advocates for business method patenting, and they even sponsored a website of pro-business-method-patent group named New Economy Patents.²³⁸ One may also assume that venture capitalists must be highly interested in the idea of business method patenting, after all a patent is usually a much more (if not the only, in some cases) secure promise in a start-up where VCs invest so much money in the hope of recouping their investment in future. However, just for

²³⁷ In reality the actual protection period is usually only 17 years, considering that it usually takes two and a half to three years from the date of filing for a business method patent to be issued.

²³⁸ For reference, their website is: <http://neweconomypatents.org/>.

reference, there are many venture capitalists opposing software patenting,²³⁹ so we have good reasons to think they may not be friendly towards business method patenting either. Another false assumption is that if a company has a strong BMPs portfolio already in its possession, then it must favor the idea of BMP. Again, this is untrue. Unsurprisingly, patent auction company Ocean Tomo, whose own business model is a great invention that has been generating revenue through selling patents and advising its clients how to extract more revenue from patents, is in support of business method patenting. However to many people's surprise, IBM, who also extracts huge annual revenue through patent licensing and has a strong patent portfolio, has publicly opposed the idea of patenting a business method.²⁴⁰

Admittedly, there are many different approaches to dividing different interested groups on this topic. For the purpose of this thesis, I only focus on one way of the dividing, namely small and medium enterprises (SMEs), "start-ups" in particular, versus large corporations. Would allowing patenting business methods bring more advantages for SMEs than for large corporations?

3.4.1. Cost barrier

Patents are no free lunch. SMEs and large corporations are not equally affected by the cost barrier. As a scholar pointed out, "If you're a company with the resources to keep good intellectual-property lawyers around, you can accumulate a sizable portfolio of patents that can be used offensively, to launch patent suits against competitors, or defensively, to negotiate cross-licensing agreement settlements with rivals who sue first."²⁴¹ And he went on to imply that

²³⁹ See "Statements from venture capitalists", online: EndSoftPatent <http://en.swpat.org/wiki/Statements_from_venture_capitalists>.

²⁴⁰ Michael Orey, "Supreme Court to Review 'Business Method' Patents" *BusinessWeek* (1 June 2009), online: [businessweek.com <http://www.businessweek.com/technology/content/jun2009/tc2009061_905686.htm>](http://www.businessweek.com/technology/content/jun2009/tc2009061_905686.htm).

²⁴¹ Rob Pegoraro, "Supreme Court 'Bilski' ruling doesn't rule out software, business-method patents" *Washington*

SMEs, especially those start-ups or even individual inventors, are usually not able to afford such patent-related activities.

In my opinion, the above statement is accurate in what it is addressing, but does not render a complete picture. In real world business, what a SME lacks most is marketing muscle. Compared to one or two core patent(s), developing an effective marketing network is much more expensive, and sometimes prohibitive to them. True, patents are costly. But they are still attainable for SMEs.

3.4.2. Market Share Battle

When a SME and a larger corporation are competing in a same market, SME usually is at a natural disadvantage. To illustrate this game, I made up the following fable.

A young boy, a genius, in a small village, who, always possesses a dream to become a great dietitian, has an instinct to discover berries in the woods that are tasteful, nutritious and yet difficult to be distinguished from other poisonous berries of the same family. One day when he discovers a new species of berry. Usually he just eats some on the spot and leaves the rest still covered up by the leaves. This time, however, he determines to bring some home so that he can feed them to his old grandma, preserve some for later use and sell the rest at the fair, to pay his tuition. He first went back home to fetch a basket to carry the berries. He is so happy that he is completely unaware of three pairs of peeking eyes following him and recording all the necessary routes and turns he takes to reach those berries. When the boy starts to collect the berries, he suddenly finds himself besieged by three strangers. The first man comes and says, “You just discovered these berries, right? They are not created by you or derived directly from your genes.

Post (28 June 2010),
online:<http://voices.washingtonpost.com/fasterforward/2010/06/supreme_court_bilski_ruling_ke.html>.

So you do not own the berries in the woods other than what is already in your basket.” The second man comes, “Just a minute, are you talking about ownership? I am an expert on this. The berries are out there in the woods, they are not physically attached to your basket, so you cannot claim ownership of them.” The third man, who is the overly muscular one and has a huge appetite and mature wrestling techniques, grins and says, “Ok, let’s forget about ownership, we should freely compete, shouldn’t we? As pointed out by these two knowledgeable gentlemen, the berries in these woods definitely belong in the public domain. Now I count one two three and let’s start.” The poor young boy is speechless for a moment, astonished by their bizarre arguments. But even when he has realized what is happening he still is unable to win this race. He is too young to drive off the three strong adults, and is destined to lose this game without legal protection. “You two gentlemen are so ingenious.” said the strong man after he has swept all those berries, “I hereby appoint you as my general counsel and you, my son’s law professor.” Unfortunately for that young boy, from then on he chooses not to seek new berries, because each time he discovers a new kind of berry the three men would stalk behind, sweep them up and leave nothing to him. His dream of becoming a great dietitian also dies. More sadly, because ever since then no other people tried to seek out new species of nutritious berries, people in that village can enjoy only what they already have.

Admittedly, my fictitious fable does not fit all scenarios of the real-life business world. However, at least it displays one possible scenario that SMEs (start-ups in particular), when they are still at the seed phase owning nothing but a great business idea, they are more vulnerable to the larger companies who almost always enjoy a much stronger market power. Such a disparity needs some type of legal intervention to strike balance, or it is a deadlock to our society—the large company gets larger and no one can defeat them—exactly what modern antitrust laws are

against.

3.4.3. Exploring a New Industry

When facing a brand new business, SMEs and larger corporations usually act differently. Large corporations, who already enjoy a mature consumer base, typically would try their best not to cannibalize their old business. For example, in China the operation of the Internet Service Provider (ISP) is heavily regulated. Only large state-owned corporations enjoy the privilege of doing this business. Back in 1999, ISDN was introduced to Chinese consumers and developed a consumer base for ISDN. Unfortunately ISDN was only a transitional technology, which is more costly and less efficient than its successor, ADSL. Later on, when ADSL technology was introduced to China, it took quite long before Chinese ISP operators started to commercialize it. In contrast, with SMEs there usually is a conspicuous characteristic closely associated with them, namely lacking a mature consumer base. Thus historically it is usually the SMEs that open up a new industry.

However, departing from old consumer base and developing new ones is not only risky, but also costly. As Schumpeter long ago pointed out that replacing an existing product and method of business with a new one is expensive. Allowing patenting a new business method not only nourishes a SME's own development, but also helps with developing a consumer base that is actually beneficial to the growth of a new industry. For example, newspaper can be reduced into a simple business method: the industries pay a large portion through advertisements for the reader to receive cheap and updated information. Although this business model survived in the eighteenth century, it could face serious competition today.²⁴² That is why Google patented its Adwords.

²⁴² "Method and apparatus for facilitating targeted advertising patent description", U.S. Patent Application No. 20080052153 (22 August 2006).

In his paper, Hall points out, “another effect of stronger patents in the semiconductor industry”, which is “it appears to have facilitated the entry of pure ‘design’ firms, those which produce semiconductor designs but do no manufacturing.”²⁴³ And he continues, “This fact was supported both by interview evidence (executives reported that patents were important for securing venture capital financing where there were few other assets) and by the fact that the share of design firms in the industry went from approximately zero per cent in 1982 (before the strengthening of the system) to 30 per cent in 1995.”²⁴⁴

In a word, BMPs can help SMEs better grasp new opportunities in new businesses.

3.4.4. Attracting Further Investment

All kinds of companies need financing. The initial investment is usually the most important for a company’s survival. For SMEs, they face more difficulties than the larger corporations do in terms of attracting investment. Although currently investors still remain reticent about their general opinion towards BMPs, which is largely due to the fact that the legal status of BMP itself is not predictable yet, there are many empirical studies showing that venture capitalists do pay a particular attention to BMPs in a company in which they attempt to invest.

In Hall’s paper, it shows that “In many cases, the first step taken by an inventor/entrepreneur with an idea for an internet-based business model is to attempt to acquire a patent on it, and certainly one of the first questions asked by the venture capitalist he approaches for financing is whether the startup owns patents on its technology.”²⁴⁵

A recent survey also found out that “startup executives reported that nearly 70% of venture capital firms and 50% of angel investors said that patents were important to their

²⁴³ *Supra* note 23.

²⁴⁴ *Ibid.*

²⁴⁵ *Ibid.*

investment decisions.”²⁴⁶

Logically, it is understandable that inventors would like to see patents in the company they intend to invest. This inclination varies with SMEs and larger corporations. With SMEs, who usually lack a full financial record history or other assets that can be mortgaged, patents can play a more important role. As a scholar points out, “The business method patent will surely be a boon for a startup companies so that new companies could benefit from such kind. It will surely help the new companies to stand in front of the powerful companies.”²⁴⁷

3.5. Prospect: The Possibility of a ‘sui generis’ Protection System of Business Methods

Considering the unique traits of business methods innovation, it might be beneficial to devise a more tailored protection mechanism for it. Hypothetically, there are two aspects of BMPs that legal engineering could focus on: the duration of the protection and the scope of the exclusive rights.

As far as the patent term is concerned, there are some properties of BMPs that do not fit well with current 20 years framework. Unlike the case for other types of patents where technological change and short product life-cycles could render the patented article outdated very rapidly, a successful business method tends to be long-lived, which in turn puts its patent into an awkward position. For instance, the method employed in a 1930s cash registering machine might still be very advanced even by today’s standard. In this sense, even copyright sometimes does a better job in protecting the business method than does a patent, if the only implementation of the

²⁴⁶ Ted Sichelman, “Guest Post: Why *Bilski* Benefits Startup Companies” (2010), online: Patently-O <<http://www.patentlyo.com/patent/2010/06/guest-post-why-bilski-benefits-startup-companies.html>>. See also Stuart J. H. Graham et al., “High Technology Entrepreneurs and the Patent System: Results of the 2008 Berkeley Patent Survey” (2009) 24 Berkeley Technology Law Journal 255.

²⁴⁷ *Supra* note 17.

idea is printing it out and not involving other steps.²⁴⁸

On the other hand, someone could argue that the current duration is too long for BMPs, considering that such monopoly tends to be overly broad and monopolistic. For example, Jeff Bezos, CEO of Amazon.com, once publicly suggested that the patent term be reduced from 20 years from the time of application to three to five years for software and business method patents.²⁴⁹ The debate over how long a term should be for BMPs is not likely to be determined in the near future.

Regarding the scope of the exclusive rights, under current legal framework what a BMP really protects boils down to a combination of technical methods, rather than commercial methods. A technical method can be implanted into any commercial practices as long as it is applicable, hence the overly monopolistic power. For instance, a method and system for enhancing bond-trading security through limiting the transaction time can be easily applied to currency exchange, future trade, etc. Such a BMP can acquire monopolistic power over many different industries. This problem can be addressed by limiting the scope of a BMP to a specific industry. For example, if we introduce a category system that divides the whole economy into different sectors and one BMP can only enjoy exclusive rights within one sector, there would not be overly broad claims.

3.6. Conclusion to the Chapter

The issue of business method patenting is a complex one, spurring legal, economic and philosophical debate.

First, allowing patenting on business methods is very controversial. There are a number

²⁴⁸ A good example would be business forms, which was illustrated in *Bulman Group Ltd. v. "One Write" Accounting Systems Ltd.* 1982 Fed. Ct. Trial Div.

²⁴⁹ See *supra* note 121.

of concerns over the legitimacy of BMPs, among others this thesis discussed the following five, namely abstract nature of BMPs, a lack of technical element, pervasiveness and its inevitable consequential overly monopolistic power, practical difficulties in examination, and finally, the reality and future potential of being misused and abused.

There is a remarkable consensus that the expertise of patent examiners in the relevant areas and the prior art searching facilities including databases should be enhanced, regardless of whether the scholar is pro-business-method-patenting or anti-business-method-patenting. There is also a consensus that purely abstract ideas should not be granted patent. However, upon the rest of the concerns there seems to be no consensus yet.

In regards to more recently so-called “patent trolls”, it is still unclear whether such activities are an unavoidable element of any patent system, or is it due to some imperfect aspect of the current legal system. The critics of trolls claim that the existence of such companies leads to a waste of social resources, while trolls themselves claim that they are helping inventors defend large corporations from stealing their hard-earned patents, which would otherwise be used for free in most of the cases.²⁵⁰

This Chapter went on to reflect the historical anti-patent movements. The cyclic public sentiments towards patents reveal that current anti-BMP sentiments may not be well-justified and could fade away in future as the economy develops.

Third, although complex, the economic analysis and philosophical reasoning lead to the conclusion that allowing business method patenting can best benefit the society. One important aspect of the benefit of patents was discussed, namely promoting investment and marketing efforts on an innovation. Lacking adequate patent protection, a market could be locked in a constant stagnancy.

²⁵⁰ *Supra* note 54.

Fourth, empirical studies and philosophical reasoning indicate that BMP favors SMEs. For SMEs, acquiring a BMP can be pivotal to their survival. Although larger corporations could also benefit from BMPs, the importance of BMPs to them is not comparable to the importance to SMEs.

Finally, the possibility of a “sui generis” protection for BMPs was discussed, with the focus on two aspects of modification to current BMP framework, namely the duration of protection and the scope of exclusive rights.

Chapter 4 Achilles' Heel of the Business Method Patents: Cross-border Enforcement

Although patent law is generally considered territorial, the Internet and globalized E-commerce have gravely challenged this traditional belief in an unprecedented way. This chapter examines to what extent cross-border infringements can undermine a BMP and why it is so.

Generally speaking, it is now clear that the divergence among countries with regard to business method patenting has placed patent enforceability issues in an awkward position. There have been a number of factors that make up this complex picture. Primarily the following factors have been identified to contribute to this unique complexity.²⁵¹

4.1. Global E-commerce Practices and Jurisdiction Problems

As we have witnessed, the advent of the Internet and E-commerce has made international business process application much easier and cheaper than ever before. Now you can order a book online from Amazon.com, regardless of where you reside. You can also receive pay-cheques regularly from Google Inc. if you have participated in its AdSense project, no matter where you live on this planet. However, as WIPO put it, E-commerce is also a “borderless medium” that inherently comes with a multi-jurisdictional conflict.²⁵² Such a multi-jurisdictional conflict manifests vividly in cross-border patent enforceability.

In the U.S. the Tariff Act of 1930 provides a special section, Section 337, dedicated to intellectual property protection.²⁵³ However, in order to invoke Section 337, the patent holder must prove connection between the infringement of the patent and the imported articles, which is

²⁵¹ Note that this Chapter is mainly drawn on the U.S. context unless otherwise indicated, given that the U.S. BMP model is most fully-blown and convergent from other countries.

²⁵² World Intellectual Property Organization, Primer on Electronic Commerce and Intellectual Property Issues, online: WIPO < <http://ecommerce.wipo.int/primer/section1.html>.>

²⁵³ *Tariff Act*, 19 U.S.C. § 1337 (1994).

particularly difficult, if not impossible, for BMPs.²⁵⁴ To prove patent infringement, Section 337 of Tariff Act invokes Section 271(g) of the Patent Act²⁵⁵, which is completely impotent in addressing the BMP infringements, for which the background computing activity is placed in a foreign jurisdiction. There are two reasons for this impotency: 1) it requires establishment of the alleged patented process being the sole method of manufacturing the imported article, which is very difficult for the cases where the patented process only expedites rather than directly causing the result; 2) other than manufacturing, it completely disregards infringements involving a business method application being used in ordering, confirming an order, or shipping a product, etc.; it is for these fields that BMPs are more heavily deployed.²⁵⁶ Thus the reality is that a U.S. business method patent is not only un-enforceable extraterritorially, but also unable to block the import of the infringing goods or services from a country where business methods are not eligible patentable subject matter.²⁵⁷ Imagine if one of Amazon's competitors established an online bookstore based in Mexico and entirely mimic the patented "one-click" business model. Even though the infringement exists, the U.S. custom is unable to block the delivery by the foreign based online bookstore to the U.S customers under the current framework.

This reality puts a company whose main business, by its very nature, very easy to be placed and delivered outside the U.S. jurisdiction, into an awkward position.

4.2. An Increasing Anonymity and Vagueness of Intangible Products

The Internet not only has made possible the separation of one company's physical presence and its business activities, but also has made possible a greater anonymity on the both

²⁵⁴ See Larry A. DiMatteo, "The New "Problem" of Business Method Patents: The Convergence of National Patent Laws and International Internet Transaction" (2002) 28 Rutgers Computer and Technology Law Journal 1.

²⁵⁵ *Patent Act*, 35 U.S.C. § 271(g).

²⁵⁶ *Ibid.*

²⁵⁷ *Ibid.*

sides of sellers and buyers. Even without intentional anonymity, the complexity of online E-commerce has made identifying buyers and sellers much more difficult than ever before. This change has led to the reality that locating a liable defendant for an infringement much more difficult.

Along another dimension, nowadays business practices on the Internet have been increasingly involving transactions of intangible goods, e.g. E-books, i-tune music, electronic tickets and more recently numerous Apps, etc. Unlike tangible products, which must be physically imported into a country in order to constitute a patent infringement in that jurisdiction, a business method patent can easily be infringed without importing, or whatever else the infringing activity is, being present within that territory. As analyzed earlier, this feature of E-commerce would leave no connection for a cause of action. It is fair to argue that “the globally seamless web of interaction is inherently inconsistent with the jurisdictional approach of applying the laws of a fixed territorial state.”²⁵⁸, and this has been worsened by the increase of intangible goods traded online.

A recent U.S. case best illustrates this. In *Yangaroo v. Destiny Media Tech*, the patent in dispute protects a particular method of distributing a content file over a network.²⁵⁹ It works as a file sharing group. The recipient has to go through several procedures before it can get access to the shared file. The Canadian company Destiny “distributes encrypted music files using a method that (arguably) would infringe the patent under 271(a) if it had been performed within the US.”²⁶⁰

The case turns on whether the digital music files could be considered “products” within

²⁵⁸ *Supra* note 254.

²⁵⁹ “When Can a Digital File be a ‘Product’ under Section 271(g)?”(2010) online: Patently-O <<http://www.patentlyo.com/patent/2010/06/untitled-1.html>>.

²⁶⁰ *Ibid.*

the meaning of the Section 271(g) of the U.S. Patent Act,²⁶¹ which states: “Whoever without authority imports into the United States or offers to sell, sells, or uses within the United States a product which is made by a process patented in the United States shall be liable as an infringer. . .”²⁶²

Judge Griesbach awarded summary judgment of non-infringement, ruling that the Canadian-based defendant's operation did not constitute an infringement,²⁶³ on the ground that “the distributed music file was not a ‘product’ of the method because the music file was not created by the claimed process.”²⁶⁴

4.3. Divergence among Countries and Difficulties in Cross-border Enforcement

As described in previous chapters, there exists a divergence among different countries in regards to business method patenting. This divergence serves a threat to BMPs enforceability at an extra-territorial level.

If the divergence did not exist, the difficulties in enforcement of the business method patents would not be evident and could be easily redressed either by obtaining a personal jurisdiction that directs towards the patent laws of the country where the infringement occurred, or by directly multi-jurisdiction filing through PCT applications in the first place. However, as analyzed in this thesis, gaps concerning patentability issues do exist, making such redress useless.

²⁶¹ *Ibid.*

²⁶² *Patent Act*, 35 USC 271(g).

²⁶³ *Yangaroo v. Destiny Media Tech*, 2010 E.D. Wisc.

²⁶⁴ *Supra* note 259.

In their article, William Fisher and Geri Zollinger argue that “It would be very easy to create a website in Canada or some other country to escape infringing a U.S. patent, with the non-U.S. website equivalent to one created in the U.S. in every way. In that case, a U.S. patent would be almost worthless.”²⁶⁵ This illustration is very accurate. The U.S. jurisprudence emphasizes “minimum contacts” when it comes to cross-jurisdiction enforcement,²⁶⁶ while Canadian courts consider “real and substantial connection”²⁶⁷. In the U.S., In *Rostad v. On-Deck, Inc.*, the Minnesota Supreme Court listed five factors concerning the establishment of minimum contacts with a jurisdiction: “(1) the quantity of the contacts with the forum state, (2) the nature and quality of the contacts, (3) the source and connection of the cause of action with these contacts, (4) the interest of the state providing a forum, [and] (5) the convenience of the parties.”²⁶⁸ In essence, the rationale of both “minimum contacts” and “real and substantial connection” is to “afford some protection against being pursued in jurisdictions having little or no connection with the transaction or the parties.”²⁶⁹ Such tests allow for the discretion of the judge to balance the fairness and interests between the plaintiff and the defendant.²⁷⁰ It seems to be an analogy in international private law to the principle of “lifting the corporate veil” in

²⁶⁵ William Fisher and Geri Zollinger, “Business Method Patents Online” (2001), Berkman Center for Internet & Society at Harvard Law School, online: Berkman Center for Internet & Society <<http://cyber.law.harvard.edu/ilaw/BMP/>>.

²⁶⁶ See *Int'l Shoe Co. v. Washington*, 1945 326 U.S. 310, 316-20. See also American Bar Association, “Achieving Legal and Business Order in Cyberspace: A Report on Global Jurisdiction Issues Created by the Internet” (2000) 55 *Bus. Law.* 1801, 1834. See also Katherine Neikirk, “Squeezing Cyberspace into International Shoe: When Should Courts Exercise Personal Jurisdiction over Noncommercial Online Speech?” (2000) 45 *Vill. L. Rev.* 353. See also Tapio Puurunen, “The Legislative Jurisdiction of States over Transactions in International Electronic Commerce” (2000) 18 *J. Marshall J. Computer & Info. L.* 689. See also Larry A. DiMatteo, “The New “Problem” of Business Method Patents: The Convergence of National Patent Laws and International Internet Transaction” (2002) 28 *Rutgers Computer and Technology Law Journal* 1.

²⁶⁷ See *Braintech, Inc. v. Kostjuk*, 171 D.L.R.4th 46 (1999), 134 at 48.

²⁶⁸ 372 N.W. 2d 717 (Minn. 1985).

²⁶⁹ *Braintech*, 171 D.L.R.4th, at 56-57. See also Larry A. DiMatteo, “The New “Problem” of Business Method Patents: The Convergence of National Patent Laws and International Internet Transaction” (2002) 28 *Rutgers Computer and Technology Law Journal* 1.

²⁷⁰ Larry A. DiMatteo, “The New “Problem” of Business Method Patents: The Convergence of National Patent Laws and International Internet Transaction” (2002) 28 *Rutgers Computer and Technology Law Journal* 1.

corporate law, i.e. only under extreme circumstances, such as false advertising, deceptive trade practices, or fraud etc. that the court would go beyond the norm and “the quantity and quality of the contacts are of less importance.”²⁷¹ Business method patents seem lacking such legitimacy in most cases, hence the difficulties.

²⁷¹ *Ibid.*

Chapter 5 A Global Picture: Bi-directional Implications between the U.S. and PRC

Up till now, this thesis has covered much of BMPs developments and rationales. What are the connections between the researched two countries then?

First, the U.S. jurisprudence developments do have an immediate and significant impact on China, as demonstrated by the following example.

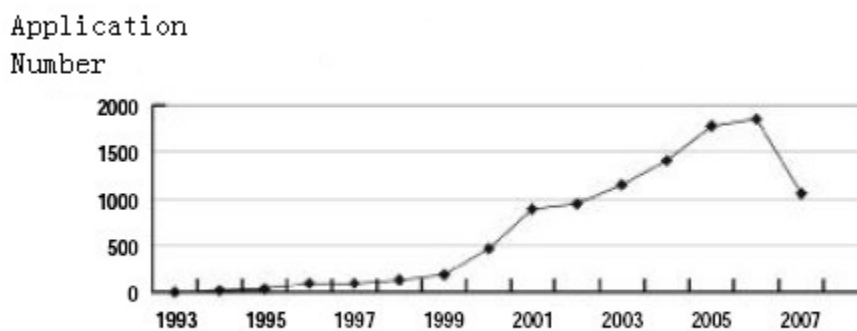


Figure 3: Annual Statistics of BMPs Application Filed to State Intellectual Property Office (Source: SIPO)

The above chart illustrates how fast the industry in China reacted to the U.S. business method patenting developments. Note that prior to early 1999, BMP applications filed to SIPO were insignificant. However, after 1999 the number skyrocketed. Why was it so? The answer is an external factor from the U.S., namely the *State Street Bank* case.

Because of a lengthy pendency period, any rational market participant would not wait until the regulations clear up, then to file a patent application. Rather, they tend to file first even before the legal situation is not clear yet, to secure a spot in the applicants' line.

As a matter of fact, the two researched countries do impact each other on the issue of BMPs. Such mutual impact is usually more complicated than the above example. This Chapter analyzes these mutual implications between the U.S. and China.

5.1. A Glimpse into the Unwritten Policy Orientation of the U.S. and P.R. China

From a policy-making perspective, one country's patent regime should always benefit its own economic interests. As economic interests shift, the patent system should reflect such shifts. For the U.S., economic theory always prevails. As put into its legislation, "the patent monopoly was not designed to secure to the inventors...natural right(s) in (their) discoveries. Rather it was a reward, an inducement, to bring forth new knowledge."²⁷² As for judiciary procedures, Siems points out that "US research has often found that judges may compose their judgment in a formal way of deduction, but in substance they mainly pursue policy objectives."²⁷³

Since 1980s, the U.S. has adopted a pro-patent stance, which had a tremendous significance. The pro-patent stance has been concurrent with the U.S. knowledge economy exports. Such a combination has brought the U.S. a competitive advantage.

China recently has exhibited an inclination to follow the European model regarding patent issues. However, after all it is still economic interests that play the most important role. Concerning BMPs, on the one hand, Chinese examiners generally deem BMPs as mental activities, thus not eligible patent subject matters. On the other hand, creative business models are few and far between in China, leading to a policy that restricts exclusive rights on such

²⁷² See Mathias M. Siems, "Legal Originality" (2008). 28 Oxford Journal of Legal Studies 147. See also *Graham v. John Deere Co.* 1966 383 U.S. at 8-9.

²⁷³ See Siems, *supra* note 272. See also e.g. B. N. Cardozo, *The Nature of the Judicial Process*. (New Haven: Yale University Press, 1921). See also Jerome Frank, 'Are Judges Human?' (1931) 80 U. Pa. L. Rev. 17. See also J. Frank, *Courts on Trial*. (Princeton: Princeton University Press, 1949). See also W. Rumble, *American Legal Realism: Skepticism, Reform, and the Judicial Process*. (Ithaca: Cornell University Press, 1968). See also Alex Kozinski, "What I Ate for Breakfast and Other Mysteries of Judicial Decision Making" (1993) 26 Loy. L.A. L. Rev. 993-999.

innovations.

Is there a possibility that China will adopt a pro-BMP stance in the future? Unlike other technology-oriented inventions, BMPs do not demand huge R&D infrastructure and investment, so there is a possibility that one day China may find allowing BMPs would benefit itself.

5.2. Incorporating Externalities into Business Method Patenting Policy Analysis

In economics, the term “externality” describes spillover values that are not considered in transactions or activities. The Oxford English Dictionary provides the following definition:

“externality, n. Add:

5. Econ. A side-effect or consequence (of an industrial or commercial activity) which affects other parties without this being reflected in the cost of the goods or services involved; a social cost or benefit. Cf. SPILLOVER n.”²⁷⁴

For clarification, a specialized dictionary provides the following definition.

“externality

A cost or benefit arising from any activity which does not accrue to the person or organization carrying out the activity. Negative externalities cause damage to other people or the environment, for example by radiation, river or air pollution, or noise, which does not have to be paid for by those carrying out the activity. Positive externalities are effects of an activity which are pleasant or profitable for other people who cannot be charged for them, for example fertilization of fruit trees by bees, or the public's enjoyment of views of private buildings or gardens. Externalities may be technological or pecuniary. Technological externalities affect other people in non-market ways, for example by polluting their water supply; they create a prima facie case for intervention in the interests of efficiency. Pecuniary externalities mean that other

²⁷⁴ The Oxford English Dictionary, 2d ed., s.v. “externality”.

people are affected through the market: for example, the emergence of a new industry may raise labour costs for other employers, or reduce the value of their capital by capturing their customers. Pecuniary externalities do not create any prima facie case for intervention, except possibly on grounds of income distribution. See also compensation for externalities; consumption externality; internalizing externalities; network externality; production externality.”²⁷⁵

The above definition provides us with many vivid analogies in legal analysis. In environmental law, much literature employs externalities analysis.²⁷⁶ This is largely due to the fact that many negative externalities are associated with the environmental consequences of production and consumption. However, the environment is by no means the only passive and vulnerable victim, or “witless pawn” of negative externalities. For instance, in China there exists a longstanding custom that before marriage, the groom (or his family) must pay a reasonable amount of cash as a “marriage gift” to the bride’s family to initiate the transaction. The amount of money, although arbitrarily determined by the two parties of the marriage, is strongly influenced by other couple’s historical records. Thus a higher-than-standard payment not only facilitates the payer’s own marriage, it may also raise the bar and leave the relatively less wealthy groom unable to complete his courtship, even when he sincerely falls in love with his bride. To address this problem of ‘externalities’, Chinese Marriage Law provides that, “Marriage upon arbitrary decision by any third party, mercenary marriage and any other acts of interference in the freedom of marriage shall be prohibited. The exaction of money or gifts in connection with marriage shall be prohibited.”²⁷⁷ Indeed externality analysis should not be

²⁷⁵ "externality" A Dictionary of Economics. John Black, Nigar Hashimzade, and Gareth Myles. Oxford University Press, 2009. Oxford Reference Online. Oxford University Press. University of Victoria. 19 February 2010 <<http://www.oxfordreference.com/views/ENTRY.html?subview=Main&entry=t19.e1134>>.

²⁷⁶ See e.g. Mark Sagoff, “Economic Theory and Environmental Law” (1980-1981) 79 Mich. L. Rev. 1393. See also Henry N. Butler & Jonathan R. Macey, “Externalities and the Matching Principle: The Case for Reallocating Environmental Regulatory Authority” (1996) 14 Yale Law & Policy Review 23.

²⁷⁷ *Marriage Law of the People's Republic of China*, 2003, s.3.

limited to only environmental law or family law, many other areas of law also exist with externalities.

Take the U.S. Foreign Corrupt Practices Act (FCPA) of 1977²⁷⁸ for example. The FCPA was enacted “after Congress discovered that more than 400 corporations had made questionable or illegal payments in excess of \$300 million to foreign officials for a wide range of favorable actions on behalf of the companies.”²⁷⁹ It is designed to address accounting transparency requirements under the Securities Exchange Act of 1934 and bribery of foreign officials by U.S. individuals and entities.

However, many people do not quite understand why the U.S. chooses to penalize behaviors that ostensibly do no harm to their own country. Moreover, for the purposes of this thesis, where are the externalities of FCPA legislation?

To answer these questions, first let us examine this: Is anti-corruption the only aspect that the FCPA can bring benefits to the U.S.? The answer is no. In a course of bribery transaction, the two parties involved are a foreign official and an U.S. businessman (the briber). Do prices (the bribe paid by the payer) reflect the full costs or benefits in production or consumption of a product or service incurred by the payer? Or put more straightforwardly, does the bribe paid by the unscrupulous businessman equal the benefits provided by the foreign corrupt official? Definitely no. If they are equal, nobody wants to commit bribery. The benefits must exceed the bribe itself, hence the incentive. Where does the difference in value come from? The third party, the local society or the general public pay the difference. Here spillover values, or the externalities, emerge. In this case, there is a negative externality and those who suffer from these external costs do so involuntarily.

²⁷⁸ *Foreign Corrupt Practices Act*, 15 U.S.C. §§ 78dd-1, et seq.

²⁷⁹ Robin Miller, “Construction and Application of Foreign Corrupt Practices Act of 1977” (2005) American Law Reports ALR Federal 2d, 6 A.L.R. Fed. 2d 351.

Is the purpose of FCPA being out of the U.S. sympathizing local people in a foreign country who are becoming end-losers of such bribery games? Maybe, but this is still not the whole picture. Indeed there is more hidden spillover value that is even less apparent. Allowing U.S. businesses to bribe in a foreign country will inevitably drive up the local price of bribery, which is harmful for everybody except for the local officials in the long run. Even more importantly, by allowing such bribery to occur in a foreign country, especially on a regular basis, morale and true entrepreneurships of the U.S. domestic firms would suffer. If Company A from Country 1 can accumulate great wealth fast and easy by bribing Country 2's government officials, why should Company B of Country 1 continue to invest heavily and make honest efforts to do business and serve its countrymen in Country 1? Company B should immediately sell all its assets in Country 1, join Company A and seek out more corruptible government officials in Country 2. Capital and talents will be very likely to drain in Country 1 in this case.

What is the relevance of the FCPA to patent policy then?

As we know, capital always seeks profits, which is a universal theorem. Take my home country, China, as an example. There have been a number of enterprises which experienced boom-and-bust in a very short period of time. Many of them share one important mistake, namely diverting from their main business and flocking to those more profitable sectors (usually also heavily regulated sectors) after gaining their primary capital. The unsaid circumstance here is that doing business in such high-profit sectors often involves bribery. Such unfairly defined property rights actually castrated the driving force of innovation in a society. If Microsoft were in a loosely regulated legal environment, where it can do whatever seems profitable, is it still able to grow into a global leader in computer software industry? Chances are it could have ended up becoming a real estate developer, given the greater profit margins in real estate industry in

some areas. Or worse, it could have been involved in many scandals where opportunities and risks are equally huge. An anti-bribery act such as the FCPA not only regulates corruptions, but also has a strong demonstration effect that signals enterprises to choose the innovation over speculation, thus guiding those enterprises to wholeheartedly dedicate to innovation. From the policy point of view, the U.S. legislation of the FCPA is not only *right*, but also very *wise*, because it is in a country's long-term interest.

Indeed, historically the FCPA and the Patent Act have been working together to promote an entrepreneurial society for the U.S. By the same token, any invention is a commodity with positive externalities. This means in the absence of legal intervention (patent protection), an external benefit of the invention would increase the utility of third parties while the inventor cannot monetize those benefits, leading to a situation where less of invention is generated than would be optimal for society as a whole. The FCPA redresses negative externalities by criminalizing bribing foreign officials and block the broad way of easy money, while the Patent Act redresses positive externalities by internalizing the benefits to the inventors and encouraging taking the narrow gate of innovation. Under these two redressing forces, the resources in a society can be optimally allocated and the collective societal welfare is improved.

Now, finally, let us return to the purpose of this Chapter, how could incorporating externalities be helpful to BMP policy analysis?

Externalities are not necessarily localized. One country's patent policy can have a spillover value for another country, which in turn, can reflect back and influence the original country's societal warfare in a new way.

The invention of the patent system is a boon to every intellectual who owns the most valuable assets, knowledge, in this world, regardless of their nationality. A more positive stance

towards business method patenting in the U.S. not only promotes its own innovation and utilization of great business ideas, but also provides a reference frame for the rest of the world.

Currently, although enjoying 300 million web users, China's E-commerce is still unproportionately lacking, largely due to a lack of effectively enforceable Intellectual Property system. If U.S. adopts a pro-BMP stance, there could be a "demonstration effect" to China, which is the implication in one direction.

The implication from another direction is also there. If U.S., the most liberal BMP system now chooses to step down, it does not seem that BMP will still be existent. U.S. itself will suffer from this situation. Consider this, there is an interesting phenomenon when taking a look at China's major E-business landscape; almost every successful business method is exactly a copy of its U.S. counterpart. For example, Baidu.com is China's largest online search engine company, whose business model is exactly the same as Google.com. Youku.com, China's largest online video sharing website is basically an imitation of YouTube.com. China's Kaixin.com operates exactly the same way as facebook.com. The loss does not stop here. Will Google.com be able to sue and constrain Baidu.com, from further imitating its next generation of semantic search methods across jurisdictions? In this sense, if the U.S. promotes a strong pro-BMP stance, that will serve its own interests by somehow pressuring other countries to stop or restrain mimicking its creative business models, hence the bi-directional implications.

Conclusion

At the time of the ending of this thesis, the future of BMPs still holds much uncertainty.

In the U.S., the recent Supreme Court decision on *Bilski* still did not shed much light on what other test(s) may apply in determining a business method's patentability, if "The machine-or-transformation test is not the sole test for patent eligibility under §101."²⁸⁰

In China, despite the growing quantity of its BMP applications, also despite the fact that its own service industries, in particular its E-commerce, are becoming more and more significant in its overall economy, in its 2008 amendment to Patent Act, the articles governing business method patenting was tightened. The "technical requirement" article that was previously put in Implementing Regulations now has been put into the Patent Act.²⁸¹

Still, many of the fundamental underpinnings of the rationale of BMPs remain elusive. The line between "new and useful process" and "abstract ideas" in patentability test, for instance, is poorly defined. It is unclear where, if any, the line to draw that would optimize innovation, competition, and a better society. The long-standing "Patent Paradox" is also present in business method patenting issues. Moreover, the complexity of international enforcement further adds to the vagueness of the boundary defining business method patenting. Current debates on the issue of patentability of business method, in China and in the Western countries alike, are value-laden and complex, usually entailing a lot of tradeoffs in a law and economics sense. However, the issue is better to be considered in whole, rather than in parts, focusing locally on one country.

Historically, as Robert P. Merges points out, "Patent law, no less than copyright and

²⁸⁰ *Bilski v. Kappos* 2010 U.S. Supreme Court 561 U.S. (08-964).

²⁸¹ See *Patent Act of the People's Republic of China (Amended in 2008)* s. 2 (2). For a comparison, see also *Implementing Regulations of the Patent Act of the People's Republic of China* (2006), s.2.

trademark, has had to adapt to several major waves of innovation this century.”²⁸² Indeed it will continue to adapt. In prospect, in this increasingly globalized world economy, the only thing that remains the same is change. Invention and innovation, without any doubt, are the driving forces of this change. Intellectual Property law, as a law regulating inventions and innovations, is unsurprisingly subject to dramatic change and evolution. One can never predict how the laws regulating human knowledge, the most delicate type of all human assets, will evolve. The Digital Millennium Copyright Act of 1998 quickly became partially outdated after being promulgated at the turn of the century. Just one hundred years ago, Integrated Circuit (IC) designs and semiconductor chips were not foreseeable at all, let alone how to regulate the property rights on them. Then in the U.S. the Semiconductor Chip Protection Act of 1984 came into being, creating a completely new category of IP rights. With business method patents, another novelty type of IP, the only fundamental difference lies in its intangible nature. There needs to be an investment to all developments in our society. By granting an exclusive right to IC design, each of us as a member of society has already paid a price collectively to the generators of new knowledge. When we need to pay another price for innovative business methods, which can be as useful and beneficial as a new integrated circuit, our society seems hesitant. Psychologically as the item becomes more intangible, our buying willingness decreases, if all other factors are the same. However, this thesis argues that we need to pay that price. In addition, from a phenomenology point of view, regardless of the debates, through history the trend is a fortifying and expanding IP, not the other way around.

As a law student, I have always been intoxicated by three great legal inventions in human history contributed to our society, which are insurance, antitrust law and patent.

²⁸² Robert P. Merges, “One Hundred Years of Solicitude: Intellectual Property Law, 1900-2000” (2000) 88 Calif. L. Rev. 2187 at 2215.

First they are all very abstract, transcendental, and sometimes even counter-intuitive. Without a certain amount of expertise people usually cannot understand their beauty. Only those who are willing to examine closely would be amazed at how scientifically the arrangements are designed.

Second they are very useful and beneficial to the society. For example, without insurance, the marine trade in the fifteen century would probably not have had happened at all. The benefits are so far-reaching that our entire history would have been rewritten without them.

Finally it takes a collective understanding and awareness in society to effectively enforce them. Some kind of coordination game is truly pivotal in the above three legal inventions. Around the turn of this new Millennium, business method patents have emerged as one of the latest species of patents, which is likely to mark a new era in the history of patents. The beauty of business method patents has yet to be fully displayed.

Back to the focus of this thesis, what could be the ultimate implication of business method patenting to China, a nation with more than 1.3 billion population but relatively limited natural resources? As mentioned in this thesis, one of the justifications of patent system is that it provides an “orderly exploitation” environment. In absence of such an environment, the prognosis for a country that is rich in human resource may not be held very optimistic.

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