Regional Workshop on Dissemination and Effective Utilization of Patent Information

Roles of
IP Offices for
Dissemination and Utilization of
PI (Patent Information)

October 16, 2018
Japan Patent Office

1. Creation, Dissemination and Utilization of PI

2. Approach to Maximize Benefits Utilizing PI

3. Next Step

What is PI (Patent Information) ?

> Patent information is the information which is created associated with the application and establishment of right for patent, utility model, design and trademark
>
> These information is created and provided by IP Offices for users

● **Publications**
- **Publication of unexamined application, gazette, etc.**

● **Dossier information**
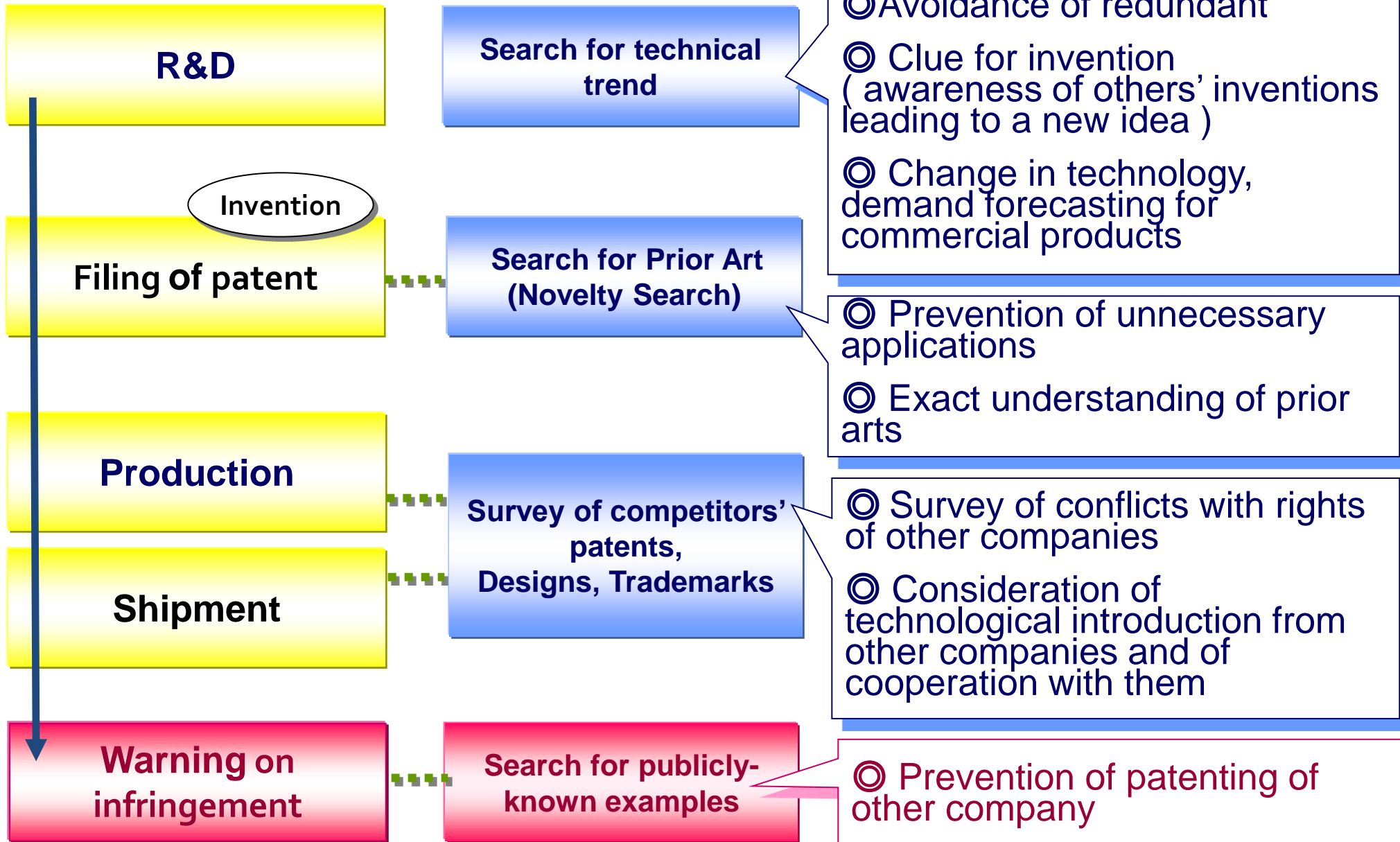- **Information of patent application procedure and examinations**

● **Abstracts**
- **English abstracts of Japanese unexamined patent applications (PAJ)**
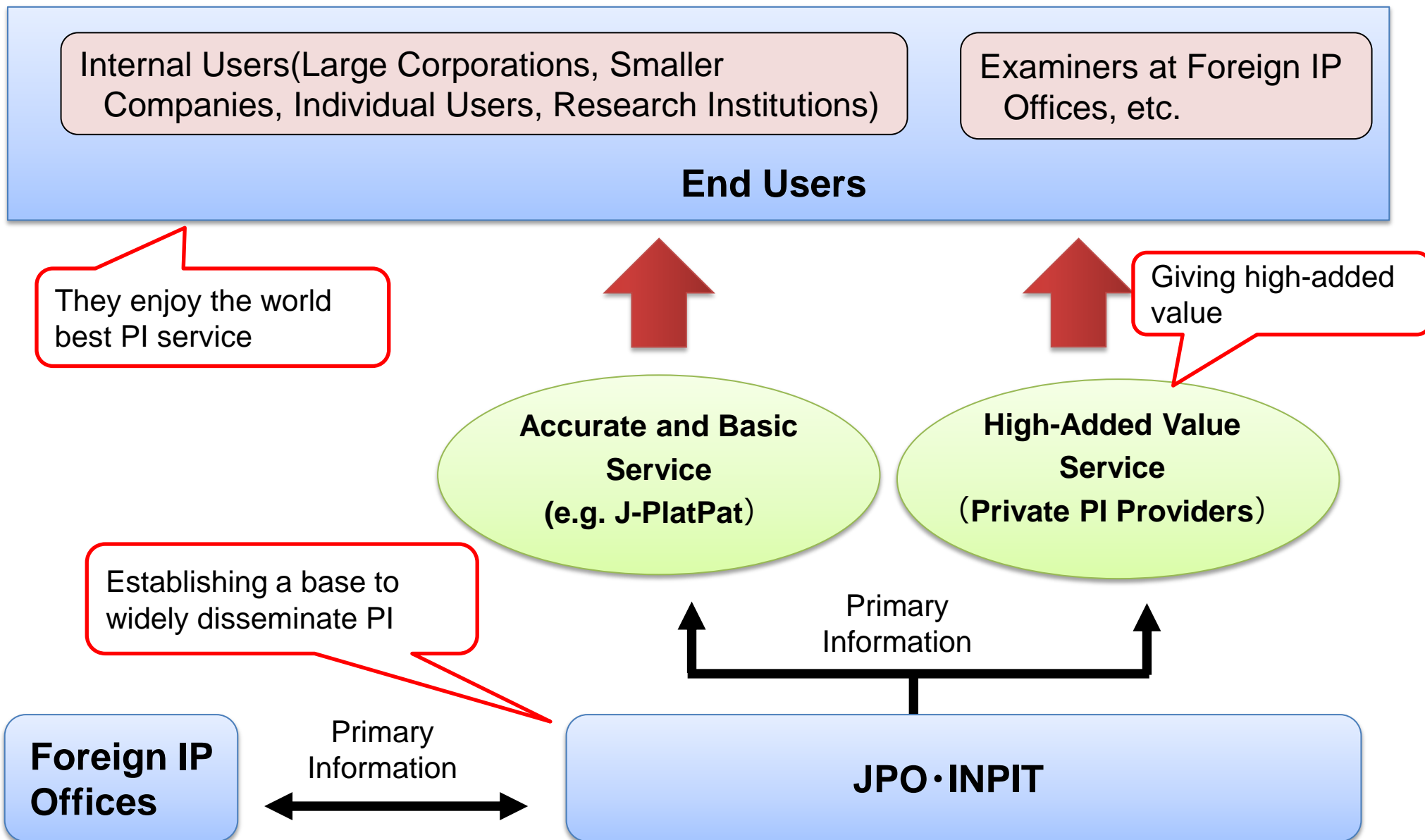
● **Legal status data and bibliographic data**
- **Standardized data**

➢PI supports corporate R&D activities.

➢Companies can come up with the strategy to deal with their competitors by obtaining their technical information through PI.

➢Companies can decide whether or not to start a business in a foreign country by investigating trends in other countries through PI.

R&D and PI (2)

R&D

Search for technical trend

◎Avoidance of redundant

◎ Clue for invention (awareness of others' inventions leading to a new idea)

◎ Change in technology, demand forecasting for commercial products

Invention

Filing of patent

Search for Prior Art (Novelty Search)

◎ Prevention of unnecessary applications

◎ Exact understanding of prior arts

Production

Shipment

Survey of competitors' patents, Designs, Trademarks

◎ Survey of conflicts with rights of other companies

◎ Consideration of technological introduction from other companies and of cooperation with them

Warning on infringement

Search for publicly-known examples
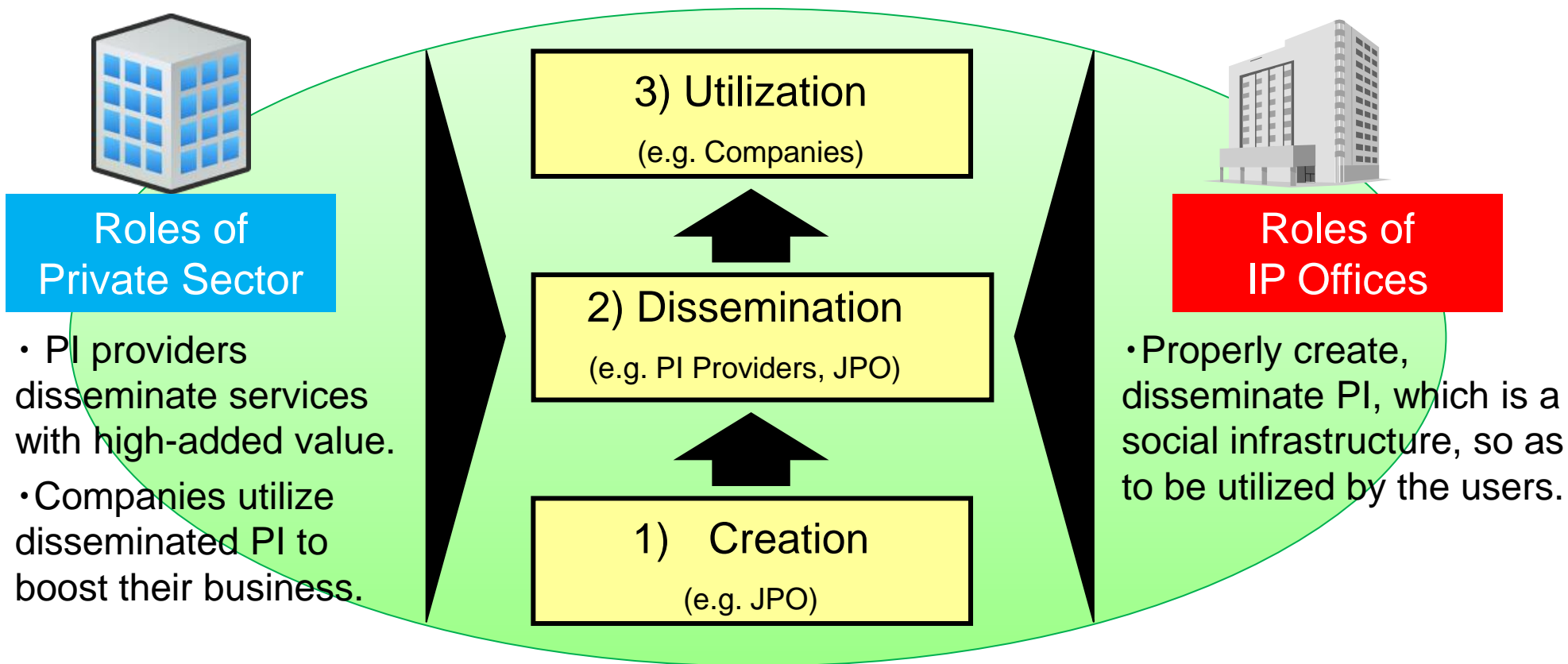
◎ Prevention of patenting of other company

➢ PI forms the foundation of the Industrial Property Rights System, <u>its creation, dissemination and utilization is one of the important policy challenges for IP Offices</u>.

➢ Responsibilities of PI dissemination：

【Public Sector】 Provides accurate and basic primary information

【Private Sector】 Provides high-added value service processing the primary information given by its public sector

Flow of PI Data (2)

End Users

Internal Users(Large Corporations, Smaller Companies, Individual Users, Research Institutions)

Examiners at Foreign IP Offices, etc.

They enjoy the world best PI service

Giving high-added value

Accurate and Basic Service (e.g. J-PlatPat)

High-Added Value Service （**Private PI Providers**）

Establishing a base to widely disseminate PI

Primary Information

Foreign IP Offices

Primary Information

JPO・INPIT

1. Creation, Dissemination and Utilization of PI

2. Approach to Maximize Benefits Utilizing PI

3. Next Step

Approach to Maximize Benefits Utilizing PI

> PI has three phases; the first phase of creation, the second phase of dissemination and the third phase of utilization.

> In order to maximize the benefits from PI, an IP Office and a private sector should play their respective roles.

Roles of Private Sector

・PI providers disseminate services with high-added value.

・Companies utilize disseminated PI to boost their business.

3) Utilization
(e.g. Companies)

2) Dissemination
(e.g. PI Providers, JPO)

1) Creation
(e.g. JPO)

Roles of IP Offices

・Properly create, disseminate PI, which is a social infrastructure, so as to be utilized by the users.

Roles to play in each phase to maximize the benefits from PI

Creation of PI

Critical points to keep in mind ♥

1) Accuracy	Correction of the Data Loss and the Errors
2) Usability	XMLization Expansion of Data Coverage

Phase 1: How JPO improve PI data (1)

1) Accuracy	Correction of the Data Loss and the Errors

1. JPO'S Data Quality Control System

- ✓ 2 staff, 3 support staff to run the system
- ✓ Manual error correction of PI, such as Publications (e.g. drawing data)
- ✓ Staff respond to inquiries regarding errors from users (examiners, external users)

2. Automated process

- ✓ Application form check by online filing software
- ✓ Error check during data storing

3. International Cooperation

- ✓ Creation of Authority File (*)

(*) a list of all patent document publication numbers issued by IP Offices for the assessment of completeness of data storage

Online Filing Software

Warning:
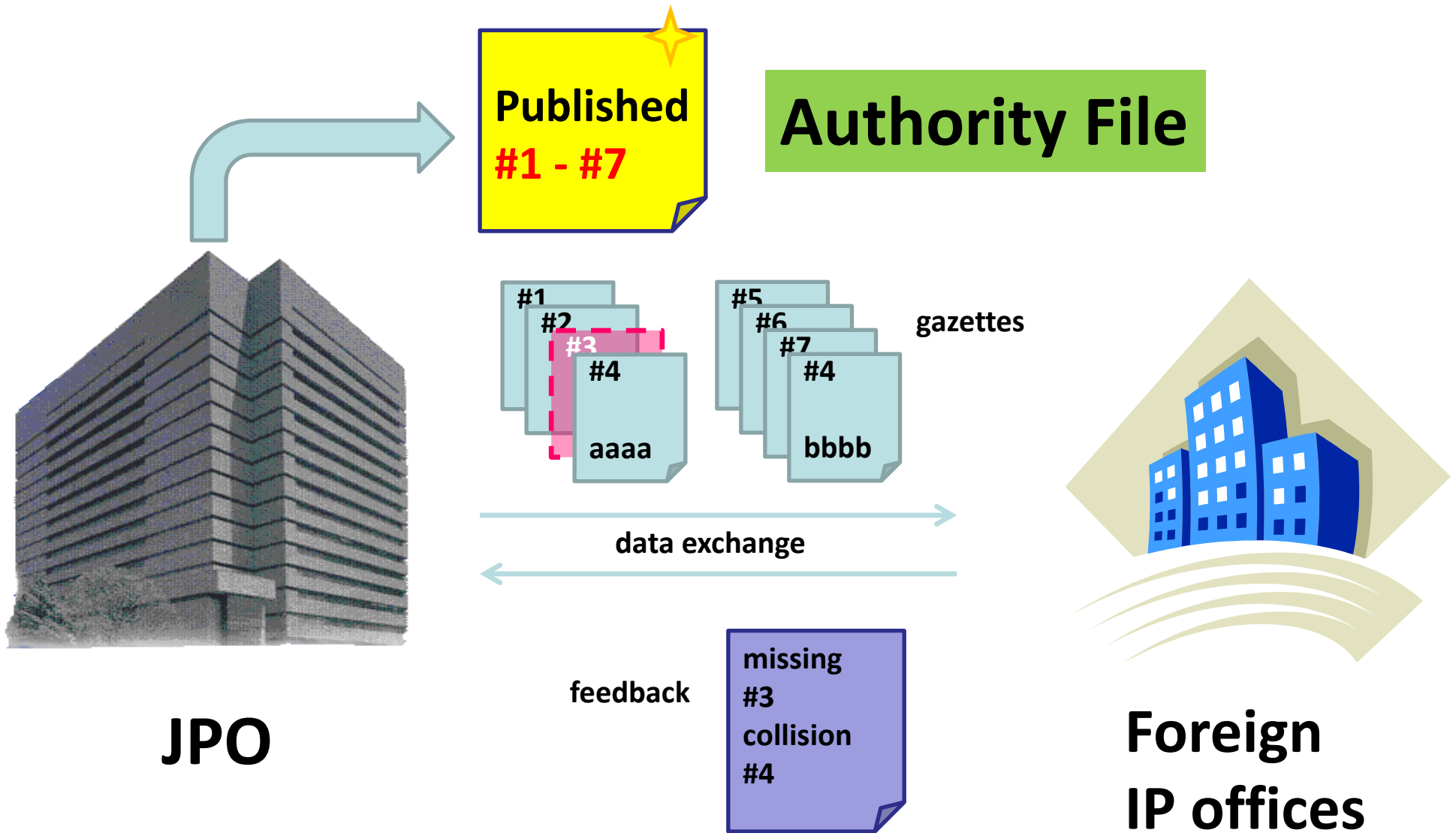No "title of invention" is found. Please click the link to see the details.

Applicants

JPO

Database

```
<app><nu
m>1</num
>...............
.................
</app>
```

```
<app><nu
m>1</num
>...............
..<title>.....
</app>
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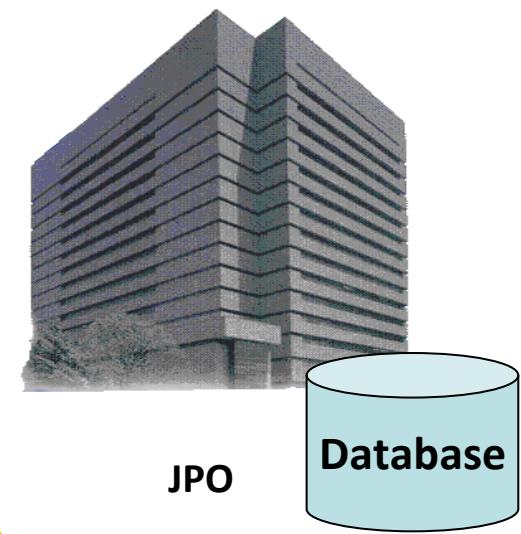
Accuracy (Authority File)

Published #1 - #7

Authority File

#1
#2
#3
#4
aaaa

#5
#6
#7
#4
bbbb

gazettes

data exchange

feedback

missing
#3
collision
#4

JPO

Foreign
IP offices

Phase1: How JPO improve PI data (2)

2) Usability	XMLization Expansion of Data Coverage

1. Digitalization and check of PI

✓ OCR conversion of past publications and manual correction of PI

2. Creation of translation resources

✓ Creation of English abstracts of Japanese unexamined patent applications (PAJ)

✓ Development of machine translation accuracy (Japanese-English machine translation) and translation functions
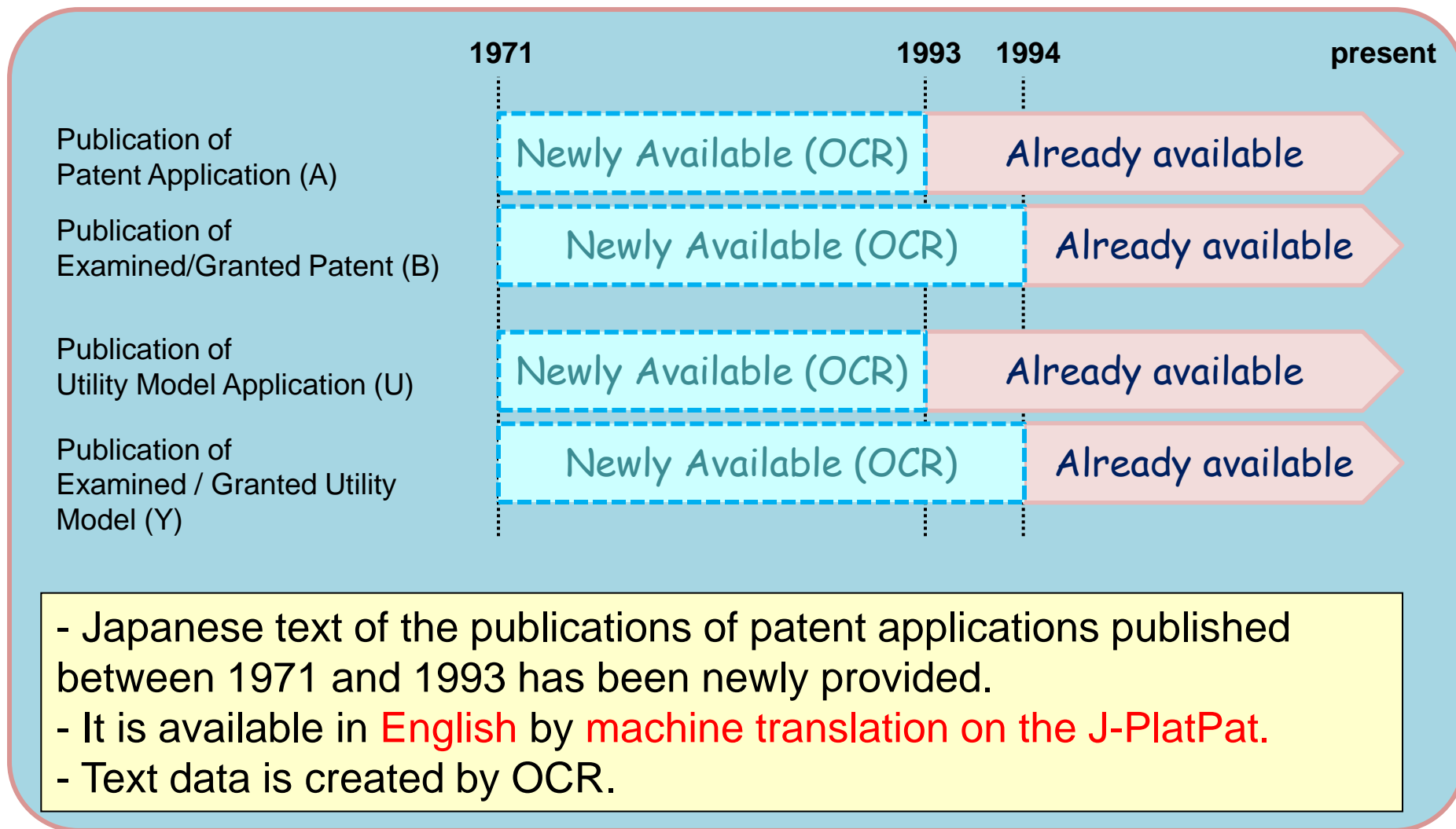
Phase1: How JPO improve PI data (3)

2) Usability	XMLization Expansion of Data Coverage

3. Data Exchange

✓ Achieving data variations by receiving PI data from other countries

4. International Cooperation

✓ Promoting XMLization project (IP5)

✓ Promoting digitalization of PI data through WIPO Japan Fund

Usability (OCR data)

	1971	1993	1994	present

Publication of Patent Application (A) — Newly Available (OCR) | Already available

Publication of Examined/Granted Patent (B) — Newly Available (OCR) | Already available

Publication of Utility Model Application (U) — Newly Available (OCR) | Already available

Publication of Examined / Granted Utility Model (Y) — Newly Available (OCR) | Already available

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- Japanese text of the publications of patent applications published between 1971 and 1993 has been newly provided.
- It is available in English by machine translation on the J-PlatPat.
- Text data is created by OCR.

JPO has gradually cleaned the OCRed text data. The publications cited as a prior art by JPO's examiners in 2016 or later are covered.

Usability (data exchange)

> JPO completed data exchange agreement with Indonesia, the Philippines, Thailand, Vietnam and Malaysia (*).

> India agreed on Joint Statement stipulating data exchange with the JPO.

> JPO will continue talking with Brazil and Mexico to reach data exchange agreement

（※）Received PI data is to be provided free of charge to general users through "Foreign Patent Information Service (FOPISER)".

Indonesia

Malaysia

Thailand

Vietnam

Philippines

Usability (WIPO Japan Fund)
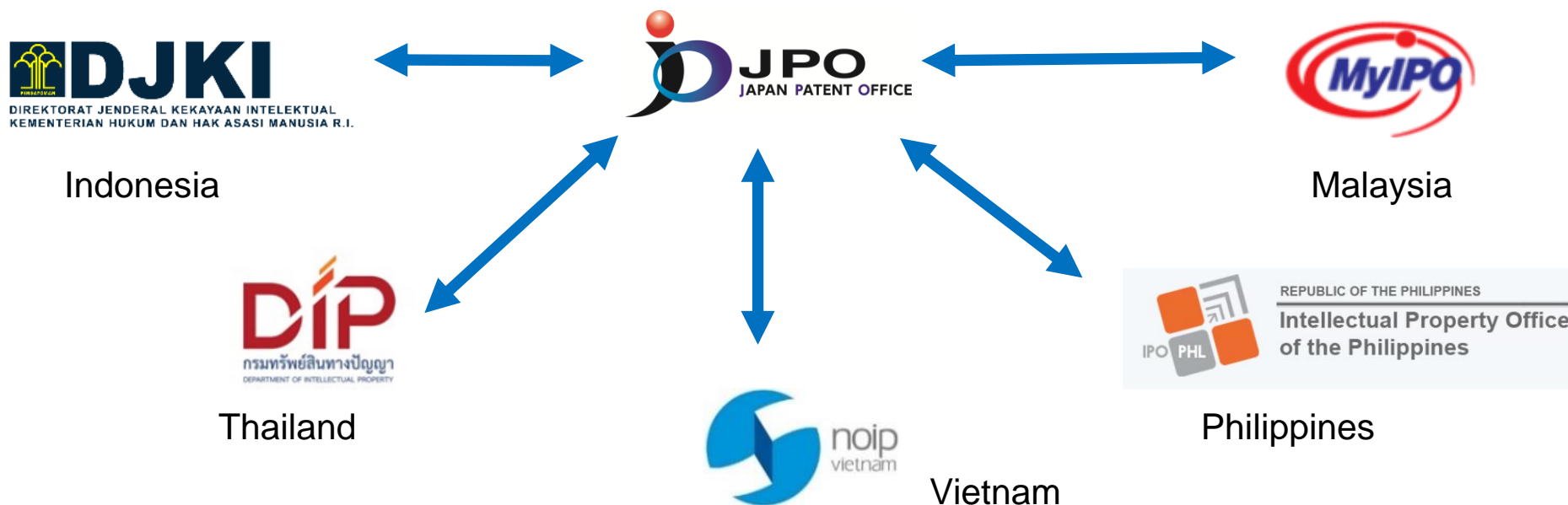
> Through the WIPO Japan Fund, JPO supports digitalization of paper documents, in order to improve the data availability of IP information of ASEAN and other emerging countries.

Supporting the digitalization of paper application documents, etc.
to improve emerging countries' accessibility to PI

\<Supporting activities completed in FY2017\>
● Data Cleaning: Indonesia
● Workflow Optimization: Mongolia, Cambodia

\<Supporting activities to be done in FY2018\>
● Digitalization support: Vietnam, Philippines
● Optimization of workflow: Vietnam, Laos
● Workflow optimization (follow-up): Thailand, Philippines

Phase 2: Dissemination of PI

Dissemination of PI

Critical points to keep in mind ❤️

1) Timeliness	Promptness of providing the data
2) Barrier Free Flow of PI	Data availability based on free of charge

1) Timeliness	Promptness of providing the data

1. PI is provided through Internet

✓ Providing online web service (J-PlatPat)

✓ Providing bulk download service (Internet Gazette, Standardized Data)

2. PI is to be updated in a timely manner

✓ One month delay of updating data is to be resolved by system development in May, 2019

✓ Data exchange with Foreign IP Offices is done through FTP server

2) Barrier Free Flow of PI | **Data availability based on free of charge**

1. **PI is provided free of charge**
   - ✓ Basic service (online service, bulk data download service) is provided free of charge.

2. **Communicating with users about how to use PI services**
   - ✓ Service introduction regarding J-PlatPat are held throughout Japan (17 sessions are to be held in FY2018).
   - ✓ Not only introducing the functions of J-PlatPat, but also giving solutions to common problems raised by the users.
     (JPO distributes J-PlatPat's handbooks and brochures including the topic of failure cases to the users)

2) Barrier Free Flow of PI | Data availability based on free of charge

3. Providing PI to external users

✓ JPO try to stipulates to provide PI to a third party in the data exchange agreement with foreign IP Offices

✓ PI is provided to external users through online services by Foreign IP Offices (e.g. PATENTSCOPE, Espacenet)

Barrier Free Flow (J-PlatPat's Handbooks)

> J-PlatPat can be used to propose a solution for various problems users have.

■Case Study 1

Try to commercialize products that can be manufactured not only by their own technology, but also by patents that other companies have.

Goal   Let's use J-PlatPat to find out companies with a technology that can lead to a possible collaboration.

■Case Study 2

Try to collect companies profiles for an extension of distribution channels

Goal   Let's use J-PlatPat to search for a gazette information filed by companies to which you want to distribute your products.

"BASIC PRINCIPLES" of IP5 PI Policy

The IP5 Offices share the common understanding that industrial property information shall be provided to the public and to any third party based on the existing principle of marginal cost or free of charge. In order to support a *barrier free flow* of information among industrial property offices, data exchanged by the IP5 Offices may be provided to third party industrial property offices in accordance with these guidelines and under the condition that the reciprocity principle is accepted by the third party industrial property office.

Barrier free exchange of data to be widely disseminated

- 2010: Agreed on Trilateral PI Policy
- 2011: Started to discuss the expansion of Trilateral PI Policy to IP5
- 2012: Drafted IP5 PI Policy proposed by EPO
- 2013: Agreed on IP5 PI Policy presented at IP5WG2
- 2014: Agreed on Action Plan for IP5 PI Policy

**Expansion of frameworks
for barrier free flow of PI**

Other Countries

Trilateral

IP5

| 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Year |

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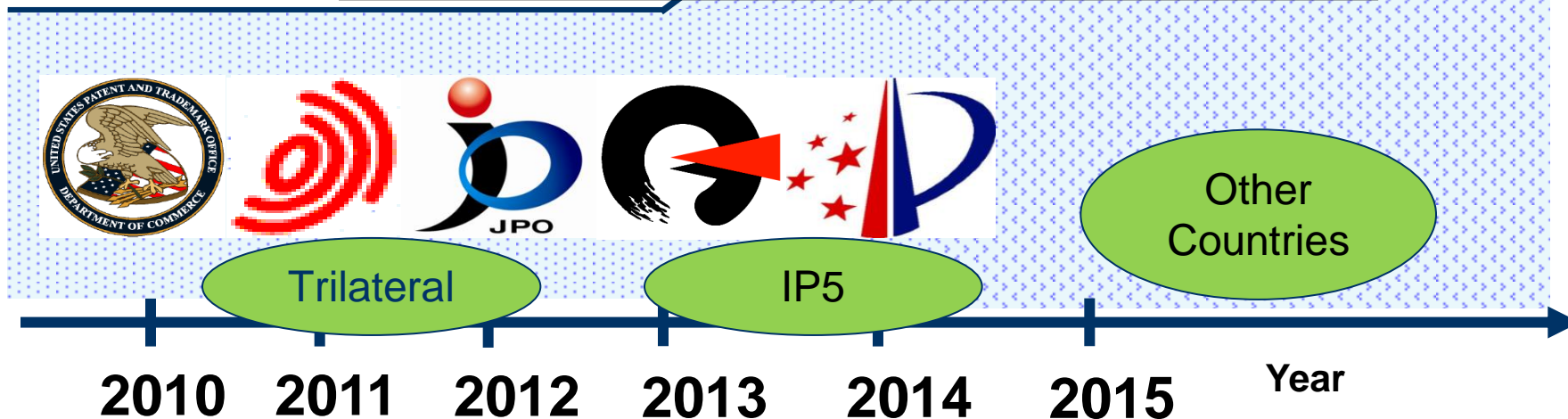
Utilization of PI

Critical points to keep in mind ♥

1) System Development	Improvement of Services

2) Acquisition of Information	User Needs, Technical Trends, Activities of other IP Offices

Phase 3: How JPO support utilization of PI (1)

1) System Development | Improvement of Services

1. Non-stop system development based on needs etc.

- ✓ Upgrading J-PlatPat (Enhancement of English search tool and machine translation functions)
- ✓ Improved the method to provide PI (offering a server to provide PI)
- ✓ Considering other methods to provide PI (e.g. API)

Phase 3: How JPO support utilization of PI (2)

2) Acquisition of Information | **User Needs, Technical Trends, Activities of other IP Offices**

1. Opportunities to obtain user needs
- ✓ Exchanging opinions with users
- ✓ Collecting needs by questionnaire
- ✓ Collecting feedback after conference

## 2. Grasping technological trends and the efforts of foreign IP Offices
- ✓ Utilization of AI technology, big data and open sources
- ✓ Understanding the service menu of online service provided by foreign IP Offices

Case Study of Utilization

1. Research
- ✓ Prior art search
- ✓ Free to operate (FTO)
- ✓ Infringement search
- ✓ Technical trends surveys

2. Analysis
- ✓ Patent mapping
- ✓ IP landscape
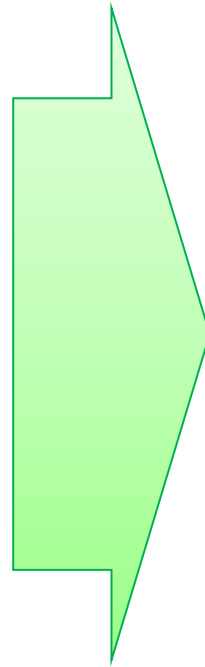
Corporate Activities

Companies can plan their own business strategy by conducting survey and analysis on competitors status, technical trends etc.

IP Offices

IP Offices can improve the quality of examinations by enhancing the search functions for examiners and by analyzing trends in technical fields.

Overview: Roles of IP Offices and Private Sector

●Roles of IP Offices

IP Offices are required to:

・Create and disseminate PI appropriately for anyone to utilize it

・Create **"accurate" PI** advancing the quality of its services

・Achieve **"barrier-free flow" of PI** for anyone to easily access it

●Roles of Private Sector

PI providers are required to:

・Process PI to disseminate services with high-added value to users

Companies are required to:
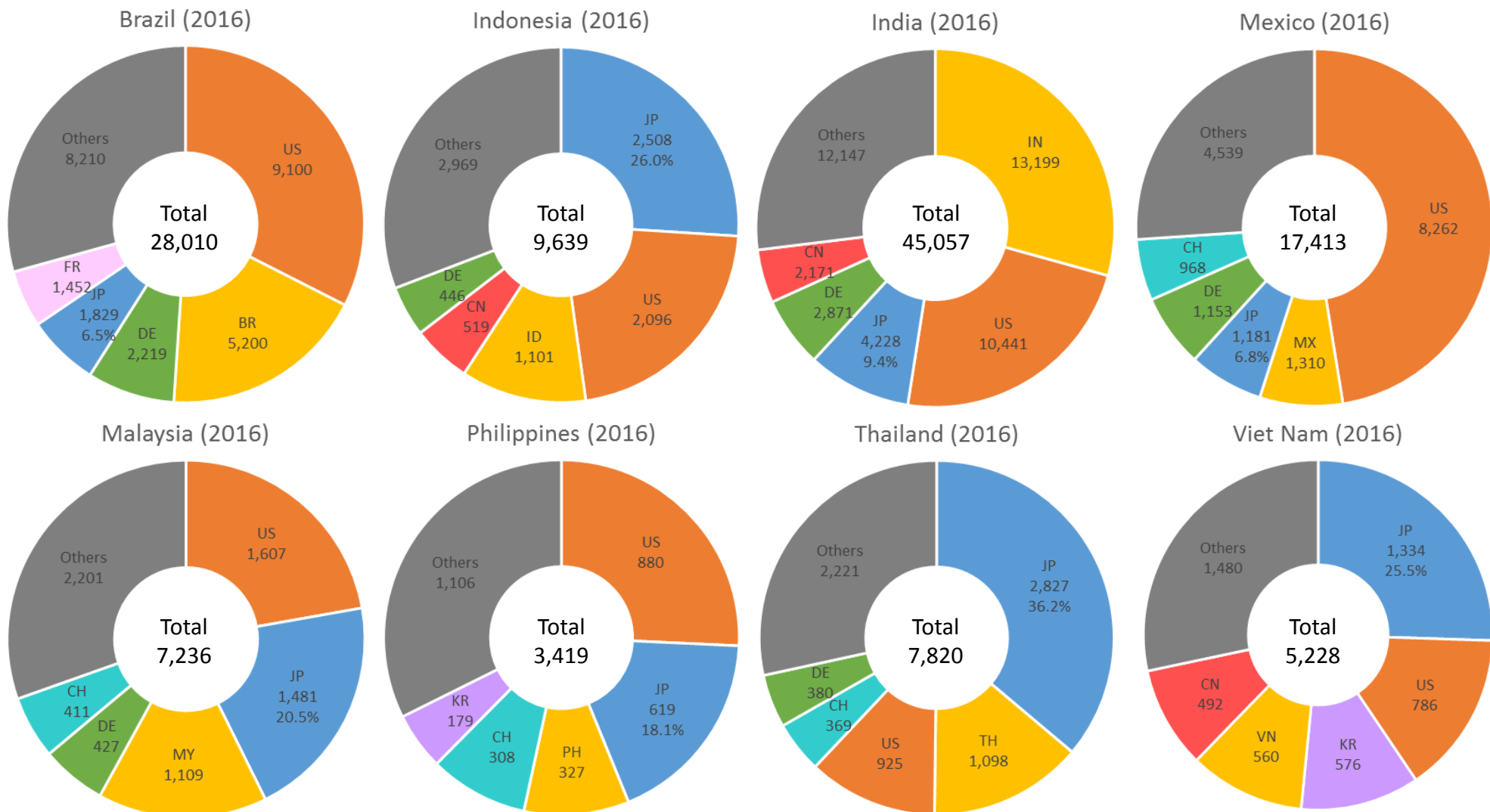
・Boost their business by utilizing the disseminated PI

More Economic Activities in your country!	More Economic Investments from other countries !

Patent Applications filed by JP Companies

JPO JAPAN PATENT OFFICE

> The proportion of patent applications filed by JP companies is high.

Application share by applicant's nationality in each country（Patent）

Brazil (2016)
Total 28,010
- Others 8,210
- US 9,100
- BR 5,200
- DE 2,219
- JP 1,829 6.5%
- FR 1,452

Indonesia (2016)
Total 9,639
- JP 2,508 26.0%
- Others 2,969
- US 2,096
- ID 1,101
- CN 519
- DE 446

India (2016)
Total 45,057
- IN 13,199
- Others 12,147
- US 10,441
- JP 4,228 9.4%
- DE 2,871
- CN 2,171

Mexico (2016)
Total 17,413
- US 8,262
- Others 4,539
- MX 1,310
- JP 1,181 6.8%
- DE 1,153
- CH 968

Malaysia (2016)
Total 7,236
- US 1,607
- Others 2,201
- JP 1,481 20.5%
- MY 1,109
- DE 427
- CH 411

Philippines (2016)
Total 3,419
- US 880
- Others 1,106
- JP 619 18.1%
- PH 327
- CH 308
- KR 179

Thailand (2016)
Total 7,820
- JP 2,827 36.2%
- Others 2,221
- TH 1,098
- US 925
- CH 369
- DE 380

Viet Nam (2016)
Total 5,228
- JP 1,334 25.5%
- Others 1,480
- US 786
- KR 576
- VN 560
- CN 492

（Source） Created by JPO based on WIPO IP Statistic Data Center

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Meaning of JPO's PI Data

Your country

Prior art search before filing to Japan

Clearance search

Survey of technology trend in Japan

Your Office

Capacity building

JPO's PI data

Data exchange

Your Office's IP data

Economic Development

JP companies

Prior art search before filing to your country

Clearance search

Survey of technology trend in your country

Enhancement of Understanding of IP situation in your country

Increase of IP applications filed to your country

Increase of IP rights in your country

Increase of Investment from Japan

1. Creation, Dissemination and Utilization of PI

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Number of Patent Applications Filed Worldwide

JPO JAPAN PATENT OFFICE

> ➢The numbers of patent applications and PCT international applications have been increasing year by year.
> ➢Expansion of IP application will raise the value of PI information as big data.

Trends in the number of patent applications
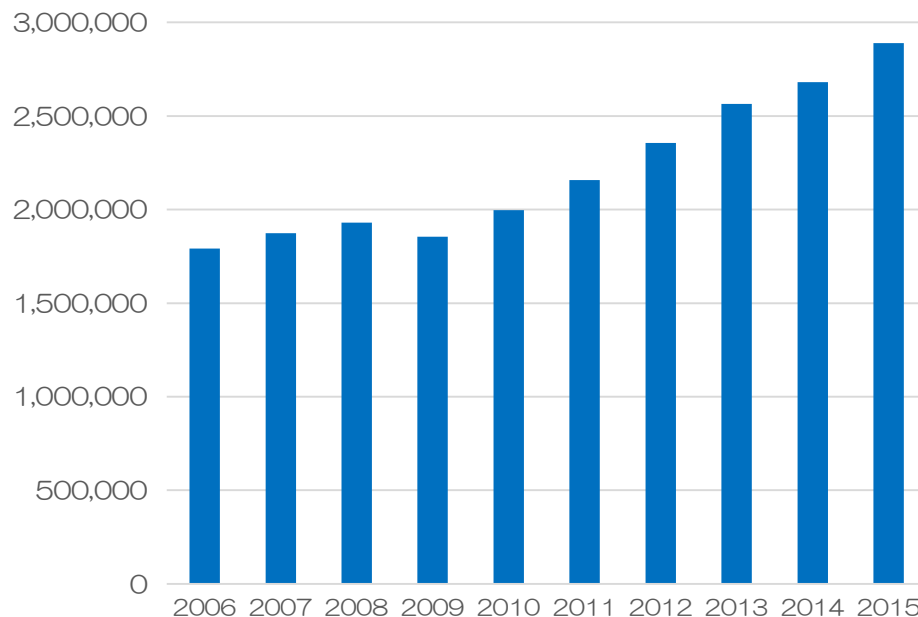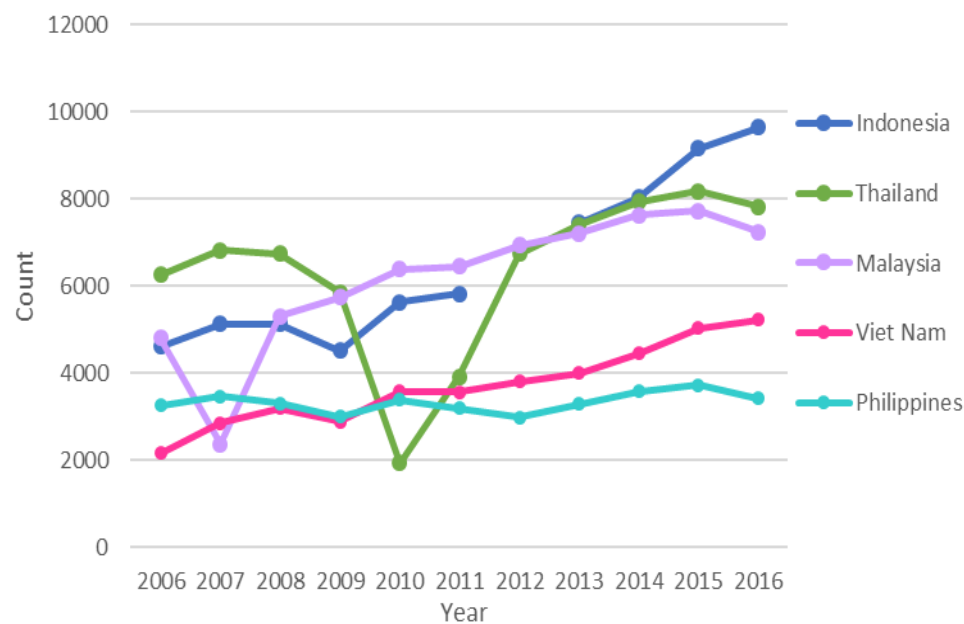
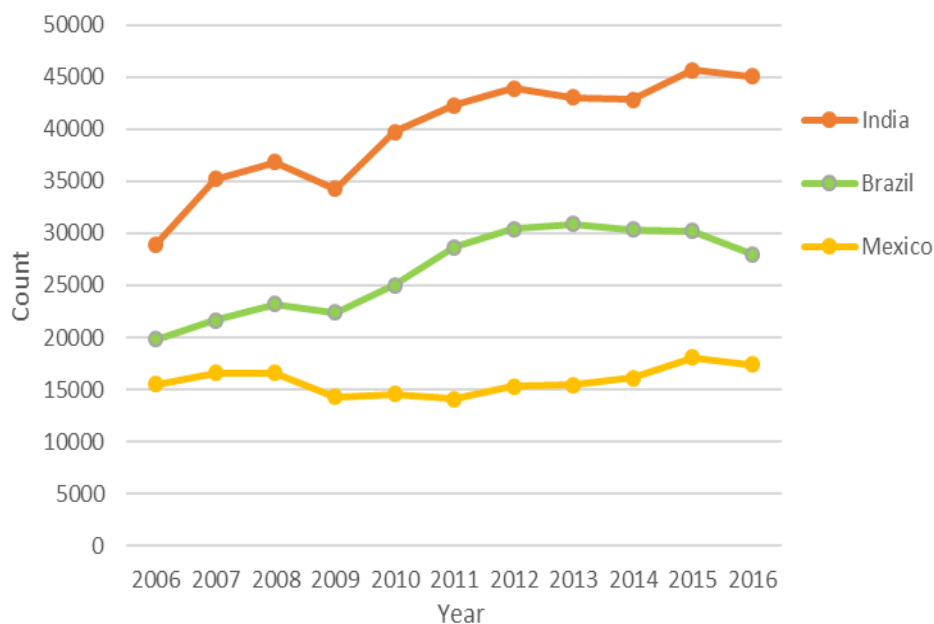Trends in the number of PCT international applications
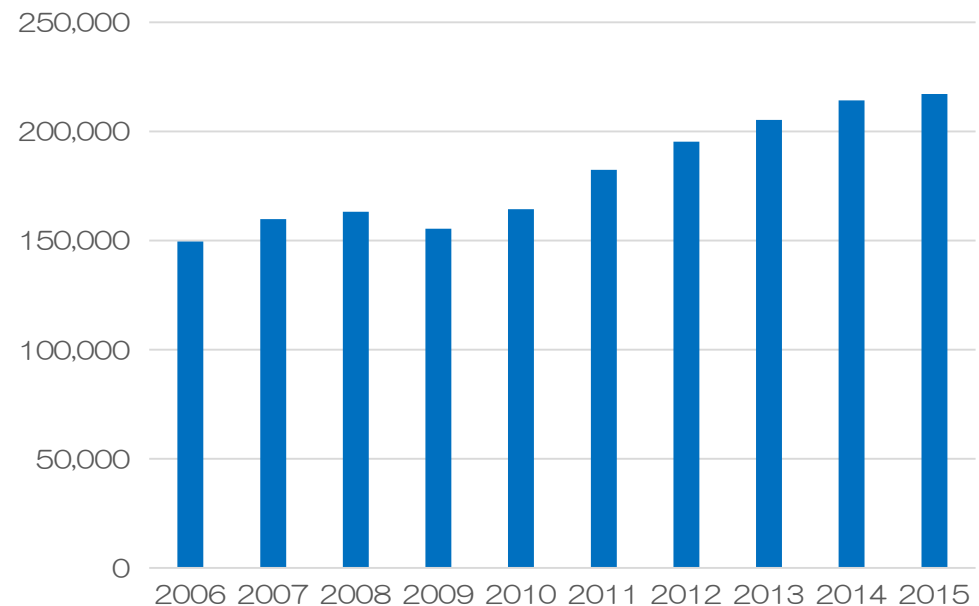
（Source）　Created by JPO based on WIPO IP Statistic Data Center

Number of Patent Applications by Country

> ➤ Overall, the number of patent applications is increasing.
> ➤ In ten years, India is 1.6 times, Brazil, 1.4 times, Mexico 1.1 times, Indonesia 2.1 times, Thailand 1.2 times, Malaysia 1.5 times, Vietnam is 2.4 times bigger in number and the Philippines stays the same.
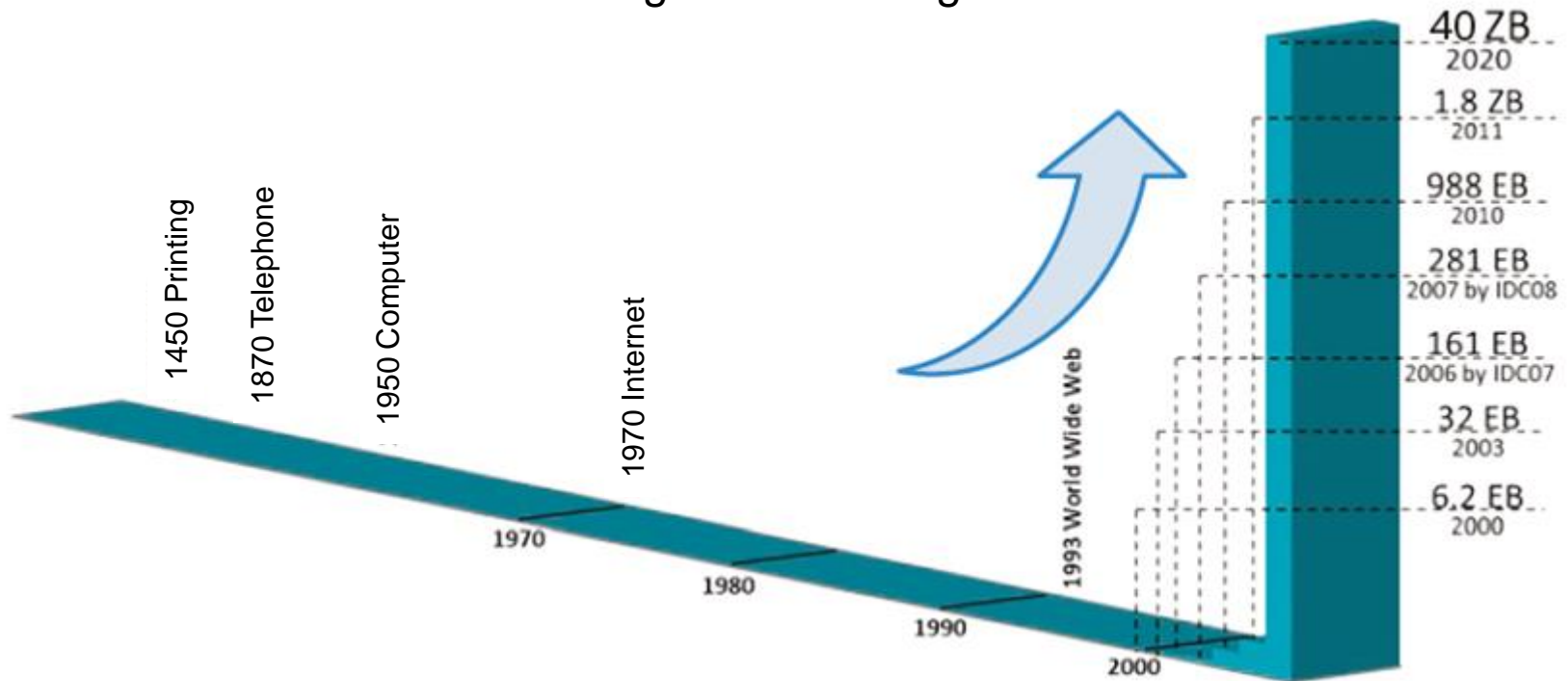
Total Patent Applications by Filing Office

（Source）　Created by JPO based on WIPO IP Statistic Data Center

※Note:the number of patent applications in 2012 in Indonesia has not been obtained yet

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Impact of Big Data

> The amount of international digital data tends to increase year by year.
> (2010: 988 exabyte (0.988 trillion gigabytes)
> → 2020: about 40 zettabytes (40 trillion gigabytes))

Estimate of increasing amount of digital data

1450 Printing
1870 Telephone
1950 Computer
1970 Internet
1993 World Wide Web

1970
1980
1990
2000

40 ZB
2020
1.8 ZB
2011
988 EB
2010
281 EB
2007 by IDC08
161 EB
2006 by IDC07
32 EB
2003
6.2 EB
2000

(Source) Ministry of Internal Affairs and Communications

Taking Advantage of PI Data

➢ **Necessity to Digitalize PI data**

・A global trend of an increase in the number of applications requests IP Offices to accelerate a process speed of each operation.

・A digitization of PI will contribute to an automation of operational process, and texted and structured PI data accelerates its process furthermore.
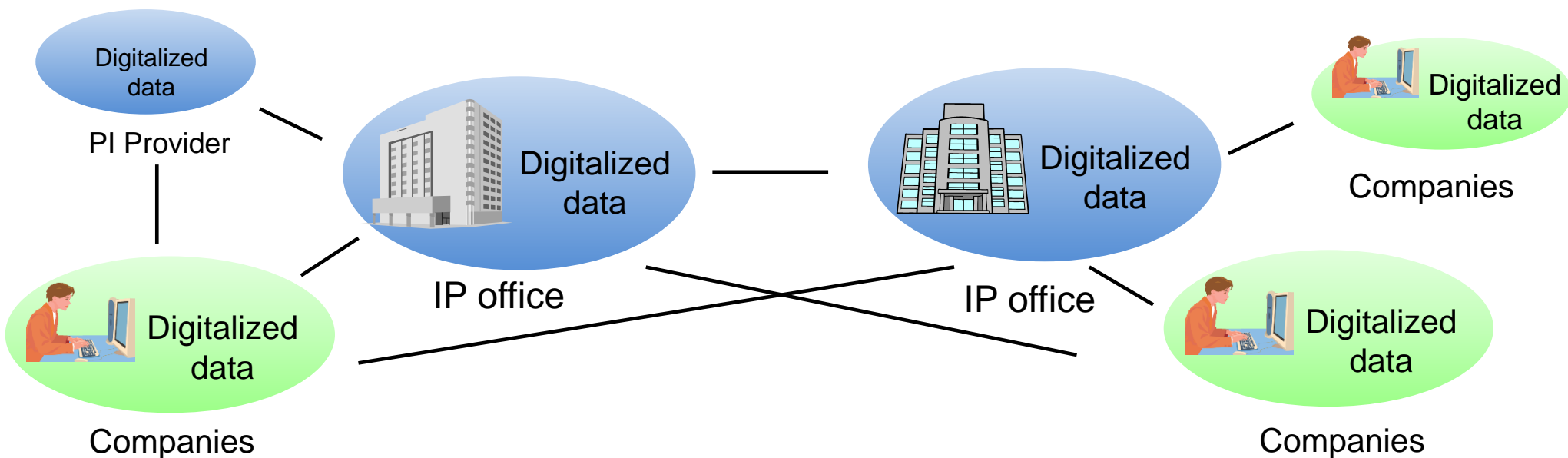
➢ **Exchange and Distribution of Digitized PI Data**

・PI data as big data can provide new values for services.

・Such data can be collected through data exchanges with IP Offices.

・Distribution of PI data to public will encourage private sector to develop services.

➢ **Extraction of Value from "BIG" PI Data**

・Public and private sector can extract value from PI as big data for furthermore development.

Ecosystem of Digitized Data

> IP offices play a main role in an acceleration of digitalized data.

Ecosystem driven by digitalized data

Digitalized data
PI Provider

Digitalized data
IP office

Digitalized data
IP office

Digitalized data
Companies

Digitalized data
Companies

Digitalized data
Companies

IP Intelligence Generated from Big Data with AI

➢Applying AI technology to expanding IP information, big data, will create new added values, e.g. IP intelligence.

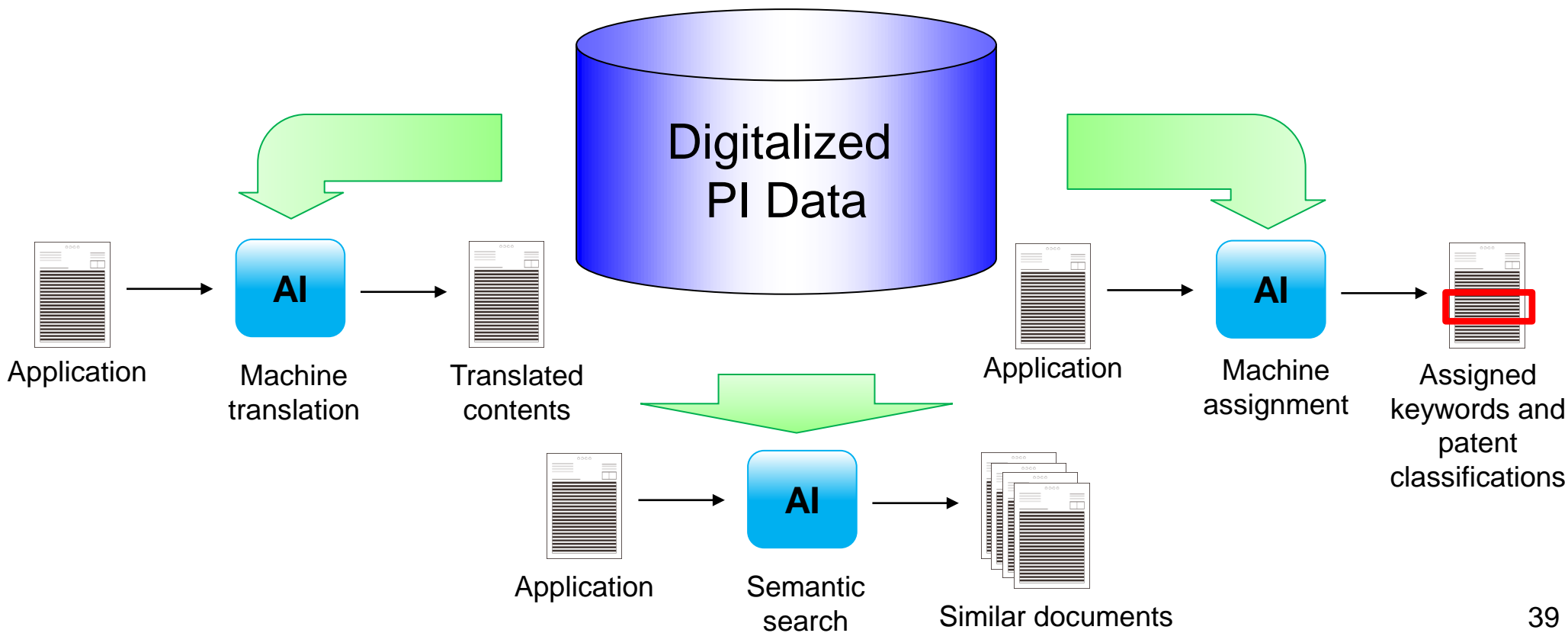**Big Data**
（PI Data）

Advanced operation

Highly upgraded Search・Analysis・Machine Translation

AI Technology

Operation

Utilizing AI Technology at the JPO

> JPO is trying to utilize AI technologies, such as machine translation, assignment of classifications and keywords, and semantic search.
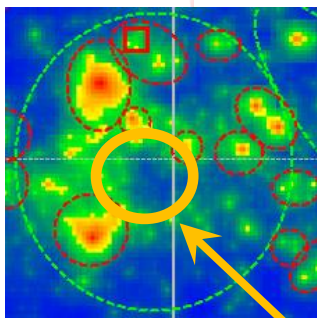
> Digitalized PI data is used for machine learning.

Digitalized PI Data

Application → **AI** Machine translation → Translated contents

Application → **AI** Machine assignment → Assigned keywords and patent classifications

Application → **AI** Semantic search → Similar documents

Efficient Analysis of Patent Documents

➢ Introducing AI technologies can be a new technique for analyzing enormous patent documents.
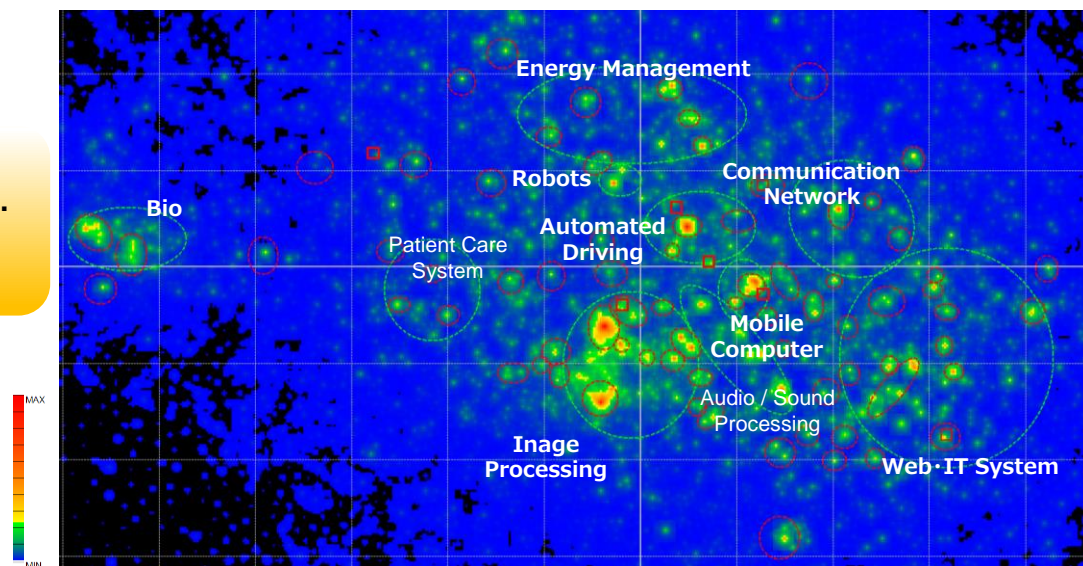
Efficient analysis of enormous patent documents

Patent Documents, etc.

Analysis of the direction of R&D etc. from the result of analysis

New frontier for R&D

Energy Management

Robots

Bio

Communication Network

Patient Care System

Automated Driving

Mobile Computer

Audio / Sound Processing

Inage Processing

Web·IT System

MAX

MIN

The result of the analysis on the technology trends using text mining etc.

ขอขอบคุณ   **Cảm ơn bạn**   **Terima kasih**

धन्यवाद

Obrigado   **Salamat sa iyo**

Gracias

Thank you for your attention

ありがとうございました