Patent Eligibility of Business Method in China from US Perspective

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I. Introduction

Originating from the United States of America, business method patent has been gradually accepted by and protected within the patent regimes of many countries along with the hi-tech and economic development. But the standards for assessing the patent eligibility of business methods are different from one country to another. Even in the U. S., incessant debate has been going on about the patent eligibility of business methods in the legal and academic communities.

On 28 June 2010, the US Federal Supreme Court made the long-awaited decision in the high-profile case of Bilsiki v. Kappos, by a marginal majority of 5:4, with the main opinions presented as follows.

First, Bilski claimed a process for hedging risks in energy market is an abstract idea, not a patent eligible subject matter. The patent exclusion of abstract idea is deeply rooted in the history of the Federal Supreme Court. While the nine judges were divided in their opinions on some issues, they took the same view on rejecting Bilski's application for it related to an abstract idea.

Second, when the patent eligibility of a process claim is determined, while the machine-or-transformation test[1] may be a useful, important clue or investigative tool, it is not the sole test for deciding whether an invention is a patent-eligible "process" under Section 101. For the past two years, the USPTO and CAFC have been using the machine-or-transformation test to determine the patent eligibility of process claims. For the Federal Supreme Court, the test is too restrictive, and would sometimes do harm to holders of eligible inventions. Justice Anthony Kennedy believes that the machine-or-transformation test would create uncertainty as to the patentability of many inventions, and new technologies may call for new inquiries. By citing Benson [2], Justice Kennedy notes that the court should not freeze process patents to old technologies, leaving no room for the revelations of the new, onrushing technology [,] . . . is not our purpose.

Third, patent eligibility under section 101 of the US Patent Act is only the first threshold test, and sections 102 (novelty), 103 (non-obviousness) and 112 (optimal mode and full disclosure) of the second threshold may further test whether the substantive requirement for patent grant is satisfied[3]. The Federal Supreme Court emphasised that the first threshold should not be too high, and an examiner should shun focusing on section 101 without considering sections 102, 103 and 112.

Notably, the majority did not endorse any past Federal Circuit interpretation of § 101, though the Court "by no means foreclose[d] the Federal Circuit's development of other limiting criteria. The Federal Supreme Court concludes that the standards for determining patent eligibility of business methods should not only concern the "useful, concrete

and practical effect" as established in State Street Bank[4]; it should also take account of the other legitimate qualifying requirements.

The Federal Supreme Court concludes that it is not a problem to be a little bit more stringent on the basis of the standard for determining patent eligibility as established in State Street Bank, but mechanically applying the machine-or-transformation test goes a bit too far.

Bilski is a landmark case on patent eligibility following Benson, Flook[5], Diehr[6], and State Street Bank, and some opinions arising from the case will have important impacts on the scope of patent eligibility.

II. Standards for determining patent eligibility of business methods in the U. S.

After the Federal Supreme Court made its decision in Bilski, USPTO issued two memos on the standards for determining patent eligibility of business methods[7]. According to the memos, the general principle for determining patent eligibility is that a subject matter is patent eligible if it is not one of the three excluded exceptions (natural law, physical phenomenon, or abstract idea). USPTO notes that examiners may continue using the machine-or-transformation test to determine the patent eligibility of business methods, but, in the meantime, he should also consider whether it is an abstract idea. A subject matter is patent eligible if it stands the machine-or-transformation test unless it is clearly shown to obviously relate to an abstract idea; it is not if it fails to stand the machine-or-transformation test unless it is clearly shown to obviously not relate to an abstract idea.

USPTO stresses that an examiner should analyse a claim as a whole to see if it is an abstract idea, and needs to consider the numerous relevant factors as listed in the second memo, which includes those weighing toward and against patent eligibility.

USPTO explicitly points out in the memo that Section 101 is merely a coarse filter and thus determination of eligibility under § 101 is only a threshold question for patentability. Sections 102, 103, and 112 are typically the primary tools for assessing patentability. The Office also stresses that an examiner, issuing an Office Action according to Section 101, should present clear reasoning in support of his determination, and his conclusion must be made on the basis of analysis of a subject matter as a whole. Whether to reject or patent an invention, he should specifically point out the factors on the basis of which he has made his determination, so that the applicant can make relevant explanation and argument or defence when he considers the examiner's reasoning wrong.

III. Mode of examination of application for patent for business method in China

The State Intellectual Property Office (SIPO), conservative towards business methods at the policy level, is not as open-minded as its counterparts in the U.S. and Japan, and examiners make examinations in a rather cautious and stringent manner.

In China, the bottom line of "technical solution" has always been kept in examination of patent-eligible subject matter, namely the indispensable three technical elements (i. e. whether an invention uses a technical means, solves a technical problem, and brings about a technical effect). The practice in China is obviously more stringent than the US machine-or-transformation test, and excludes many business methods from patentability.

The Guidelines for Patent Examination as of 2001 has developed the "contribution approach" in which the features of a claim are divided into two parts: one part contains those common in the prior art, and the other part contains those making contribution over the prior art. If the features of the latter part are merely rules or methods for performing mental acts, the claim is not patent eligible.

The "contribution approach" is a very workable and effective tool, but it has its own problems mainly as follows:

First, dividing features of a claim into two parts is fundamentally contrary to the doctrine of analysis of an invention as a whole, and likely to cause false determination. For instance, the technical features of an invention common to the prior art may be of technical character, but it is possible for the whole invention to be found not patent eligible as the part of features that make contribution over the prior art are rules or methods for performing mental acts.

Second, it is contrary to the rules of normal examination, causing logical confusion. The above three technical elements are intrinsic features of a solution independent of selection made of the prior art, and can be determined before search is made. The "contribution approach" confuses the first and second thresholds, rendering the first threshold to take care of everything.

Third, it leads to uncertainty. It is possible for a different

examiner to select a different prior art in applying the "contribution approach" in the determination of patent eligibility, thus making a different, or even diametrically opposite, conclusion.

For these reasons, the "contribution approach" was abolished in the Guidelines for Patent Examination as of 2006 and 2010, in which the SIPO has been adopted the practice of first ruling out rules or methods for performing mental acts, and then testing if an application constitutes a technical solution.

Article 2 of the Patent Law positively defines patent-eligible subject matter as follows: "invention" means any new technical solution relating to a product, a process or improvement thereof; Article 25 reversely excludes rules or methods for performing mental acts from patentability, which include some special types of business method inventions. Examiners apply the two Articles to determine if a business method invention is patent eligible.

It is to be noted that in Section 4.2, Chapter 1 of Part 2 of the Guidelines for Patent Examination are specially listed the methods of management and system in relation to the aspects of organisation, manufacture, business exploitation and economy as rules or methods for performing mental acts, thus making things difficult for patenting business methods in China.

Under the current Guidelines for Patent Examination, inventions comprising technical features and rules or methods for performing mental acts, as a whole, are not rules or methods for performing mental acts, and should not be excluded from patentability under Article 25 of the Patent Law.

Accordingly, the SIPO divides inventions relating to business methods into pure business method inventions and business method related inventions. The former are inventions relating to the subject matter of pure business methods, and are categorically excluded from patentability under Article 25, paragraph one (2), of the Patent Law; the latter are those relating to the subject matter utilising computer and network technology to implement methods of doing business. They need to be analysed on a case-for-case basis to determine if they possess the above tree technical elements[8].

As for the examination of application for patent for business method related inventions, examiners usually do it in three ways under different circumstances.

(i) When an examiner can determine that a claimed invention is not intended to solve a technical problem according to the background technology and/or general knowledge presented in the description (before search), he will state that it does not constitute a technical solution directly under Article 2 of the Patent Law, and it is not a patent-eligible subject matter.

(ii) When an examiner searches about the technical problem to be solved by the claimed invention as stated in the description, finding the technical problem has been solved from the search findings, and can preliminarily determine that the actually solved problem (determined by the examiner after his analysis of the case as a whole) is not a technical problem, then he would point out, according to the research findings, the problem the invention is intended to solve is not a technical one; hence the invention is not a technical solution as mentioned in Article 2 of the Patent Law, so it is not a patent-eligible subject matter.

(iii) If the invention cannot be excluded as non-patent-eligible subject matter in the preceding two ways of examination, the examiner will make a further search. When he finds a prior art that anticipates the application, he may assess the novelty and/or inventiveness directly according to the searched prior art.

VI. Problems with the examination of business method patent in China

It is known from the above analysis that the SIPO sticks to the same standards for examination as those for examination of other classes of patent applications to examine business method patent applications. For that matter, whether such an application merely relates to a rule or method for performing mental acts, the three technical elements are the focus of dispute in the examination proceedings. The following problems exist with the examination practice:

First, no importance is attached to the analysis of an invention as a whole, and the examination remains trapped in the "contribution approach"

While "contribution approach" is abolished in the present Guidelines for Patent Examination, its shadow is often seen in the Office Actions, as shown in the following typical ones:

Case 1 [9] Claim 1 claims a method for operating a first terminal to give a content gift to a second terminal, wherein said first and second terminals selectively communicate with a gift server, said method comprising … . While the technical solution controls, through computer and server operating the

computer program, the gift-giving process, the computer and server are commonly known means or apparatus, and request for, and communication of directory contents between them are well known technology; control over the gift-giving process neither improves the internal performance thereof, such as data transmission, and internal resources management, nor technically changes, in any way, the composition or function of them. But the problem said solution is intended to solve is how to give gift according to the need of the users' subjective will rather than a technical problem; the means used is to select and provide gifts through the list of contents individually defined and compatible with a gift-receiving terminal and according to said list of contents; it is not subject to the restrain of the law of nature; hence it does not use a technical means; and the achieved result is provision of gift according to a user's own needs, so as to avoid compatible and repeated purchase, so it is not a technical result in line with the law of nature.

Case 2 [10] Claim 1 claims a method used for a telephone gateway means to receive regional service from a distribution server, the used solution was that said means sent a service request in the region to the distribution server, receives substantive listing provided by the distribution server, and displays said listing in the order on the basis of the probability parameter by way of ballot. Said solution uses a communication device well known in the art: the telephone gateway means and the distribution server, and the communication technology well known in the art: sending, receiving and displaying. But use of the solution does not improve the structure and performance of the said known communication device, nor does it make any contribution to the said known communication technology. The problem said solution is to resolve is how to provide corresponding relevant information of goods and services in the region which is not technical; the means said solution uses is a business rule established among businesses, intermediate agencies and clients, not a technical means; the result it brings about is selectivity of business information distribution, not a technical result.

A close look at the above Office Actions at least shows the following problems:

1. Failure to make analysis of the solution as a whole. The examiner first disregarded computer, server, request for a list of contents and communication, telephone gateway means and sub-distribution server in the claims as prior art, and then assessed whether it possessed the three technical elements, which is contrary to the analysis of invention as a whole repeatedly stressed in the Guidelines for Patent Examination. If the "method for control rubber die compression shaping process" cited as example 4 in section 3, Chapter 9 of Part 2 of the Guidelines for Patent Examination is assessed according to this reasoning[11], the conclusion may also be drawn that it is not a patent-eligible subject matter. It is not hard to arrive at a clear conclusion from reading section 2 (2), Chapter 9 of Part 2 of the Guidelines for Patent Examination: if an examiner's rejection of a claim is based on Article 2, not 25, of the Patent Law, it shows that said claim, as a whole, is not merely a rule or method for performing mental acts, but comprises technical features. Since it comprises technical features, it should be concluded that it uses a technical means according to the provision of section 2, Chapter 1 of Part 2 of the Guidelines for Patent Examination. But in a lot of Office Actions conclusions of non-use of technical means are drawn the rejection ground under Article 2 of the Patent Law. Here arises the logical confusion: are technical means not embodied in technical features? And how can some technical features embody non-technical means?

2. Contradictory determination of technical means. The examiner first acknowledged computer, server, telephone gateway means and sub-distribution as commonly or well known means, and the content request, and transmission, reception and sending between computer and server as commonly or well known technology, but then concluded technical means were not used. People cannot help asking: How does the examiner get to know that computer, server, telephone gateway means and distribution server having the function were commonly or well known means and the content request, and transmission, there between were commonly or well known technology without search? Second, even if it is a commonly or well known technology, isn't a commonly or well known technology a technical means? Third, if any invention using computer and the internet is rejected for utilisation of a known technology, then what exact new technology is protected under the patent system in China?

3. It is logically implausible to conclude that the invention is not patent eligible from the fact that "the invention does not improve the internal performance of computer and server, such as data transmission and internal resources management, nor technically changes, in any way, the composition or function of them". Chapter 9 of Part 2 of the Guidelines for Patent Examination gives some examples of patent-eligible subject matter. Some of them may improve

the internal performance of computer and server, such as data transmission and internal resources management, and some may technically change, in some way, the composition or function of them; but these examples are not exclusive, and it only shows that inventions making the improvement or changes are patent-eligible subject matter, but cannot exclude circumstances other than these examples. That is, they cannot deny that inventions that do not make the improvement or changes are patent eligible. For example, example 6 in Section 3, Chapter 9 of the Guidelines for Patent Examination (a method for removing image noises) does not improve the internal performance, nor changes, in any way, the composition or function, but it is patent eligible.

Second, determination of the three technical elements lacks clear guidance of law

During examination as to patent eligibility, determination of the three technical elements plays a crucial role. But, unfortunately, the relevant concepts, such as technical problem, technical means, technical effect and technical feature, are not clearly defined in the Guidelines for Patent Examination. As a result, when determining the three technical elements, examiners depend more on their own understanding and discretion, and conclusions made by them on patent eligibility of one invention are different from one examiner to another, or even opposite.

Case 3 [12] An invention improves the traditional interleaving method in the GSM communication system, resulting in obviously shortened table and the needed memory capacity obviously smaller than the memory capacity used in the conventional GSM interleaver.

In the Office Action, the examiner pointed out that said interleaving method merely related to algorithm for interleaving a sequence of bits, and algorithms, in essence, are a mode of abstract idea, non-patent-eligible subject matter of rules or methods for performing mental acts under Article 25, paragraph one (2), of the Patent Law.

It is well known that in mobile communications, disruption and fading of signal channels would cause relatively long burst error, and use of the interleaving technology may make the bit errors discrete, and use of the encoding technology to correct random errors at the receiving terminal can eliminate random errors, and, thus improves the quality of the transmission of the whole data sequence.

Upon reading the description, the authors found the traditional interleaving method imposes demanding requirement on memory capacity, and needs to store a large table to guide bit interleaving, thus causing heavy burden to the reception and transmission. The invention improves the traditional interleaving method. It does not seek to protect the action of random re-ordering of bits *per se*, but to protect the improved interleaving solution in combination with the GSM communication system. Owing to the means of said "storage", "identification" and "increment", it is unnecessary, in the invention to store the entire table in the memory as the traditional interleaving method did, and, thus obviously reduced the memory capacity needed.

It is well known that interleaving is a key technology in the traditional communication, 3G communication and 4G communication. Without any doubt, the interleaving method has its technical character. While specific analysis should be made under specific circumstance as to what the technical means really is, there is no doubt about the technical character of the basic communication means, such as encryption/decryption, modulation/demodulation interleaving/deinterleaving and compression/decompression. In fact, many present-day algorithms and protocols are generated to solve technical problems. They are no longer simple artificial agreements. They, applicable to engineering and technological fields, can bring about good technical effect. An invention of the kind should not be excluded from patentability just because an algorithm or agreement is included in a claim. The key is to see whether it is used in a particular technological field and whether it solves a specific problem.

According to the fundamental principle underlying the Patent Law, inclusion of rules or methods for performing mental acts *per se* as patent eligibility would create prejudice to public interests, and make it impossible for the public to innovate on the basis of it. But conversely, what the Patent Law encourages is exactly how to apply rules or methods for performing mental acts to solving specific problems in the daily production and life. It protects exactly inventive solutions developed on the basis of these rules or methods for performing mental acts.

IV. Room for improving examination of business method patent in China

By virtue of the discussion above and drawing on the US law practice relating to business method patent, the authors would like to suggest improving examination of business method patent in China from the following aspects:

First, intensifying research on business method patent

theory, and providing more detailed, relevant examination rules.

Patenting business method-related invention is made domestically necessary with the economic and social development, and represents a tendency of patent legislation in all countries of the world. We should well realise that it is now no longer an issue of whether a business method is patent eligible or not, but one of how to protect and encourage them.

In the U. S., software inventions have also gone through a process of stringent to relaxed examination. At the beginning, they were not patent eligible; and they have been gradually accepted, and become patent eligible. Policy encouragement and enhanced protection thereof have created a favorable environment for the thriving development and growth of the software industry in the U. S. A., rendering the US software industry leading the world all the time, and with a large group of software giants nurtured.

As a nation relatively lagging behind others in the IPR field, China should intensify its research on business method patent theory and legislation, and study of cases in the area, draw on the experience of the developed countries, such as the U.S., Japan and European countries, learn from their lessons, work out a precise and reasonable line of demarcation of the scope of patent eligibility of business method patent, and, in the meantime, enrich and refine the relevant rules and procedure of examination along the line.

Second, attaching importance to analysis of inventions as a whole in determination of technical solutions, breaking away from the established practice of relying on the "contribution approach", and setting clear, workable examination standards in connection with some important terms, so as to prevent the negative impacts of examiners' subjective factors on patent applicants.

The provisions relating to the three technical elements in the current Patent Law, the Implementing Regulations of the Patent Law, and the Guidelines for Patent Examination are not adequately clear and workable, and hard to accurately understand and apply. While four examples of satisfying patent eligibility are given in Chapter 9 of Part 2 of the Guidelines for Patent Examination, their logical reasoning is so simple that even senior examiners have found it difficult to see what the generality is that resides in the constitution of a technical solution[13], which leaves relatively much room of discretion with the examiners when the three technical elements are to be determined.

When examining patent eligibility, examiners put the determination of technical problem at a crucial position. While they have to depend on search for making the determination, thus going back to the practice of relying heavily on the "contribution approach" because what problem is to be resolved is an intrinsic character of a solution. This does not vary from one reference to another, and is to be known by analysis of the claims as a whole.

There are two ways to change the situation. One is to follow the USPTO's practice, that is, the SIPO issues a guidance, applying the analysis of inventions as a whole throughout the entire patent examination process, and makes specific provisions in response to all circumstances requiring consideration in the examination of patent eligibility, so as to base the examination on consistent standards. Two is to revise the Guidelines for Patent Examination or formulate judicial interpretations to work out a relatively workable definition of the three technical elements. For example, the guidelines for examination in the EPO require that the way of analysis of inventions as a whole be adopted in determining the technical character of a patent-eligible subject matter, and attention be paid to distinguishing normal technical effect from further technical effect, and give special consideration to the further technical effect in particular. Also in the Guidelines are given the explanations by way of examples given therein[14].

Third, lowering the threshold of patent eligibility examination, and testing cases in question at the second threshold test or examination.

To be patent eligible, an invention must stand the two-threshold tests. The first is to determine its patent eligibility. If it does not stand the first threshold test, the application relating to the invention is directly rejected to save the examination resources; if it does, the application will go through the second threshold to see it meets the substantive requirements of novelty and inventiveness for patenting. In other words, a granted patent should be patent eligible and reach a certain height of innovation. The two thresholds have different significances. The first excludes non-patent-eligible subject matter in form from patentability, and the second excludes applications of low-level innovation. Keeping the first threshold loose and the second stringent is a universally followed practice[15]. In other words, all inventions that have made contribution to the prior art should be qualified to enter the threshold of patent eligibility.

Given the rich diversity of invention-creations and the unpredictability of new things, it is always difficult to make a

clear conclusion when one examines some applications. Under this situation, if an examiner finds it not easy to exclude them according to *prima facie* case, he may allow the application to enter the first threshold, and reject them at the second threshold on account of inventiveness. This would make the examination more convincing, and both the US Federal Supreme Court and the USPTO support this view. Many EPO examiners have been doing the same in their practical examination. Besides, this view is embodied in the SOP of Examination - Substantive Examination, and becomes a good model which some senior SIPO examiners work very hard to seek to establish in their examination practice[16]. ■

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[1] (1) It is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing.

[2] Gottschalk v. Benson, 409 U.S. 63 (1972).

[3] The §101 patent-eligibility inquiry is only a threshold test. Even if an invention qualifies as a process, machine, manufacture, or composition of matter, in order to receive the Patent Act's protection the claimed invention must also satisfy "the conditions and requirements of this title." §101. Those requirements include that the invention be novel, see §102, non-obvious, see §103, and fully and particularly described, see §112.

[4] State Street Bank and Trust Company v. Signature Financial Group, Inc., 149 F.3d 1368 (Fed. Cir. 1998).

[5] Parker v. Flook, 437 U.S. 584 (1978).

[6] Diamond v. Diehr, 450 U.S. 175 (1981).

[7] On 28 June 2010, Robert W. Bahr signed and issued the memo entitled "Supreme Court Decision in Bilski v. Kappos", on 27 July 2010, Robert W. Bahr signed and issued the memo entitled "Interim Guidance for Determining Subject Matter Eligibility for Process Claims in View of Bilski v. Kappos".

[8] The SOP of Examination - Substantive Examination, the Publishing House of Intellectual Property, 2009, P.230.

[9] See the Decision on Rejection of Invention Patent Application 200580018729.0.

[10] See the Decision on Rejection of Invention Patent Application 200710195934.5.

[11] The case is cited from Diamond v. Diehr, 450 U.S. 175 (1981).

[12] See the Third Office Action on Invention Patent Application 200480034156.6.

[13] Li Yonghong, Confusions from the Reflections on Software Patent Application, China Patents & Trademarks, 2008, issue 3. Pp. 40-48.

[14] Guidelines for Examination in the European Patent Office, Part C, IV-5, 2.3.6, "However, if a computer program is capable of bringing about, when running on a computer, a further technical effect going beyond these normal physical effects, it is not excluded from patentability. This further technical effect may be known in the prior art. A further technical effect which lends technical character to a computer program may be found e.g. in the control of an industrial process or in processing data which represent physical entities or in the internal functioning of the computer itself or its interfaces under the influence of the program and could, for example, affect the efficiency or security of a process, the management of computer resources required or the rate of data transfer in a communication link."

[15] Wei Zheng, Comments on Patent Eligibility of Business Methods, China Patent Agents, 2005, issue 3.

[16] Cui Aiping, Assessment of Patentability of Inventions Relating to "Rules and Methods for Mental Activities" China Patents & Trademarks, 2006, issue 4, Pp. 46-51.