



SOFTWARE/BUSINESS METHOD PATENTS IN THE US AND CHINA

COMPARISONS AND STRATEGIES

DISCLAIMER

The following presentation reflects the personal opinion of its authors and does not necessarily represent the views of their respective clients, partners, or employers, nor the U.S.P.T.O.

Additionally, the following content is presented solely for the purposes of discussion and illustration, and does not comprise, nor is to be considered as, legal advice.

SPEAKERS

Elizabeth Chien-Hale

Appleton Luff, San Jose, CA



APPLETON LUFF

INTERNATIONAL LAWYERS

BARCELONA
BRUSSELS
GENEVA

ISTANBUL
SEATTLE
SINGAPORE

WARSAW
SILICON VALLEY
WASHINGTON, DC

WWW.APPLETONLUFF.COM

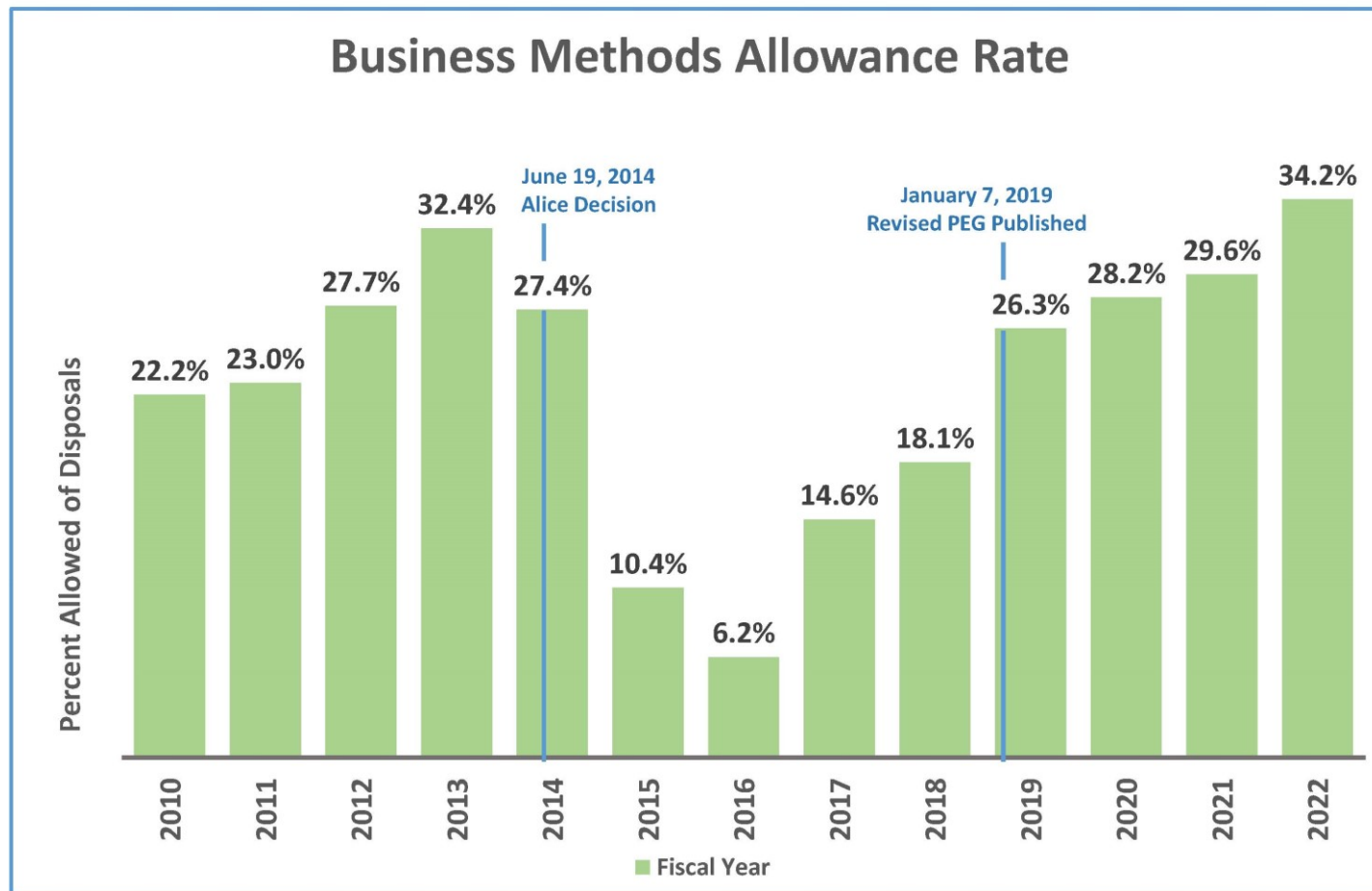
Xiaolin Huang (Richard)

ZY Partners, Beijing, China



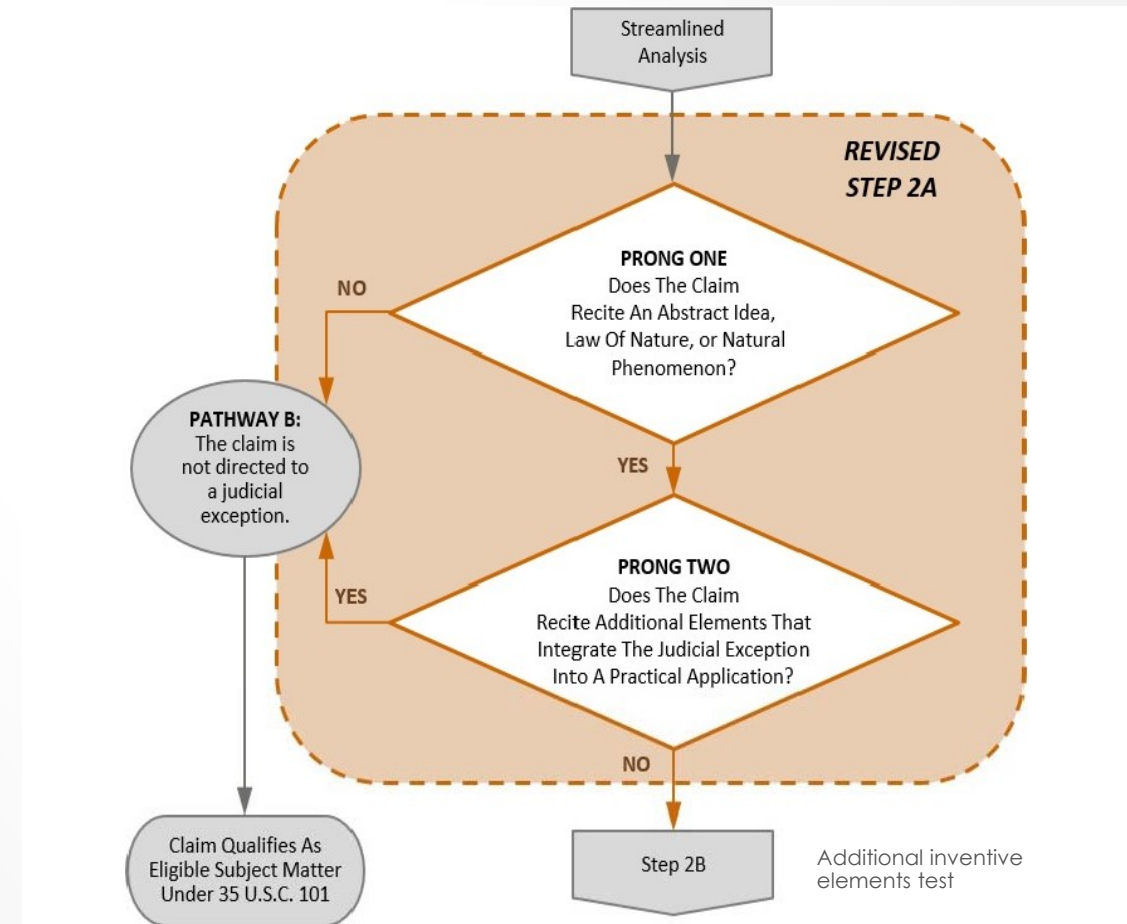
BMP 2023: BACKGROUND AND OVERVIEW IN THE US

- Although Sec. 101 Subject Matter Eligibility issues have not been firmly resolved, statistics show that BMP patents are being issued at a healthy rate:



BMP 2023: OVERVIEW

- Alice test is still with us.
- Judicial exceptions, in most general terms, exclude “the basic tools of scientific and technological work”-- laws of nature, natural phenomena, and abstract ideas—from patentability.
- Other terms have been used to describe the judicially recognized exceptions: “physical phenomena,” “products of nature,” “scientific principles,” “systems that depend on human intelligence alone,” “mental processes,” and “disembodied mathematical algorithms and formulas.”
- Uncertainty remains, but there are now more pathways to patentability and practitioners have a developed a better sense of how to reach patentability.



PRACTICAL ADVICE ON OVERCOMING 101 ISSUES

- Avoid emphasis on business advantages; instead, bring out the technical advancement and technical challenges overcome
- Spell out the practical and real-world benefits
- Be mindful of differences between the USPTO and courts
 - A couple of recent court decisions dismissing asserted BMP patents:
 - US Patent Nos. 9,087,321 and 10,936,685 describing a system which uses users answers polling questions to find a “match” between users declared invalid by the courts because the invention used only conventional computer, adding a limitations about performing operations on a handheld device did not help.
 - U.S. Patent No. 9,292,852 describing a secure transaction method where consumers can make credit card payments without physically presenting their cards were “ordinarily performed” sales activity in the stream of commerce and therefore the asserted claims were invalid.

A LEGISLATIVE SOLUTION MAY BE FORTHCOMING

- Patent Eligibility Restoration Act of 2023 is currently pending in Congress, introduced on June 22, 2023, by Senators Thom Tillis and Chris Coons
- This Bill hopes to eliminate judicial exceptions and to provide clear guidance to patent eligibility
- This Bill provides a specific list of excluded subject matter :
 - A mathematical formula that is not part of an invention;
 - A process that is substantially economic, financial, business, social, cultural, or artistic;
 - A process that is a mental process performed solely in the human mind’;
 - An unmodified human gene, as that gene exists in the human body; and
 - An unmodified natural material, as that material exists in the nature.”

The scope of the ineligibility for “a process that is substantially economic, financial, business, social, cultural, or artistic” in the Act, there is a further clarification that:

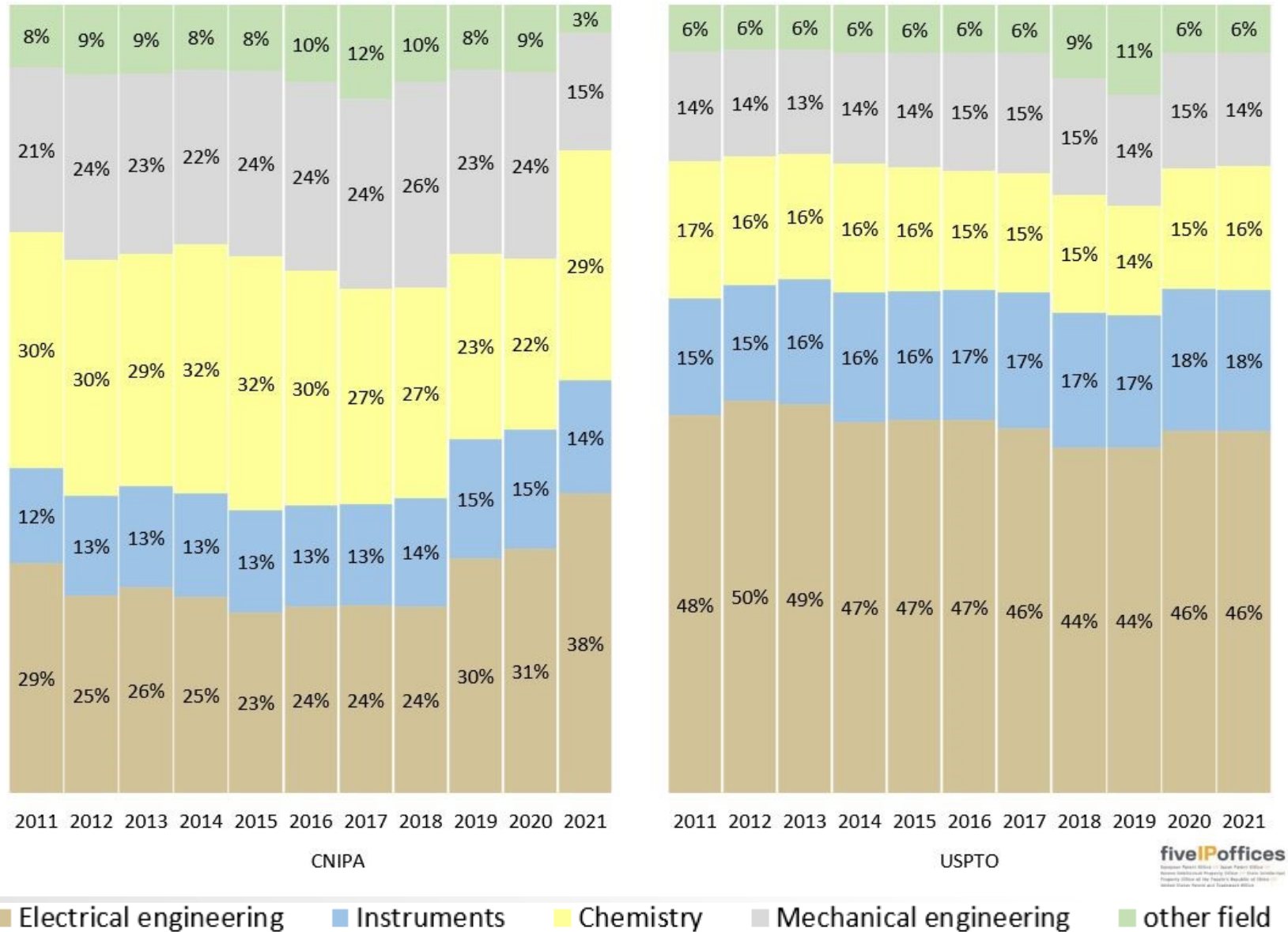
a process “shall not be excluded from eligibility for a patent if the process cannot practically be performed without the use of a machine or manufacture.”

BMP IN CHINA: HISTORY, OVERVIEW, AND COORDINATING US AND CHINA FILINGS

CHINA OPENED THE FLOODGATE IN 2017

- Until the changes made to the Examination Guidelines in 2017, the patentability of business methods was difficult in China. Article 25(2) of the Chinese Patent Law explicitly states that “rules and methods for mental activities” shall not be granted patent protection. Examination guidelines prior to 2017 characterized business activities as mental activities. While there had been a few exceptions, it was generally the case that business method patents were not welcome in China.
- However, the changes made in 2017 state in Part II, Chapter 1, Section 4.2(2), in the context of discussing a claim relating to a business method invention, that “if a claim in its whole contains not only matter of rule or method for mental activities but also technical features, then the claim, viewed as a whole, is not a rule or method for mental activities” and shall not be excluded from patent protection by Article 25 of the Chinese Patent Law.
- In other words, after the amendments, a claim involving business models shall NOT be excluded categorically if they include TECHNICAL features

And the filing numbers show an increase in China



2011-2021 Patent filed and granted in electrical engineering in China and in th US

COORDINATED FILING STRATEGIES

WHAT TO DO WITH THE DIFFERENCES?

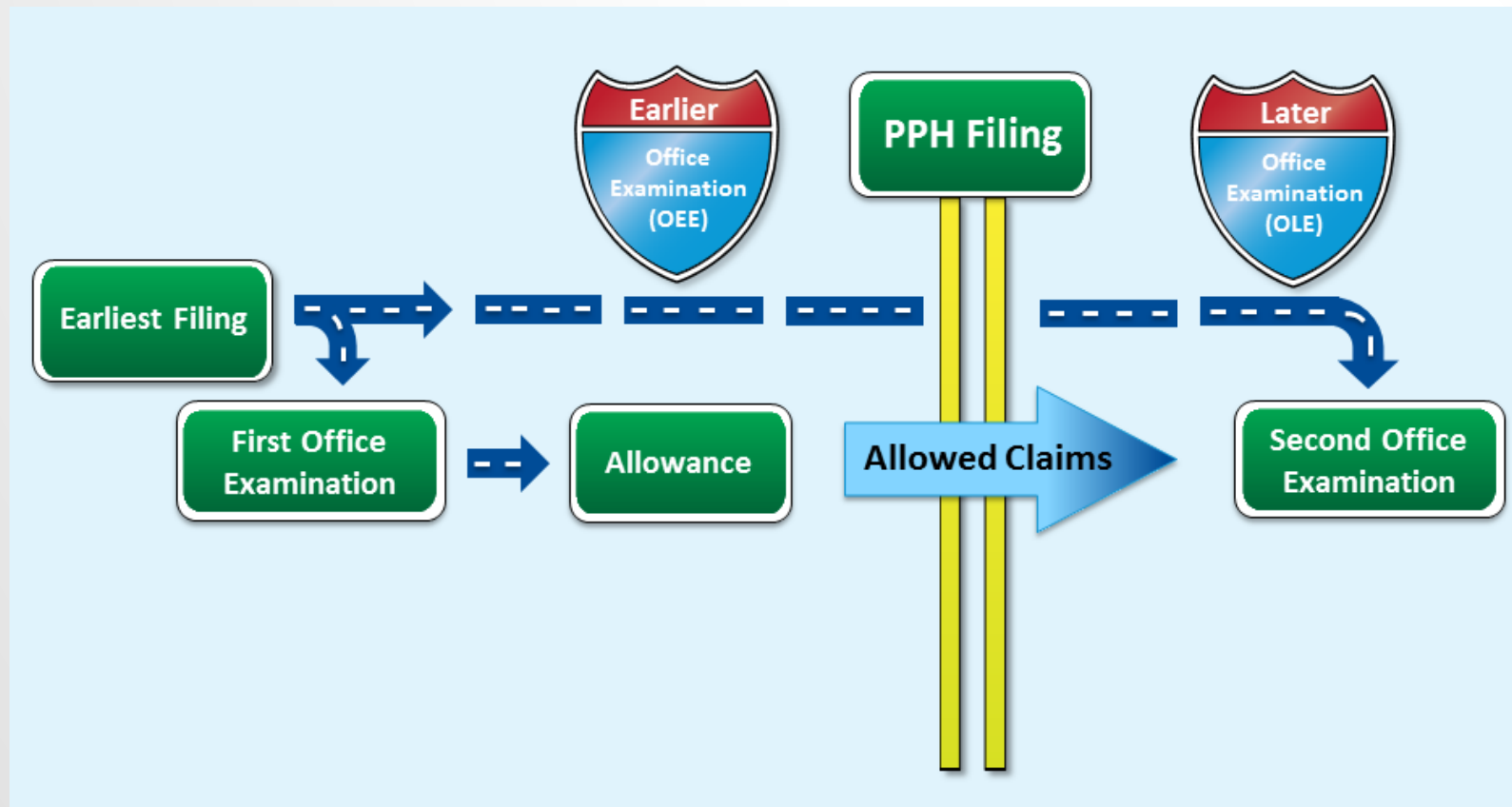
- Traditional route for US applicants: US First
 - Flexible continuation practice
 - Accelerated examination widely available
 - But subject 101 uncertainly since 2014 *Alice* decision lingers

- Is China First an alternative?
 - BMP/software opened up in 2017 and still at a honey-moon stage
 - Limited acceleration options now available for foreign companies

GO FOR FASTER ISSUANCE IN CHINA FIRST

- Use a PCT application to enter into China examination first
- Defer US examination

- Consider PPH: an applicant receives a ruling from a first patent office that at least one claim is allowable, the applicant may request fast track examination of corresponding claim(s) in a corresponding patent application that is pending in a second patent office. (<https://www.uspto.gov/patents/basics/international-protection/patent-prosecution-highway-pph-fast-track>)



USUAL EXAMINATION TIMELINE IN CHINA

- Under the current patent examination system in China, for an invention patent application, the examination procedure generally takes 2-3 years.
- According to the latest report, average is 16.5 months
- For an invention application on the prioritized track, the CNIPA will issue the first office action within 45 days and issue the patentability decision (Notice of Allowance or Rejection Decision) within one year from the approval of the request for prioritized examination

PRIORITIZED EXAMINATION IN CHINA

- Patent applications may apply for Prioritized Examination if they:
 - 1) Involve national key development industries such as energy conservation and environmental protection, new generation information technology, biology, high-end equipment manufacturing, new energy, new materials, new energy vehicles, and smart manufacturing;
 - 2) Involve industries encouraged by the provincial and district-level municipal governments;
 - 3) Involve the Internet, big data, cloud computing and other fields and the technology or product obsolescence is fast;
 - 4) The patent applicant has made preparations for implementation or has begun implementation, or there is evidence that others are implementing their inventions;
 - 5) The patent application was first filed in China and then filed in a foreign country;
or
 - 6) Of great significance to national interests or public interests so they need to be reviewed first

PRIORITIZED EXAMINATION IN CHINA

- Once on a priority track, the CNIPA will issue the first office action within 45 days and issue Allowance or Rejection within one year from the approval of the priority request

PRECONDITION: REQUEST FOR SUBSTANTIVE EXAMINATION

- The invention patent application needs to have requested substantial examination.
- According to Article 35 of the Chinese Patent Law, the request for substantive examination can be filed any time within three years from the filing date. If a priority is claimed, the request must be filed three years from the earliest priority date.
- A examination fee must be paid, and the applicant can make a request for examination as early as when it is filed.

SIDEBAR--

TIME LIMIT TO REQUEST EXAMINATION: IP5 COMPARISONS

- EPO up to 6 months after publication of the search report, or up to 31 months from priority/international filing date for PCT application
- JPO up to 3 years after filing date at JPO
- KIPO up to 3 years after filing date at KIPO
- CNIPA up to 3 years after filing date at CNIPA
- USPTO no delay, filing = request for examination

PRE-EXAMINATION BY LOCAL IP PROTECTION CENTERS

- Local intellectual property protection centers may provide pre-examination of patent applications for the recorded local entities, and the CNIPA will accelerate the examination of patent applications that have passed the pre-examination by local intellectual property protection center.
- There are quite a few local protection centers throughout China covering different technology areas: equipment, environmental technology, new materials, biomedicine, internet technology, optoelectronic information industry, batteries, etc.
- Such requests unfortunately are not available for PCT international applications.

FAST TRACK FOR APPLICATIONS FILED BY HONG KONG-BASED ENTITIES

- Starting Jan. 1 of this year 2023, Hong Kong permanent residents and entities legally registered in Hong Kong can request prioritized examination for their invention patent applications in China. Eligibility requirements include:
 - an invention application filed directly in China or via national phase entry into China in the substantive examination stage
 - the application must be filed electronically
 - the invention belongs to a qualified technology area: internet, big data, cloud computing, biotechnology, environmental science, manufacturing, new materials, et.
 - the applicant or at least one co-applicant must be (1) a Hong Kong permanent resident or (2) a company incorporated in Hong Kong or (3) some type of legal entity or organization in Hong Kong
 - an obligation to submit known prior arts to the patent office

COORDINATE CLAIM TYPES IN THE US AND CHINESE APPLICATIONS

- Bear in mind the PPH claims requirements for synchronized filing
- Consider making voluntary amendments when entering into China national phase

COMMON CLAIM TYPES IN US SOFTWARE/BMP PATENT APPLICATION

- Apparatus/system claims
- Process/method claims
- CRM claims

Very common to see applications with 3 sets of claims of the same substantive steps using each claim type, providing full scope of an invention

COMMON CLAIM TYPES IN A CHINESE SOFTWARE PATENT

- A method to....
- A computer readable medium having instructions stored thereon, which, when executed by a process, causes the processor to perform a method
- (hybrid hardware + program) A device for xyz, comprising hardware component A, hardware component b, and a processor configured to conduct the steps of. . .
- (virtual device) An apparatus for..., comprising a processor configured to execute instructions on a computer-readable medium to perform steps of . . .
- Means plus function claims

PATENT EXAMINATION PRACTICE ON SOFTWARE/BUSINESS METHOD IN CHINA

Related laws and rules for
examination of software/BMP
inventions

ELIGIBILITY IN CHINESE PATENT LAW

➤ Statutory subject matters

- Article 2.2 of Chinese Patent Law (CPL)

Definition of invention: “Invention” means any new technical solution relating to a product, a process or improvement thereof.

(Triple-technical requirement: use technical means, resolve a technical problem, and produce a technical effect)

(similar to 101 in USPTO)

- Article 25 of CPL (non-eligible list)

(ii) Rules and methods for mental activities;

pure algorithms,

methods of doing business,

abstract idea, consists of a mental process, mathematic concepts, man-made rules, or the like

.....

NOVELTY AND INVENTIVENESS OVER PRIOR ART

- Novelty and Inventiveness requirements
 - Article 22.2 of CPL (Novelty)
(similar to 102)
 - Article 22.3 of CPL (Inventiveness)
(similar to 103)

- Traditional examination for eligibility together with inventiveness in CN

- Step 1: exclude non-technical features under Art. 2.2 or Art. 25;
 - For method claims, use Art. 25;
 - For apparatus claims, use Art. 2.2.

- Step 2: assess inventiveness based on remaining technical features.

SOFTWARE/BUSINESS METHOD PATENT APPLICATIONS – TIPS

➤ Response strategy for Art. 25 rejections

“Second Draft Amendments for Patent Examination Guidelines(PEG)”

When assessing inventive step, contribution to the technical solution from **algorithm features** and **business method features** that interact with and functionally support each other with the technical features should also be considered.

Strategy: Arguments shall focus on association between the non-technical features and the technical features and contribution of the non-technical features to the technical solution for solving the technical problem and achieving the technical effect.

ONE ALLOWABLE EXAMPLE BY CNIPA

➤ Response strategy for Art. 25 rejections

Example given in “*Second Draft Amendments for PEG*”

1. A method for adapting parameters of a neural network, comprising:
selecting one or more dimensions of a weight parameter of at least one layer in the neural network;

determining a dimension size in each of the one or more dimensions of the weight parameter;

determining a set of candidate values for a target size in each of the one or more dimensions of the weight parameter based on utilization rate of hardware supporting operation of the neural network;

determining a subset of the candidate values that are higher than or equal to the corresponding dimension size, and selecting the smallest candidate value as the target size for the corresponding dimension;

padding the weight parameter such that the dimension size in each of the one or more dimensions of the weight parameter after padding is equal to the corresponding target size, in a case where the dimension size of the weight parameter before padding is less than the corresponding target size.

ONE ALLOWABLE EXAMPLE BY CNIPA



- Response strategy for Art. 25 rejections

Example given in “*Second Draft Amendments for PEG*”

Comments:

In the claimed invention, the weight parameter is padded to a target size in respective dimensions such that the padded weight parameter can be effectively processed by hardware. The algorithm of the invention can improve operation efficiency of the hardware executing the neural network model. Therefore, the algorithm features are related to and functionally support each other with the technical features and make contribution to the technical solution. Such algorithm features should not be excluded from inventiveness assessment.

This allowable example given in “*Second Draft Amendments for PEG*” was from one of our cases

	(12)发明专利	
		(10)授权公告号 CN 107633295 B (45)授权公告日 2020.04.28
(21)申请号 201710874198.X	(56)对比文件	
(22)申请日 2017.09.25	US 2005157939 A1,2005.07.21,全文.	
(65)同一申请的已公布的文献号 申请公布号 CN 107633295 A	US 4918472 A,1990.04.17,全文.	
(43)申请公布日 2018.01.26	审查员 谭碧云	
(73)专利权人 南京地平线机器人技术有限公司 地址 210046 江苏省南京市经济技术开发区兴智路兴智科技园A栋20层		
(72)发明人 凌坤 陈亮 李建军 李德林 黄畅		
(74)专利代理机构 北京市正见永申律师事务所 11497 代理人 黄小临 王怀章		
(51)Int.Cl. G06N 3/04(2006.01)	权利要求书3页 说明书11页 附图6页	
(54)发明名称 用于适配神经网络的参数的方法和装置		

We received 5 office actions and 1 rejection decision from the CNIPA for Art.25, Art. 2.2 and Art. 22.3, but finally managed to have this case granted. The CNIPA was convinced and included this case as an allowable example into the revised Examination Guidelines.

➤ Art. 2.2 of CPL (triple-technical requirement)

- Establish features contributing to the technical character
 1. Features relating to hardware change or performance improvement of hardware running software or AI models (e.g., features to reduce data exchange, to lower hardware requirements, to improve operational efficiency, to increase applicability of software/AI models to hardware, etc.) Note: the features may or may not cause modification to hardware.
 2. Features relating to specific technical applications (e.g., graphic processing, speech recognition, autonomous driving, future prediction, resource allocation, etc.)

BUSINESS METHOD PATENT

➤ Art. 2.2 of CPL (triple-technical requirement)

- Business method inventions

“*Patent Examination Guidelines*” (amended in February 2020) provides:

When judging whether a claim that includes algorithm or business method features consists of a technical solution, **all features in the claim should be considered as a whole**;

In the examination, the algorithm or business method features should not be simply separated from technical features, but all features recited in the claim should be considered as a whole to analyze technical problem to be solved, technical means to solve the technical problem and the technical effect achieved.

BUSINESS METHOD PATENT

- Art. 2.2 of CPL (triple-technical requirement)
 - Business method inventions
- “*Second Draft Amendments for PEG*” (amended in February 2020) provides:

If data processed in algorithm have technical meaning in the technical field, and execution of the algorithm is a process to solve the technical problem using nature laws and it achieves a technical effect, the solution defined in the claim is usually deemed as a technical solution under Art. 2.2 of the Chinese Patent Law. (also applicable to business method features)

Much more friendly to BMP than the traditional examination

BMP – EXAMPLE CASE 1

➤ Art. 2.2 of CPL (triple-technical requirement)

- Business method inventions

1. An example of business method patent

A method for determining loan risk, comprising:

- obtaining loan target data comprising loan entity information and loan platform entity information;

- determining entity relevance between the loan entity and the loan platform entity based on knowledge graph, the knowledge graph comprising a plurality of entities and line connections between the entities, the line connections representing relevance property between the entities; and

- determining whether the loan target data has loan risk based on the determined entity relevance.

CN201910590444.8, by ANT Financial Service

BMP – EXAMPLE CASE 2

➤ Art. 2.2 of CPL (triple-technical requirement)

- Business method inventions

Another example of business method patent

1. An information processing method comprising:

sending an insurance strategy request generated at a mobile device to a server of an insurance service platform, the server comprising a server cluster including multiple servers, the insurance strategy request comprising at least an identifier of driver and an identifier of a car of the driver;

the server retrieving credit information of the driver from a third party platform based on the driver identifier, receiving driving habit information of the driver from the mobile device or the car of the driver, and receiving car status information from an on-board diagnostic system of the car;

providing the driver credit information and the driving habit information to a trained driver insurance strategy model to generate driver insurance strategy information;

providing the driver insurance strategy information and the car status information to a trained car insurance strategy model to generate car insurance strategy information; and

the server sending the driver insurance strategy information and the car insurance strategy back to the mobile device.

[CN201710848430.2](#), by Tencent

BMP – EXAMPLE CASE 3

- Business method inventions

1. A computer matching system useable by a plurality of users, said system comprising:
a database for storing offer data input by said users;
an offer creation program means for creating an entity for an offer input by each user in said database and storing said offer therein; and
a search engine for comparing and matching a requirement input by a user with other users' offers stored in the database, wherein said requirement includes multiple elements as search criteria, each said element being assigned a weight indicating importance, such that each matching result has a search score indicating satisfaction level of said user, and returning said matching results to the user.

6. A computer matching method for matching a requirement of a user with offers from other users, said method comprising the steps of:
i) creating an offer entity in a database and storing said offer therein when a user inputs an offer;
ii) when a user inputs a requirement, comparing and matching said requirement with other users' offers stored in said database, said requirement including multiple elements as search criteria, each said element being assigned a weight indicating importance, such that each matching result has a search score indicating satisfaction level of said user, and
iii) returning matching results of said step ii) to said user.

[CN97121280.5](#) filed on 1997.10.31 granted on 2003.2.26

[This patent was invalidated by CNIPA in 2018 and upheld by China's Supreme Court in 2021](#)

SOFTWARE/BUSINESS METHOD PATENT APPLICATIONS IN CHINA – TIPS

➤ Drafting skills to pass the eligibility examination

Specification

- Establish a technical problem;
- Describe in detail how an algorithm or business method is performed to solve the technical problem and achieve a technical effect.

Claims

- Recite algorithm or business method features in combination with technical features;
 - Recite algorithm or business method features and technical features functionally support each other to solve the technical problem.
 - It may be allowable to include **no** hardware feature in a claim.
- There are some voices that the current door open to business method patent should be limited.

THANK YOU!

Elizabeth Chien-Hale

Xiaolin Huang(Richard)

ech@appletonluff.com

Xiaolin.huang@zypartners.com

www.appletonluff.com

zypatent@zypartners.com

+1 (408)776-8719