

Are E-Bank Related Business Methods ^[1] Patent Subject Matter under Chinese Law?

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ABSTRACT

In the Citibank-Patent-Case, the underlying issue is whether E-bank related business methods are subject matter of patent under Chinese law. At first flash, there are at least two barriers to patent protection for Citibank to cover. The first, E-bank related business methods only function with the help of computer software, so the coming issue is whether computer software is patent subject matter. The answer is yes, the reasons for that are.... The second, E-bank related business methods are computerized ones, so the remaining issue is whether business methods are patent subject matter. The answer is also yes, the reasons for that are.... So the position of Chinese legislature and government regulation is....

Keywords: business methods, computer programs, patent subject matter, barrier to patent, reason methods and rule

1. INTRODUCTION

On the 5th day of September 2002, a piece of news review in Southern Weekend, headlined "Citibank [2] Has Been Stealing to Apply Patent, When Will Chinese State Owned Banks Wake up from Daydream?" disclosed that Citibank had conducted 19 cases of patent application in china, and all of them involved business methods. [3] When the newspaper scattered all over the country on that day, that piece of review therein had immediately catch people' eyes, no matter who were general readers or employees in the related industries. Even the title itself had meant something. [4]

From the legal point of view, the related patents in the story are patent to invention under The Chinese Patent Act ("PA"); the related business methods, in more specific words, are computer software based business methods; nearly all patents involve E-bank industry, so they may be called E-bank related business method patent. [5]

The issue underlying that story is whether E-bank related business methods are subject matter of patent under Chinese law. [6] This note will discuss this issue. [7] For discussion purposes, Part II will describe the conception of invention under patent law in simple words; Part III will focus on barriers to patent, mainly the barrier of reason rules and methods; And in this part business methods and computer software or programs themselves will also be discussed. Part IV analyzes in two perspectives whether E-bank related business methods are patent subject matter under Chinese law. The final part will give the conclusion to this note.

2. INTIOION UNDER THE CHINESE PA

2.1 Invention

Under the Chinese PA, invention is one of the three kinds patent subject matter. [8] But what is an invention?

In simple words, invention is a kind of technical solution. [9] For example, the traditional Chinese paintings are mostly drawn on one kind of paper called "Xuanzhi". Because of the special property of that kind paper, it is very difficult to print these paintings in Xuanzhi with modern print machine. This is a time-consuming and unsolved technical puzzle. There is a hero, who is a Shenzhennese, called Zhuang Zhihe, and he has succeeded in achieving a solution. With distinctive arrangement of printing process, the similar machine the industry has employed can print the traditional Chinese paintings in Xuanzhi. [10] What Zhuang Zhihe has achieved is a technical solution for a concrete technical issue. Invention under patent law is such kind of solution. [11]

It is necessary to remind, the cited invention above involves a solution to process of product. An invention may also be a solution concerning products themselves. The exact example is the solution concerning the traditional Chinese paintings [12] printed with the patented process. [13]

If we say those two kinds above are groundbreaking ones, then an invention under patent law may be an amendment to either of them too. For example, an amendment to the printing process or printed product for which Zhuang Zhihe claimed a patent. [14]

It is with those three kinds of invention in mind that the Chinese Implementation Rule of Patent Act("IPA") article 2 section 2, using legal terminology, generalize like this: "Invention is a ... technical solution concerning product, process or amendment to either of them."

2.2 Disclosing files to invention

In order to apply a patent for an invention, the applicant shall describe the invention as required and disclose. The required writings include abstract, specification, claims and so on. And the claims is the most important

one of them, since it is this file that describes the technical characteristics of the related invention. [15] For example, with regard to the process invention of Zhuang Zhihe, the claims to that states in such a structure: "a process for plate making and printing... the characteristics of it is..." [16]

The claims structure of products invention is similar. For example, the Chinese Patent No.90101931 is a process and product combined patent. Claim 1 to that Patent claims a solution about a battery and describes in the similar structure like this: "a battery is made up of... the characteristics of it is..." [17]

In a word, it is through describing the characteristics of the involved invention that the claimed invention is circled with bright lines from the prior art.

3. BARRIERS TO PATENT PROTECTION

Under the Chinese PA there are active and passive requirements for patent protection. The active requirements are novelty prong, non-obviousness prong and usefulness prong; the passive requirements are barriers or exceptions to patent protection. [18] What this note will involve is one kind of barrier, i.e., the barrier of reason rules and methods.

3.1 Barrier of reason rules and methods

Reason rules and methods are rules and methods for thinking, recognizing, judging or remembering of human being. [19] In any sense they are not technical solutions, so they are not invention in the sense of patent law. [20] Just because of that, the Chinese PA holds that they are barrier to patent protection. [21] And those rules and methods include but are not limited to: special methods for patent examination, methods and systems for organizing, producing, executing or managing, computer languages or algorithms, statistic, accounting or recording methods, computer programs and so on. [22]

Another step further, the Examination Guide clarifies, if an application claims reason rules and methods only, the applied patent cannot be issued; however, an application claims something else besides reason rules and methods, and the decisive factors in that application are not the said reason rules and methods, the patent can be issued, that is, that application claims the patent subject matter. [23]

3.2 Computer programs

One item of reason rules and methods is computer programs. [24] But what is a computer program? It will be pretty well that we take system program as an example to explain this issue. A system program is mainly a unit of integrated three parts. First, is User Interface; second, is hardware and software drive; third, is data process. And the third is the most important one. After a user has driven the hardware and software, he

will enter some data into the computer via the User Interface, and these data be processed by the data process. This process is made up of two parts, first is data structures and second is algorithms. The data structures will organize all input data for the algorithms to process and the algorithms will process all input data organized by the data structure first. [25]

The data process is written with computer languages. The languages may be assembly languages, high-level languages or something else. A program in one language of them is a program in source code. The basic unit of the program is statement. After the program is entered into a computer, it will be translated into machine languages, and the result from that translation is a program in object code. The basic unit is instruction. [26]

So the Chinese Regulation of Software Protection article 3 subsection 1 provides: "Computer program, refers to a sequence of coded instructions to achieving a specific result which can be executed by such devices as computers that have information-processing capacity, or a sequence of symbolized instructions or symbolized statements which can be automatically converted into a sequence of coded instructions. The source code text and object code text of the same program shall be deemed to be the same and one work." Examination Guide adopts this definition with the only one change that it substitutes the second sentence in the definition with this one: "Computer program includes source code and object code." [27]

With regard to whether a computer program is subject matter of patent, although Examination Guide holds that computer program is a special item of reason rules and methods, but separates it from the other items and deals with independently in other chapter. [28]

3.3 Business method

Maybe the conception of business method was originally from the U.S. federal cases of patent. In patent cases judges sometimes used "business methods" and sometimes "methods of doing business", but they provided no clear definition on either of them. [29] The earlier U.S. federal cases had involved hotel security, [30] method for parking cars, [31] and bank account. [32] As far as these cases are concerned, some items of reason rules and methods under Chinese law at least are equivalents to the U.S. business methods. For example, methods and systems for organizing, producing, executing or managing, statistic, accounting or recording methods and so on. [33]

In the U.S., before *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, [34] it was only some judges who accepted barrier of business methods to patent protection only in dicta. But conventional wisdom and hornbook law had hold that "methods of

doing business" are not patentable, [35] they were exception to patent subject matter.

4. E-BANK RELATED BUSINESS METHODS

With the appearance and development of the Internet, besides the traditional business methods, a new generation of business methods came into existence and became popular. This new generation was computer program based business methods. In general, these business methods may be methods for producing, distributing or accounts recording with the help of the Internet. [36] The business methods for which were applied patent by Citibank in china are mostly computer program based business methods, [37] and much more complicated ones. For example, the electronic money system for which Citibank applied patent and claimed the right of priority was a pending patent in China. Its Claim 1 described a system for transferring electronic notes between processor-based electronic modules; and Claim 5 described a method for transferring electronic notes between processor-based electronic modules. [38] Both of them were Chinese versions translated from the corresponding claims of the U.S. patent [39] upon which the related Chinese application claimed the priority right. [40] Claim 1 of the U.S. patent claimed a product invention and Claim 5 a process invention. [41] It is what Claim 5 of the U.S. patent claimed that deserves discussion. The technical solution claim 5 claimed is one hundred percent a business method. A method for transferring electronic notes between processor-based electronic modules comprises the steps of: establishing a secure session, creating a transfer electronic note and transferring the said transfer electronic note. This process does not work without either of hardware and software, for example, processor-based electronic modules are hardware; the cryptographic algorithms used to establish secure session, are software. But it is neither the hardware nor software themselves it employs. [42] In other words, the software and hardware are necessary for operation of the said process, but the technical solution Claim 5 claimed consists in the process, drives nothing from either of the software and hardware. Of course, the process itself may be integrated into a computer program, [43] but that is another issue. Such kind of E-bank related business methods is business method in its strict sense. [44] From this point of view, that Citibank applied 19 patents for its business methods is not an exact description. [45]

The decisive issue is whether such kind of E-bank related business methods is patent subject matter under Chinese law. Let alone the general requirement for patent protection, [46] from the analytic-logical point of view, there are two relied sub-issues that shall be discussed separately. First, Are computer programs patent subject matter? Second, Are business methods patent subject matter?

4.1 Are computer programs patent subject matter?

(A) Legal position of China

First, the Chinese PA considers reason rules and methods as barrier to patent protection. Examination Guide interprets that reason rules and methods include computer programs. [47] In China Examination Guide is one of government regulations issued by the Patent Office, not statutes passed by the People's Congress. Although there is such a piece of interpretations in Examination Guide, but what it expresses is not bound to be the legal position of China. To our relief, before promulgation of the original version of Examination Guide, [48] there really were decisions of the People's Court that shared the common idea. [49]

Second, Examination Guide chapter 9 covers the application of computer program based invention. [50] This chapter holds that, if an application claims computer programs only, for example, a program recorded in ROM, PROM, VCD, DVD, the related patent cannot be issued; However, an application does not claim computer programs only, and what is claimed intends to resolve technical issues, takes technical measures, and produces technical results, then it is not permitted that the related patent be refused just because of computer programs. [51]

For example, Chinese character coding methods, although they can be used in lexicography and characters searching, but they do not intend to resolve technical issues, take technical measures, or produce technical results. Even if being programmed into computer programs, they are reason rules and methods. Otherwise, with the help of Chinese character coding methods and employing keys board of computer of general purpose, a method for entering Chinese characters into computer can be achieved. This method performs the function of characters inputting and something else. Such a design involves computer programs but itself is a solution for a concrete technical issue. So it is patent subject matter, or patentable. [52] A little regret that, all above restated are only supported by the administrative regulations. But till now none of judicial decisions says no to that.

(B) Reasonableness of that position

Firstly, some scholar held such a position was also accepted by some other Patent Offices in this world, especially, in developed countries. [53] For example, in the U.S., the counterpart exception to patent protection for computer programs is mathematical algorithms [54] and computer programs are mainly algorithms or aggregate of algorithms. [55] As far as this doctrine is concerned, there is no special provision in the U.S. PA, but the U.S. Supreme Court had heard three related cases, and they were *Gottschalk v. Benson*, [56] *Parker v. Flook* [57] and *Diamond v. Diehr*. [58] Although the

Supreme Court did not interpret that doctrine extremely in similar language at these three cases, but the U.S. Court Appeals for the Federal Circuit ("CAPC") at *State Street Bank & Trust Co. v. Signature Financial Group, Inc.* [59] had expressed very clear in 1998 that, mathematical algorithms are not patentable to extent that they are merely abstract ideas, [60] however, a practical application of mathematical algorithms which produces a useful, concrete and tangible result is patentable. [61] Since the Supreme Court denied certiorari on January 11, 1999, that court's opinion had been the law of the land. [62] So the Chinese and U.S. legal positions are different in approach but equally satisfactory in result.

Secondly, the decisive reasonableness consists in computer programs themselves. We may take Adobe Acrobat 5.0 as an example. An end user uploads this program in an intranet, and users in that intranet can download it freely. Such a way of using programs, just involves one hand, using programs as literary work. [63] And another end user downloads and installs it in his computer with Windows XP, he operates the program and transfers a word file called Word-file into a PDF file called PDF-file. Although all steps work automatically, [64] but automate cannot change such a fact that from one product (Word-file) he produces another product (PDF-file). This does mean the program is a process of product. Such a way of using programs, involves another hand, using programs as process of product. In a word, the program has two faces, one face tells us literary work; another face tells us process of product. [65] From the face of literary work, copyright protection shall be accessible for that program; from the face of product process, patent law shall protect that program. [66]

Thirdly, as literary work, computer programs enjoy copyright protection. In nature, what copyright law protects is the expression of computer programs in language, such as machine languages, assembly languages, high-level languages or something else. As process of product, computer programs enjoy patent protection. What patent law protects is the technical solution that consists in computer programs, performing some function or processing something. Computer programs are expressed in languages, but designed to perform some technical function or process something. So enjoying both of them is not conflicting, on the contrary, necessary. [67]

In a word, computer programs as process of product are patent subject matter in China.

4.2 Are business methods patent subject matter?

(A) Legal position of China

In China there is no independent business methods exception. Some items of reason rules and methods are

counterpart to business methods. [68] But there are no judicial decisions to make sure whether business methods may be listed adversely as items of reason rules and methods. For discussion purposes, here presumed they may.

As far as reason rules and methods are concerned, in much more definite words, Examination Guide does hold that, if an application claims reason rules and methods only, the applied patent cannot be issued; but an application involves reason rules and methods, the solution described in the application consists in something other than reason rules and methods themselves, the applied patent can be issued. [69] Such a position is similar to the one concerning computer programs. [70] In a word, if business methods intend to resolve a technical issue, take technical measures and produce technical results, they are patent subject matter. Since conception of business methods is from the U.S. origin, before going further we would restate the legal position of the U.S. first.

(B) Legal position of the U.S.

As far as barrier of business methods is concerned, the U.S. PA is a sister to the Chinese PA. It does not utter a word about that doctrine. The U.S. common law also refuses to hold business methods being exception to patent protection. In *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, [71] CAPC put an end to that doctrine absolutely which had not really existed in the legal world.

Firstly, CAPC held that, since its inception, business methods exception had merely represented some general, but no longer applicable legal principle, perhaps arising out of the requirement for invention. [72] Since 1952, business methods had been subject to the same legal requirement for subject matter applied to any other process or method. [73] It was time to let business methods exception rest forever. [74]

Secondly, CAPC insisted that, business methods exception had never been invoked by CAPC or the former of that court initialed "CCPA". Even if the issue of subject matter was concerned, the court invalidated patents on Abstract Ideas exception [75] created by The Supreme Court. [76]

Lastly, CAPC held: "Even the case frequently cited as establishing the business method exception to statutory subject matter, *Hotel Security Checking Co. v. Lorraine Co.*, 160 F. 467 (2d Cir. 1908), did not rely on the exception to strike the patent." [77] Instead, the patent was declared invalid for lack of novelty and invention. [78]

(C) What is the reason for that position?

Barriers to patent protection in patent law can be

classified into two groups, first, patent subject matter is invention, so what is not invention is barrier to patent protection; second, even if what is claimed in a patent application is an invention, in consideration of legislation policies such as national security patent act forbids to issue patent for that invention. Then all that are forbidden are also barriers. The former, for example, the scientific discovery listed in the Chinese PA Article 25; the later, for example, a matter gained by methods of atomic nucleus that is also listed in the Chinese PA Article 25. [79] Business methods, if they are, are the former. [80]

In the examination proceedings for patent, the Chinese PA Article 25 that lists barriers to patent protection is examination item to the preliminary examination or substantial examination. And the Chinese PA Article 22 that provides novelty prong, non-obviousness prong and usefulness prong is examination item to the substantial examination. [81] For any patent application, the preliminary examination is logically earlier than the substantial examination in time point. So the first step is make sure if an application claims invention; if yes, then the second step is make sure if what is claimed may pass the novelty prong, non-obviousness prong and usefulness prong.

From the two perspectives above, it is sufficient to conclude that, the issue whether business methods are barrier substantially is the issue whether business methods are invention. As far as the later issue is concerned, the conclusion in China and the U.S. are common. If they are technical solution, they are invention under patent law. [82] Logically, it is a sound conclusion. But the decisive word in that statement is "if". If no if, how about that? Are business methods absolutely not invention? Or business methods may be invention? This is a factual issue that needs evidence to confirm.

(D) Is there evidence for that conclusion?

Take the above examples first to prove that business methods may be invention. We have discussed the printing method of Zhuang Zhihe that has been issued Chinese patent. That printing process is a traditional product process. [83] And we also have discussed Adobe Acrobat 5.0 that has received the U.S. patent, a business method to produce one product (PDF-file) from another (Word-file). [84] Let alone the later was patented in the U.S., as far as these two examples are concerned, there is not so much hesitation for us to say that they are members of one family, business methods may be invention.

Perhaps the only pending doubt is that Adobe Acrobat 5.0 is software for office purpose, not the traditional product process. Even if definitely so, this factor is not decisive. Because the patent subject matter is invention, and invention is technical solution. May software only

for office purpose be technical solution? Of course, yes. Then that software may be invention in patent law. In fact, there is another kind of software for office purpose, a method for entering Chinese characters into computer, and that is patented in China. [85]

And the U.S. Patent Office has issued patent for business methods for a long time. In 1779, first business method patent was issued to Jacob Perkins of Massachusetts for "detecting counterfeit notes". Because of a fire in the Patent Office in 1836, all materials about that patent were lost. The first business method patent all files of which were kept well today was patent issued to John Kneass in 1815 titled "a mode of preventing counterfeiting ". And from then on, a lot of patents have been issued for business methods. [86] All these are indirect evidence for the conclusion that business methods may be invention.

All in all, business methods, if intend to resolve technical issues, take technical measures and produce technical results, they are patent subject matter.

5. CONCLUSION

In the Citibank-Patent-Case, the basic issue is whether E-bank related business methods are patent subject matter under Chinese law. The latest Chinese law and regulation hold that, computer programs upon which performance of E-bank related business methods depends, may be technical solution, then they are patent subject matter; and business methods, although are computerized ones in E-bank industry, but may be technical solution, then they are patent subject matter too. So E-bank related business methods are patent subject matter. Although China is a developing country, but in this special field of business method patent, China shares common property ideas with developed countries, for example, the U.S.

With regard to whether a patent may be issued for an individual business method, how that patent is issued, and whether there are some specially applied restrictions for that patent, all these topics afford another note. [87] (10/23/03)

FOOTNOTES

[1]See infra text accompanying note 3, infra note 5 and accompanying text, and infra text accompanying notes 41-44.

[2]The original Chinese words in that piece of news review are "Citibank", but the real applicant to patents is Citigroup. This note will keep on using the word "Citibank". See Wang Feng and Ma Ling, Citibank Has Been Stealing to Apply Patent, When Will Chinese State Owned Banks Wake up from Daydream?, Southern Weekend, September 5, 2002, <http://finance.sina.com.cn/g/20020905/1444251033.html>(visited Oct. 7, 2003).

- [3]Id.
- [4]See e.g., Han Fenglei, Citibank Entering with Advantage of Patent, The Central Bank Calling for Big Four to Resist, Chinese Management Weekly, December 19, 2002, <http://finance.sina.com.cn/b/20021219/1717292233.shtml>(visited Oct. 7, 2003).
- [5]The author has used "citi" as key word to applicant field, searched in the Chinese patent database (<http://www.sipo.gov.cn>), and checked the search results one by one. The final conclusion is that.
- [6]See Wang and Ma, *supra* note 2.
- [7]But the decisive word in that statement is "whether". This note will only focus on this point. If yes, and in consideration of legislation policies, whether the legislator can establish a barrier to patent is another issue. This note will not discuss this issue here. See generally *infra* text accompanying note 79.
- [8]See Patent Act [PA] art. 2(China).
- [9]See Implementation Rule of Patent Act [IPA] art. 2 section 2 (China) ("Invention is a ... technical solution concerning product, process or amendment to either of them.").
- [10]<http://www.sipo.gov.cn/sipo/zljs/default.htm> (visited Oct. 8, 2003).
- [11]In fact, his method is a patented one. See the Chinese Patent No. 93114279 (issued Dec. 30, 1995).
- [12]See the Chinese Patent No. 93114279 (issued Dec. 30, 1995).
- [13]See *supra* note 11.
- [14]See *supra* notes 9-13 and accompanying text.
- [15]See IPA art. 20 section 2(China)("The claims shall describe the characteristics of invention...so that the protection extension is simply and clearly lined.").
- [16]<http://www.sipo.gov.cn/sipo/zljs/default.htm> (visited Oct. 8, 2003).
- [17]<http://www.sipo.gov.cn/sipo/zljs/default.htm> (visited Oct. 8, 2003).
- [18]See generally Jin Yongjun, The Principle of Intellectual Property Law 33-51(2002).
- [19]See Examination Guide Part Substantial methods"[hereinafter Examination Guide 2.1.3.2] (china)(being promulgated by the original Patent Office in 1993).
- [20]Id.
- [21]See PA art. 25 section 1 subsection 2(china)(reason rules and methods not being issued patent).
- [22]See Examination Guide 2.1.3.2(china).
- [23]Id.
- [24]See *supra* text accompanying note 22.
- [25]See Jin, *supra* note 18, at 270-71.
- [26]See Jin, *supra* note 18, at 271-72.
- [27]See Examination Guide 2.9.1(china).
- [28]See Examination Guide 2.1.3.2(china). See also *infra* Part IV.1.A.
- [29]See, e.g., William D. Wiese, Death of a Myth: the Patenting of Interest Business Models after State Bank, 4 Marq. Intell. Prop. L. Rev. 17, 31 &n.86 (2000).
- [30]Hotel Security Checking v. Lorraine, 160 F. 467 (2d Cir. 1908).
- [31]Loew's Drive-In Theatres Inc. v. Park-In Theatres, Inc., 174 F.2d 547, 81 U.S.P.Q. (BNA) 149 (1st. Cir. 1949).
- [32]In re Wiechers, 347 F.2d 608, 146 U.S.P.Q. (BNA) 52 (C.C.P.A. 1965).
- [33]See *supra* text accompanying note 22.
- [34]149 F.3d 1368, 47 U.S.P.Q.2d (BNA) 1596 (Fed. Cir. 1998).
- [35]See Wiese, *supra* note 29, at 30-31.
- [36]See Michael L. Fuelling, Manufacturing, Selling, and Accounting: Patenting BMs, 76 J. Pat. & Trademark Off. Soc'y 471, 473 (1994).
- [37]See *supra* text accompanying note 5.
- [38]<http://www.sipo.gov.cn/sipo/zljs/default.htm> (visited Oct. 8, 2003) .
- [39]In the U.S. Patent No. 5,799,087 (issued Au. 25, 1998), the applicant claimed: "1. A system for transferring electronic notes between electronic modules comprising: electronic modules each having a processor, a memory, and the capability to create a cryptographically secure channel and transfer and receive electronic notes via said cryptographically secure channel, and where each electronic module stores said electronic notes in its respective said memory; wherein each stored electronic note comprises: a body group of data fields including data indicative of a monetary value associated with said electronic note; a transfer group of data fields including a list of transfer records, where each transfer record is generated by a transferor electronic module and includes a sequence number that distinguishes a transferred electronic note from one or more other transferred electronic notes transferred from a common said transferor electronic module and generated from a common electronic note." "5. A method for transferring electronic notes between processor-based electronic modules, comprising the steps of: establishing a cryptographically secure session between a transferor electronic module and a transferee electronic module; creating a transfer electronic note by appending a transfer record to an electronic note stored in said transferor electronic module, where said transfer record indicates whether all or some portion of a monetary amount of said electronic note is being transferred; transferring said transfer electronic note from said transferor electronic module to said transferee electronic module; and wherein said transfer record includes a sequence number that distinguishes said transfer electronic note from another transfer electronic note from said transferor electronic module." <http://www.uspto.gov/patft/index.html> (visited May 5, 2003) .
- [40]<http://www.sipo.gov.cn/sipo/zljs/default.htm> (visited Oct. 8, 2003).
- [41]See *supra* note 39 and *supra* text accompanying notes 15-17.
- [42]See *supra* note 39.
- [43]See, e.g., *infra* text accompanying notes 62-65.

- [44]See David T. Dutcher, *Patents on Methods of Doing Business*, 79 Denv. U.L. Rev. 173,187 (2001).
- [45]See *supra* text accompanying note 3.
- [46]See *supra* text accompanying note 18.
- [47]See *supra* Part III.1.
- [48]The promulgating year was 1993. The outstanding version was done in 2001.
- [49]See Chen Yongshun et al, *The Selective Cases of Patent Administrative Litigation*(1988-1998) 1-20 (1999).
- [50]Computer programs based invention, refers to, whole or partly, computer program based solution for technical issues. See Examination Guide 2.9.1.
- [51]See Examination Guide 2.9.2.
- [52]See Examination Guide 2.9.3. And see, e.g., the Chinese Patent No. 97120110.
- [53]See Pu Manwen, *The Protection of Computer Programs Involved Invention*, IP Studies 49(1998)(in Chinese).
- [54]See *infra* text accompanying note 60.
- [55]See *supra* text accompanying note 25.
- [56]409 U.S. 63 (1972).
- [57]437 U.S. 584 (1978).
- [58]450 U.S. 175, 177 (1981).
- [59]149 F.3d 1368, 47 U.S.P.Q.2d (BNA) 1596 (Fed. Cir. 1998).
- [60]Abstract ideas are one kind of exception to patent protection created by the Supreme Court. See *infra* note 75.
- [61]See *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368, 1373(Fed. Cir. 1998).
- [62]See Christopher S. Cantzler, *State Street: Leading the Way to Consistency for Patentability of Computer Software*, 71 U. Colo. L. Rev. 423(2000).
- [63]See *supra* Part III.2.
- [64]See *supra* text accompanying note 27.
- [65]See generally Vincent Chiappetta, *Patentability of Computer Software Instruction as an Article of Manufacture: "Software as such as the Right Stuff"*, 17 J. Marshall J. Computer & Info. L. 89,141-43(1998).
- [66]In fact, Adobe Acrobat 5.0 is a patent product. The involved patent is the U.S. Patent No. 4,558,302 (issued Dec. 10, 1985) .
- [67]In fact, the U.S. Patent No. 4,558,302 (issued Dec. 10, 1985) , had not claimed source codes or object codes, but the process that consisted in the program. For example, the claim 107 says : "In a data compression and data decompression method, a compression method for compressing a stream of data character signals into a compressed stream of code signals, said compression method comprising the steps of storing, in the locations of a memory, strings of data character signals; searching said stream of data character signals; inserting into said memory; assigning a code signal corresponding to said stored extended string, and providing the code signal associated with said longest match so as to provide said compressed stream of code signals." <http://www.uspto.gov/patft/index.html>(visited May 5, 2003) .
- [68]See *supra* Part III.3.
- [69]See *supra* Part III.1.
- [70]See *supra* Part IV.1.A.
- [71]149 F.3d 1368, 47 U.S.P.Q.2d (BNA) 1596 (Fed. Cir. 1998).
- [72]Before the Amendment made to PA in 1952, there was no non-obviousness prong in the U.S. PA although that prong existed now. But in common law, there was requirement for invention although it was not so clearly defined. The Amendment to PA 1952 substituted the non-obviousness prong to requirement for invention. See Donald S. Chisum et al., *Principles of Patent Law* 515-16(2001).
- [73]See *supra* note 72.
- [74]See *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368, 1376(Fed. Cir. 1998).
- [75]The Supreme Court had identified three categories of subject matter that are not patentable, namely laws of nature, natural phenomena, and abstract ideas. See *Diamond v. Diehr*, 450 U.S. 175,185 (1981).
- [76]See *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368, 1376 (Fed. Cir. 1998).
- [77]See *id.* at 1377.
- [78]See *id.* at 1377.
- [79]See Jin, *supra* note 18, at 45-50.
- [80]Logically, they may be the later, but that means nothing to the statement this note focuses on. See *supra* note 7.
- [81]See Jin, *supra* note 18, at 148-49.
- [82]See *supra* Part IV.2.A-B.
- [83]See *supra* Part II .1 and *supra* note 11.
- [84]See *supra* text accompanying notes 62-65 and *supra* note 66.
- [85]See *supra* note 52 and accompanying text.
- [86]See the U.S. Patent and Trademark Office, *White Paper on Automated Financial or Management Data Processing Methods (BMs)*, <http://www.uspto.gov/web/menu/busmethp> (visited May 26, 2003).
- [87]See, e.g., Dutcher, *supra* note 44, at 186, 189-92 and 196-99.