What U.S. Patent Attorneys Need to Know about Obtaining Japanese Software Patents
- AI & Blockchain + more -

SVIPLA/LES Joint Program
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*Opinions are their own, not attributed to the organization they belong to.

Highlights!

Prosecution:

Japan remains more receptive to software patents than US.

Prosecution tips for AI and blockchain inventions you should be aware of.

Communication:

Work together with JPO examiner.

Good communication leads to valuable patents.

Litigation:

Improving. Automatic injunction with compact proceedings and no bond. Judges are getting more patentee friendly.

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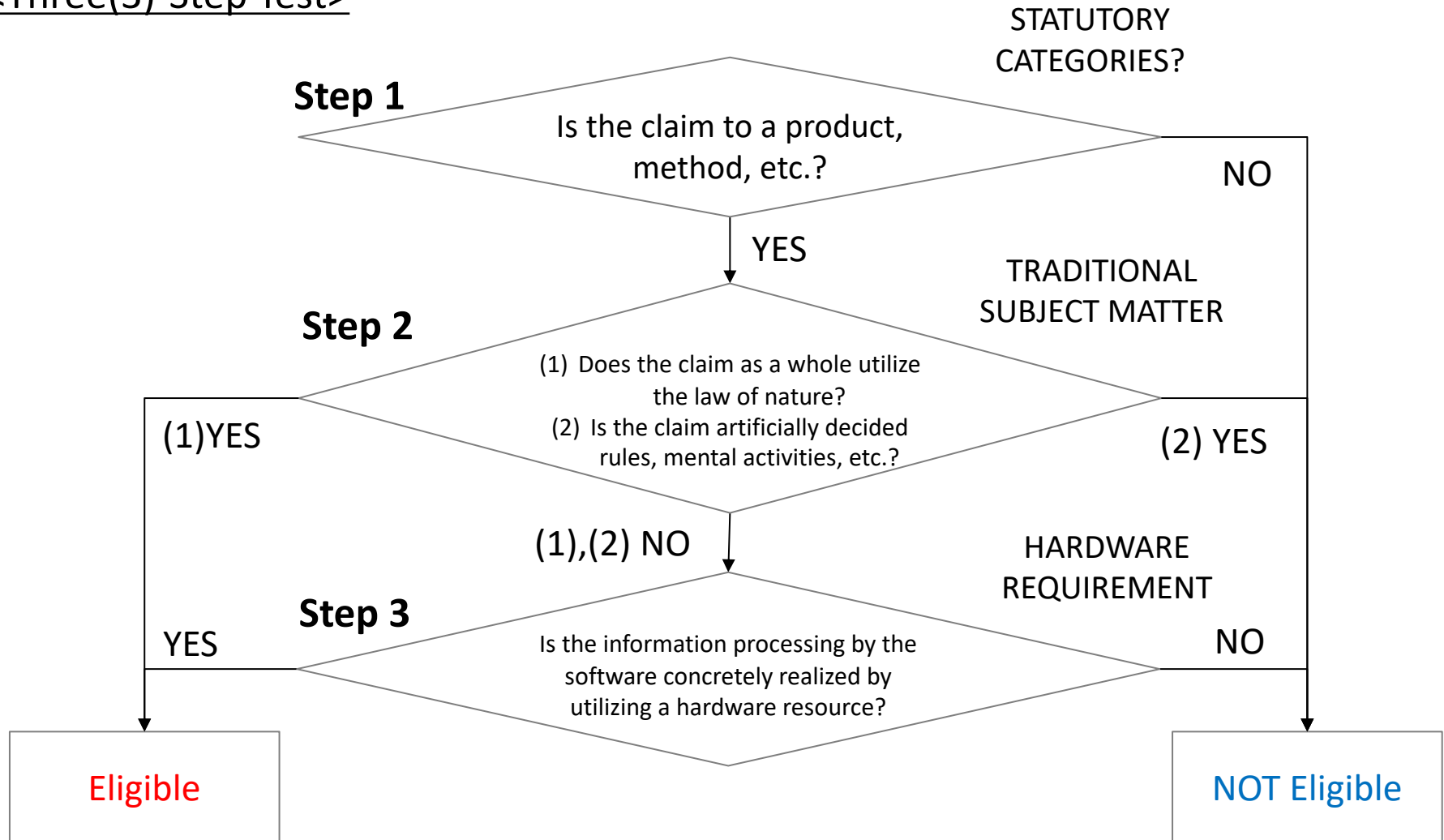
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Eligible Software-Related Inventions in Japan

<Three(3)-Step Test>

Step 1

STATUTORY CATEGORIES?

Is the claim to a product, method, etc.?

NO

YES

Step 2

TRADITIONAL SUBJECT MATTER

(1) Does the claim as a whole utilize the law of nature?
(2) Is the claim artificially decided rules, mental activities, etc.?

(1)YES

(2) YES

(1),(2) NO

Step 3

HARDWARE REQUIREMENT

YES

Is the information processing by the software concretely realized by utilizing a hardware resource?

NO

Eligible

NOT Eligible

<Step 1: Statutory Categories>

Step 1
Statutory Category?

There Are Four(4) Statutory Categories In Japan.

	Statutory Category	Examples
1	**Product** (Japanese Patent Law Article 2(3)(i))	Apparatus/ Device/ Server/ System, etc.
2	**Process** (J.P.L. Art. 2(3)(ii)(iii))	Method/ Process, etc.
3	**Computer Program** (J.P.L. Art. 2(3)(i))	Computer program, etc.
4	**Information that is to be processed by an electronic computer equivalent to a computer program** (J.P.L. Art. 2(3)(i) and Art. J.P.L. Art. 2(4))	Data structure/ module/ library/ trained model, etc.

Eligible Software-Related Inventions in Japan

<Step 2: Traditional Requirements>

- Definition of "Invention" (J.P.L. Art. 2(1))
    - "Invention in this Act means the highly advanced <u>creation of technical ideas utilizing the laws of nature</u>."

- Two Questions
- (1) Does the claims as a whole utilize the law of nature?

> ≒ Step 2A Prong 2 Integrated into a Practical Application?

- E.g., Controlling of an apparatus such as a rice cooker, engine, hard disk, chemical reaction device, etc.

- (2) Is the claim typical examples that does not utilize the law of nature, including:

> ≒ Step 2A Prong 1 Judicial Exception Recited?

  - i.   Laws other than the laws of nature (e.g. laws of economy)
  - ii. Artificially decided rules
  - iii. Mathematical formula
  - iv. Mental activities
  - v.   Subject matter utilizing only i) to iv)

Eligible Software-Related Inventions in Japan

<Step 3>

- For Software-Related Invention
  - A claimed invention is held to utilize the laws of nature **if the information processing by the software is concretely realized by utilizing a hardware resource.**

> Hardware Requirements
>
> Inventive Concept is <u>Not</u> Required.

- [Sample Claim]
- Is the below claim eligible?
- [Claim X]   A method for computing a product 's' of natural numbers 'n' and 'm' (where, 1≦n≦m＜256) by the formula

$$S = \frac{(m+n)^2 - (m-n)^2}{4}$$

- [Answer]
- **No.** the information processing by the software is not concretely realized by utilizing a <u>hardware resource</u>.

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<u>**<Step 3>**</u>

- For Software-Related Invention
  - A claimed invention is held to utilize the laws of nature **if the information processing by the software is concretely realized by utilizing a hardware resource.**

> Hardware Requirements
>
> Inventive Concept is <u>Not</u> Required.

- [Sample Claim]
- Is the below claim eligible?
- [Claim X]   A computing device to compute the formula $\dfrac{(m+n)^2 - (m-n)^2}{4}$, comprising <u>means for inputting</u> natural numbers 'n' and 'm' (where, $1 \leqq n \leqq m < 256$), <u>arithmetic means</u>, and <u>means for outputting</u> a result 's' by the said arithmetic means.

- [Answer]
- **No.** the information processing by the software is not <u>concretely realized</u> by utilizing a hardware resource.

<u>Step 3</u>

- For Software-Related Invention
  - A claimed invention is held to utilize the laws of nature **<u>if the information processing by the software is concretely realized by utilizing a hardware resource.</u>**

> **Hardware Requirements**
>
> Inventive Concept is <u>Not</u> Required.

- [Sample Claim]
- Is the below claim eligible?

[Claim X]   A computing device to compute the formula $\dfrac{(m+n)^2 - (m-n)^2}{4}$, comprising, <u>means for inputting</u> natural numbers 'n' and 'm' (where, 1≦n≦m＜256), <u>a square values table</u> wherein square values k2 (where, 0≦k＜511) is stored at the k-th position, <u>arithmetic means</u> comprising of an adder-subtracter and a bit shifter, and <u>a means for outputting</u> a result 's' by said arithmetic means, wherein the formula is computed, without using a multiplier-divider, but using square values read by the said arithmetic means from the said square values table.

- [Answer]
- **<u>Yes.</u>** the information processing by the software is <u>concretely realized </u>by utilizing a hardware resource.

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- **Application of the hardware requirement is lenient.**

JP Patent No. 6325762 (Example: Generic Algorithm Patent)

[Claim 1]
   An **information processing device with a processor**,
   wherein the processor implements the steps, comprising:
     a step for obtaining a plurality of partial layers as a gene pool, the plurality of partial layers, comprising candidates of elements of a deep learning model;
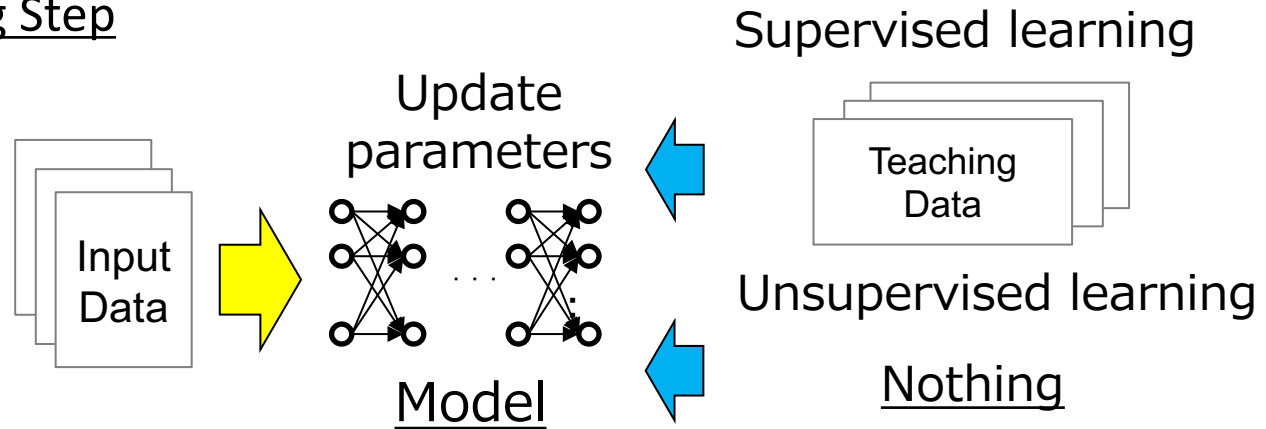   a step for generating a new partial layer from the gene pool using genetic programming,
     a step for evaluating each partial layers by incorporating the each partial layer to which the new partial layer was added into a template of the deep learning model and for deciding a plurality of partial layers left within the generic pool; and
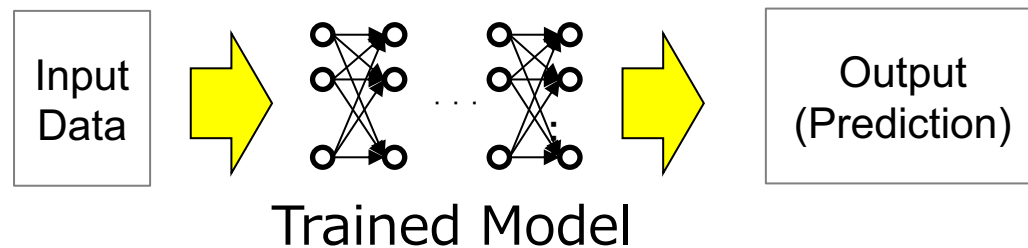   a step for outputting the deep learning model into which the most evaluated partial layers is incorporated.

- AI = Machine learning:
  - How do you protect a trained model of the step 2 below?

Step 1: Training Step

Supervised learning

Update parameters

Input Data

Teaching Data

Unsupervised learning

Model

Nothing

Step 2: Utilization (or Prediction) Step

Input Data

Output (Prediction)

Trained Model

- **Tips: Protect A Trained Model Using Data Structure Claim**
- Data structure claim is allowed if the claim include <u>a data structure</u> AND <u>description defining processing of a computer</u>.

<u>Example Claim (from Examination Handbook)</u>

[Claim 1] ***<u>A trained model</u>*** for causing a computer to function to output …, wherein;

the model is comprised of a first neural network and a second neural network connected in a way …; the said first neural network is comprised of an input layer to intermediate layers …, the number of neurons of the input layer and the number of the output layer are the same, and weights were …; weights of the said second neural network were trained without changing …; and **Data Structure (Configuration of the model)**

the model causes the computer to perform a calculation based on the said trained weights in the said first and second neural networks … to output … from the output layer of the said second neural network. **Description defining processing of a computer**

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Practical Tips: Blockchain-Related Invention

- Application trends in Japan
- The number of blockchain-related applications started to increase from 2015 and jumped sharply in 2016.

of Blockchain-Related Applications*

Calendar Year (filing date)
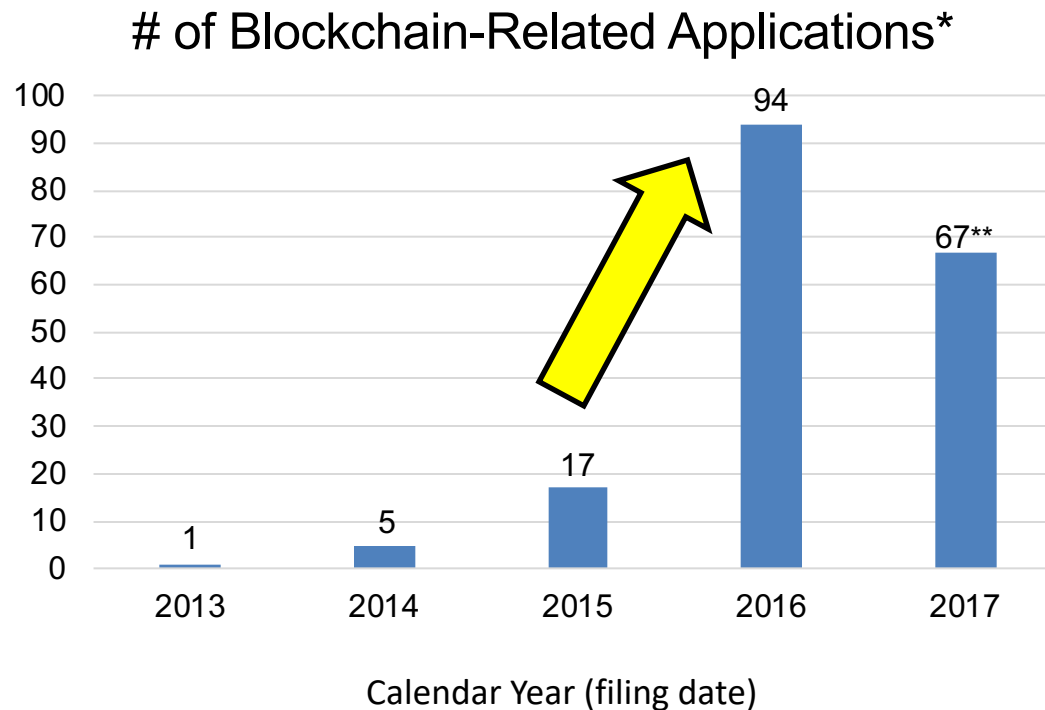
* # of applications/registered patents incorporating the words of "blockchain" in a specification or a claim.
** Not all the cases have been disclosed as of <u>September 17, 2018</u>.

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Practical Tips: Blockchain-Related Invention

- Top filers
- Non-traditional filers: credit card companies, private think tanks, etc.

| Rank	Year of 2015
1	Nippon Telegraph and Telephone Corporation(3)
1	Muroran Institute of Technology (3)
1	Kabushikikaisha Orb (3)

Rank	Year of 2016
1	Nippon Telegraph and Telephone Corporation (9)
2	Fujitsu Limited (6)
3	Mastercard International Incorporated (4), Muroran Institute of Technology (4), Nomura Research Institute Ltd.(4)

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Practical Tips: Blockchain-Related Invention

- What kind of invention is filed in Japan?

  - Improvement of blockchain technology *per se*.
    - Enhancing security (P2017-91148) Etc.

  - Application of blockchain technology
    - Cryptocurrency related applications/ Non-cryptocurrency applications
    - Guest house data management (Pat. No. 6388223)
    - Transaction of an item in a video game (Pat. No. 6404435)
    - Copyright protection (P2016-208347)   Etc.

  - Others
    - Invention itself has nothing to do with a blockchain technology. Recited in a specification as <u>alternative means of data storage</u>.

Practical Tips: Blockchain-Related Invention

- Key Technologies

  - Unique data structure leading to robustness against fraud or fabrication
  - Secure transaction technology, e.g., secret key etc.
  - Decentralized network configuration, e.g, P2P network
  - Distributed ledger

- Annoying technical feature

  among these is "P2P network."
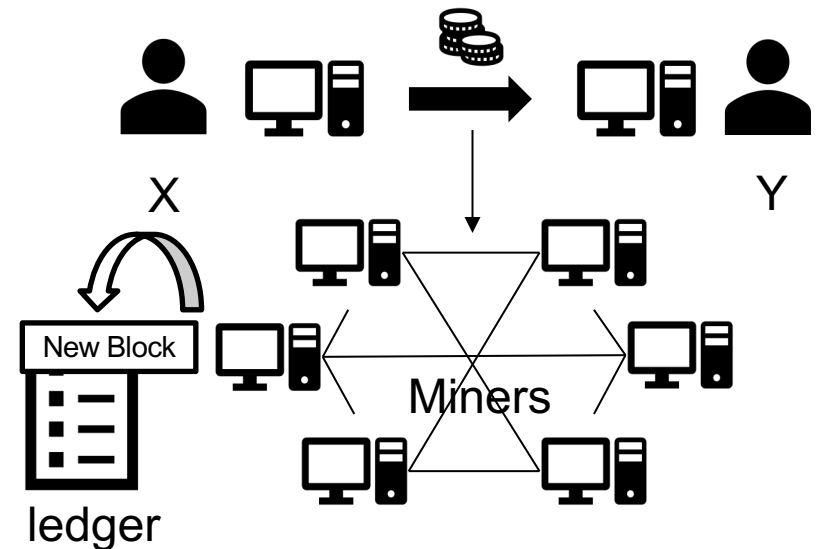
- **Tips: Identify steps to be implemented by a competitor to claim direct infringement, and claim only the target steps. Claiming a process for producing a system may be a solution.**

- If you claim *a whole system*, it is *difficult to claim a direct infringement* because owners of computers are different and the system is implemented by multiple entities.
- One idea is to *identify steps to be implemented by your competitor* and *claim the steps exclusively*.
- Another solution is to claim "*a method for producing a system*" because a system creator is highly likely to be one entity.

X

Y

New Block

Miners

ledger

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Practical Tips: Blockchain-Related Invention
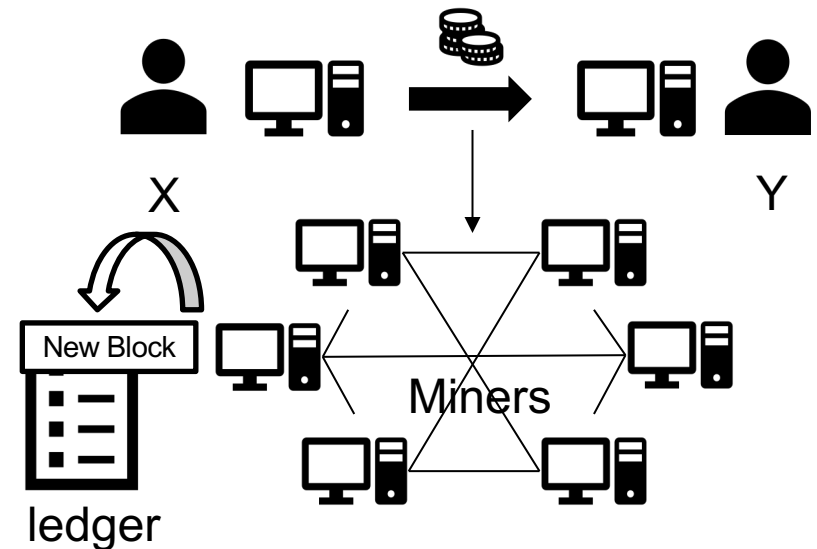
- **Tips: Be aware of broad business-method claim.**

- A points management system, comprising:
  - a user terminal and;
  - a points management device connected with the user terminal through communication network;
    - wherein the said points are residual points associated with stock price of designated company;
    - wherein the said points management device associates the residual points with the stock price by <u>updating the residual points based on a point rate</u> that shows price per point, <u>number of distributed stocks corresponding to distributed points to the user</u> and <u>updated stock price of the designated company</u>;
  - a terminal processor that transmits the residual points updated by the points management device to the user upon residual inquiry request from the user terminal that shows inquiry of the residual points.

- **Claim 3 explicitly recites blockchain elements. See JP 6042011 B1.**

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Prosecution:

Rethink your strategy to secure patents that even sounds abstract in the US.

Date structure claim may be suitable for AI trained model patented.

- Software Patent Eligibility : <u>3 step test</u>.

- AI invention: In addition to claiming a training phase, incorporate a <u>data structure claim for a trained model.</u>

- Blockchain Invention: <u>Identify competitor's act</u> and claim the steps exclusively <u>in terms of direct infringement</u>. <u>A process for producing a system</u> may be effective.

- Blockchain Invention: Be aware of broad business-method claim.

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Panasonic

- Our goal is to build <u>IP portfolios for Business Contribution</u>.

    - <u>Protect our future business </u>(from product to services)
    - <u>Monetize our IP asset </u>(license out & enforcement)

- How do we strategically build our IP portfolios in Japan?

    - <u>Interview with an Examiner</u>
    - <u>Collective Examination by Examiners</u>
    - <u>Seminars for Examiners</u>

- What kind of applications are selected for an interview ?

    - Important (contribution is clear) ⇔ Normal (not clear)

Panasonic

- Panasonic performs a lot of Interviews with positive results:
    - Allowance rate goes UP
    - No or Less claim Amendments and Shorter Remarks

- JPO Examiner "works together" with Applicants
    - Detailed oral arguments are welcome
    - They give us an idea on how to amend claims

- Interview session generally gets longer at satellite offices
    - You can discuss more with several options
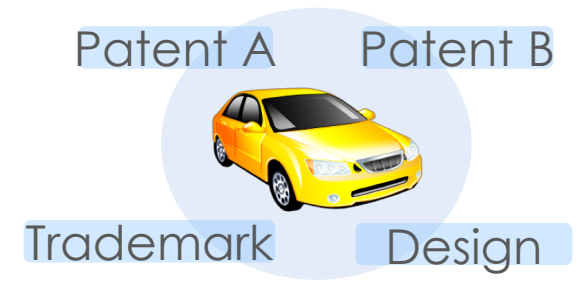   - Osaka may be a good location for an interview

JPO examiners work together.

You must negotiate with US examiners.

Collective Examination by Examiners

- List a group of applications for "Collective Examination"

- Broaden the Examiners' horizons!
  - Good chance to educate Patent, Design and TM examiners about your Technology and Business
  - Knowledge spillover
    - Examiners form a <u>team</u>
    - Examiners <u>share their knowledge</u>

    => leading to <u>consistent results among different Art Units</u>

- Protect your business by IP at a perfect timing!
  - You can <u>align IP prosecution timing with your business launch</u>
  - Even possible to <u>delay examination </u>to some extent

Panasonic

- Help an examiner keep up with technical trends
  - There is always a challenge and jump in technical evolution.
    - From DVD to Blu-ray disc
    - From AVC to HEVC to VVC
    - From 3G to 4G to 5G (including IoT)
- Bring examiner's mind back to PHOSITA level at the filing date!
  - Innovative technology (e.g., AI, IoT) evolves so rapidly.
  - Examiners tend to think the technology is common knowledge.
  - Avoid the examiners' hindsight in rejections.
- You can propose a seminar on emerging technologies
  - Examiners welcome seminars. Industry group may help you.

Panasonic

- "Strong, Broader and Useful Patents for users" (JPO quality Policy)
  - JPO examiners are becoming more and more user-friendly.
  - You will find more <u>Examiner's Suggestions in OAs</u>.

1. (Clarity) In the subject application, the recitations of the claims do not comply with the requirements prescribed under Patent Law Section 36(6)(ii) with respect to the following point(s).

…………

Claim 6 recites the phrase, "type of discovery transmission," but it is unclear as to what technique is particularly meant by the "type of discovery transmission." Accordingly, the claimed invention cannot be understood clearly.

…………

Suggestion = advice or proposal for applicant

The applicant is advised to first specify what value is particularly denoted by "the type of discovery transmission." The applicant is advised to then explain, based on the specification and/or the like of the subject application, the technical significance to include type 1 or 2 in the request message if the "type of discovery transmission" means type 1 or 2.

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Listen - JPO examiners find better prior art -

- JPO's references are much closer than those cited by USPTO.
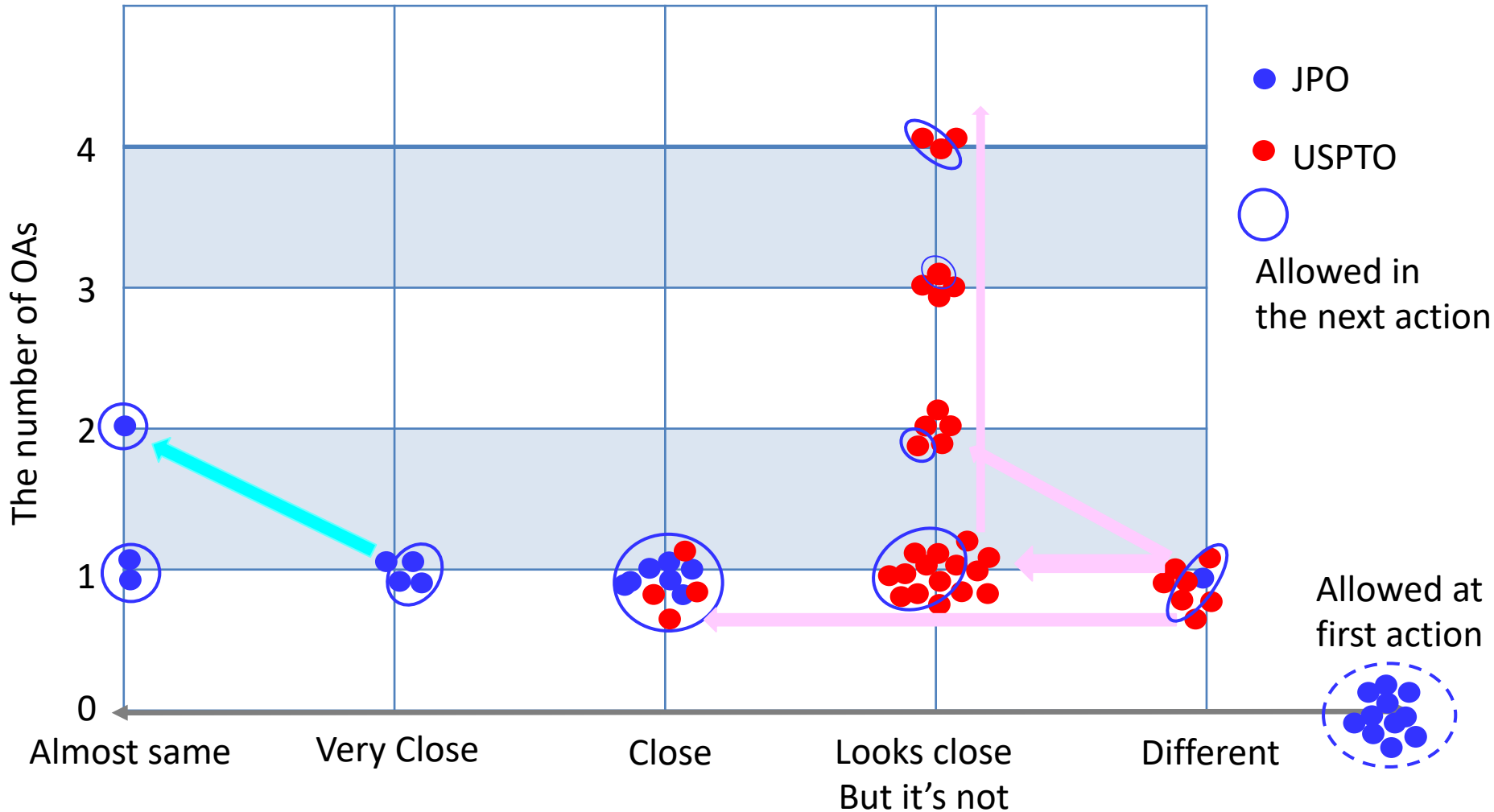
*Internal analysis of Panasonic's 50 families of digital communication related applications

Panasonic

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- Our goal is to build IP portfolios for Business Contribution
    - Protect our future business
    - Monetize our IP asset

- Strategic communication with JPO Examiners is critical
    - Interview with an Examiner
    - Collective Examination by Examiners
    - Seminars for Examiners

- JPO Examiners are friendly & work together with applicants

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Nintendo Litigation in Japan

Nintendo is Suing Mobile Game Company Colopl For $40 Million

Ouch!

by Ryan Craddock Wed 10th Jan 2018

Share: 480

White Cat Project

http://www.colopl.co.jp

http://www.nintendolife.com

Nintendo Litigation in Japan: Simple but not invalidated

- One of Nintendo's patents-in-suit (JP4,262,217)

Character
2. Drag
1. Select
Enemy
3. Release
4. Attack
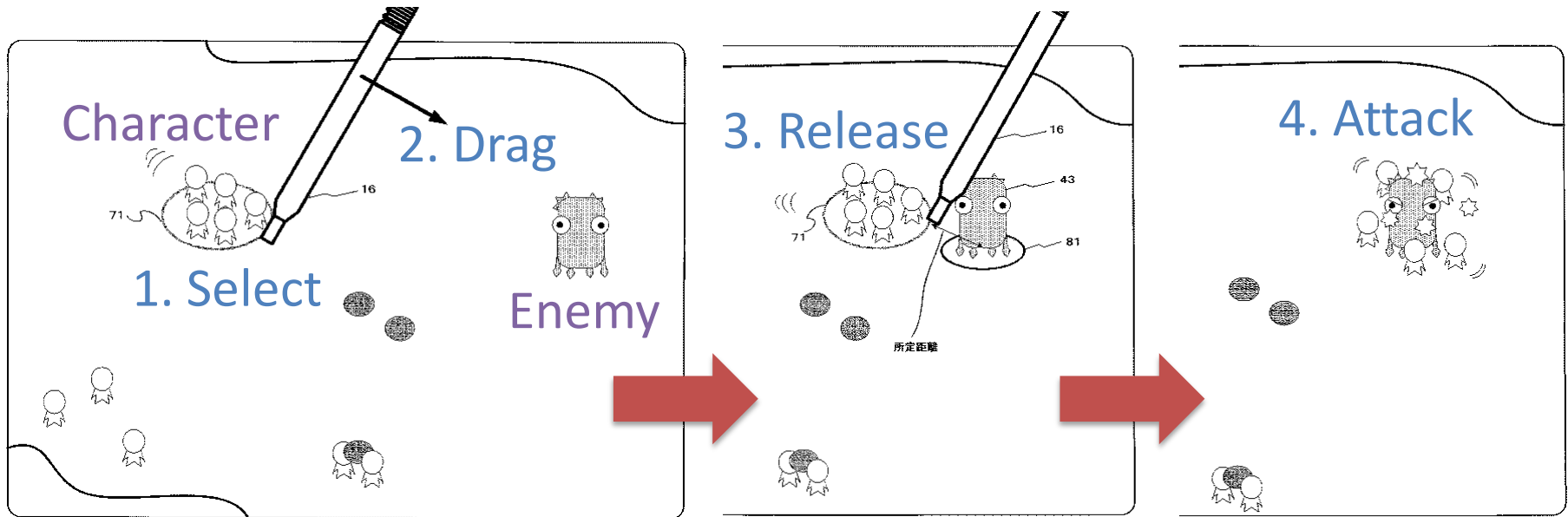
- The defendant hasn't made any invalidation arguments.
- Nintendo hasn't filed a lawsuit based on the U.S. counterpart patent.

Japanese Patent Litigation System

- Very Positive
    - Injunction: <u>Automatic</u> and with <u>NO bond</u> to execute.
    - Compact proceedings: <u>15 months</u> on average.
- Not bad
    - Success rate: 43.8%

Overall	**Success**	**Fail**
	43.8%	56.2%
Judged cases (66.2%)	16.0%	50.1%
Settled cases (33.8%)	27.8%	6.1%

Settled with injunction and/or monetary payment

The information on settled cases was NOT publicly available until 2017.
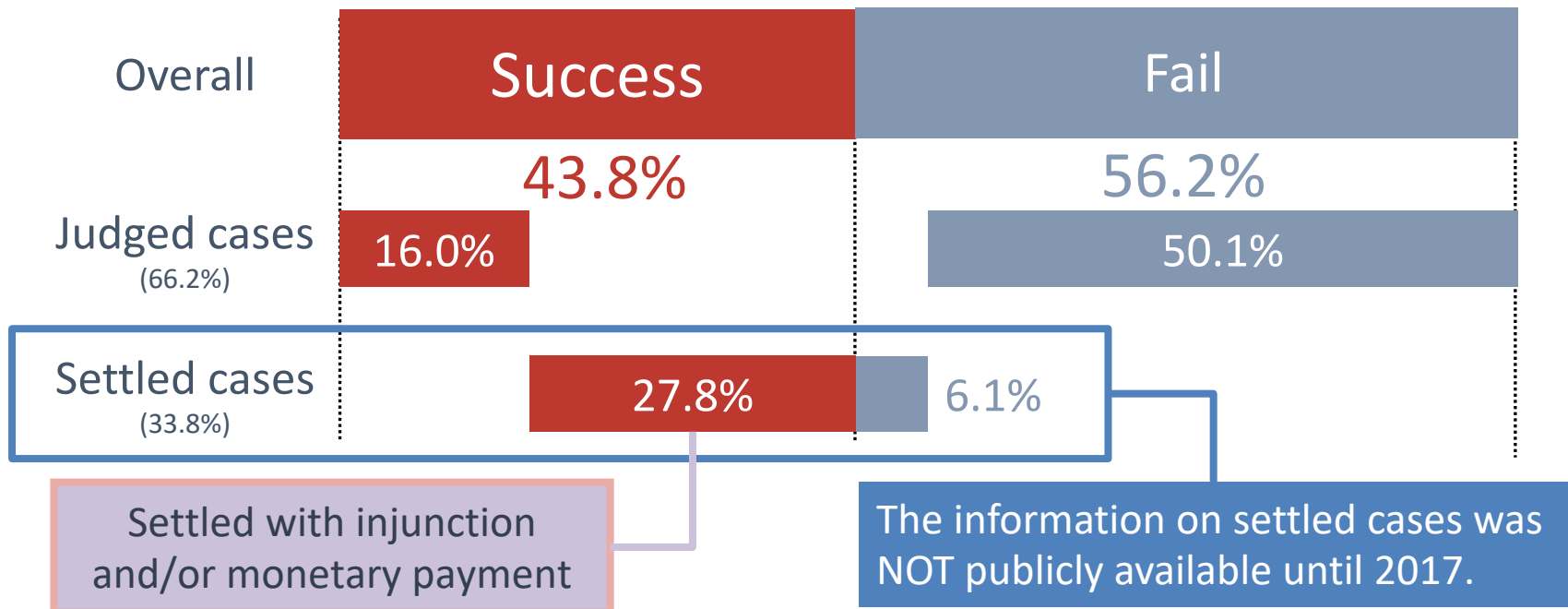
This data is derived from statistics issued by the IP High Court between 2014 and 2017.

A Discovery-Like Tool for Patent Lawsuits

Plaintiff

- Burden of proof is on plaintiff.
- Plausible evidence is sufficient.

Shift

Defendant

- Defendant has duty to explain reasons when they deny the alleged infringement.

Example: In-Camera Inspection

- Freee v. Money Forward (Heisei 28 (wa) No.35763)

Petition for an order
to submit a document

Submitted the document

| Plaintiff Freee | → 1 → | Court | ← 2 ← | Defendant MF |

← 4 ←

Rejected the petition

→ 3 →

Inspected the document
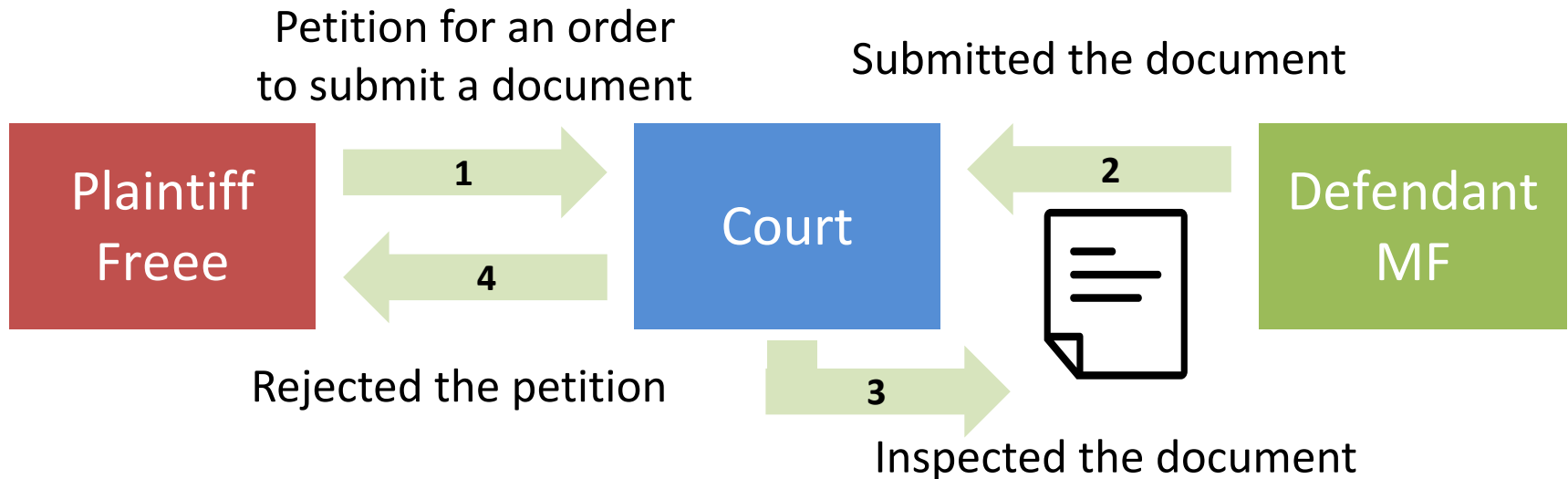
- Judges helped the patentee collect evidence. The court concluded nothing in the document would substantiate plaintiff's allegations (i.e. non-infringement). But <u>the judge's help to collect evidences is welcome among patent litigators</u>.

- Judges are getting <u>more patentee friendly</u>.

Onsite Inspection

- Patentee friendly trends will likely continue.

（２）新たな証拠収集手続のイメージ

　新たな証拠収集手続（以下「本手続」）[4]は、以下に詳述するように、当事者の申立てにより、一定の要件の下で、営業秘密等の保護に十分に配慮しつつ、裁判所が、中立公正な専門家に対し、相手方当事者の工場等において必要な資料を収集して報告書を作成する旨の命令をすることができる制度が適切である。

Gist of the paragraph: It is appropriate to establish a system where, upon a request from a party, a court may order an expert in a neutral position to collect material necessary for proving patent infringement at an opponent's site such as a factory and to make a report under certain requirements and with due care of trade secret. Page 9.

JPO, Patent Advisory Committee Report Draft: Discussion on Litigation System for Effective IP Protection (Public comment period lasts until February 8th. https://www.jpo.go.jp/iken/pdf/190125_tokkyosedo-hokokusho.pdf.

Litigation:

Improving. Automatic injunction with compact proceedings and no bond. Judges are getting more patentee friendly.

- Japan is a promising venue to enforce software patents.

- Japanese patent litigation system has positive features:
  - Strong automatic injunctions with no bond
  - Compact Proceedings
  - Relatively high success rate (not bad!)

- While there is no discovery procedure in Japan, Japanese courts have the ability to consider discovery-like motions. It looks judges are willing to do it!

Thank you!

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International Activities Center

Atsushi Sato
TMI Associates

Kaoru Takagahara
Panasonic Intellectual Property
Corporation of America