

16.00 – 17.00

Panel 2: Technology Transfer and IP:
Challenges & Opportunities

Jun SUGIURA
OIT OSAKA
JAPAN

From Industrial Society to Super-smart Society



First Industrial Revolution
Acquire power
(Steam engine)

Second Industrial Revolution
Power Innovation
(Electric power & motor)

Third Industrial Revolution
Automation
(Computer)

Fourth Industrial Revolution
Autonomous optimization
(AI thinks on its own, based on a large amount of information and takes the best action)

“Mass things” are the source of competitiveness



IoT · Big-Data · AI · Robot
Combination of “human resources” and “data” is the source of value
<Data driven society>

Connection among “wisdom”, “information”, “technology”, and “human resources” is expected “to create innovation” and “to solve social issues.”
<Connected Industries>

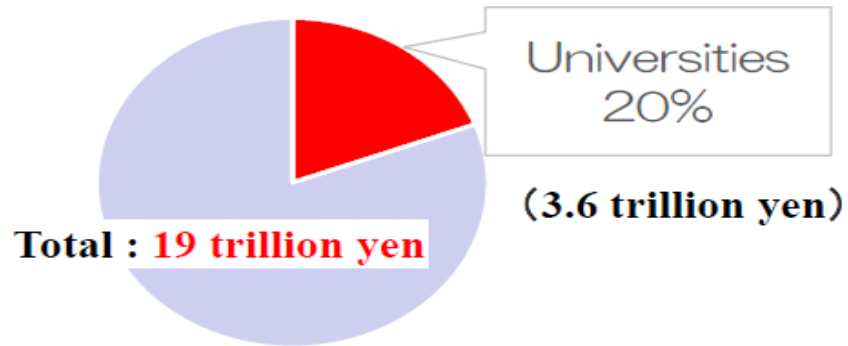
Towards the Super-smart Society

(Role of university)

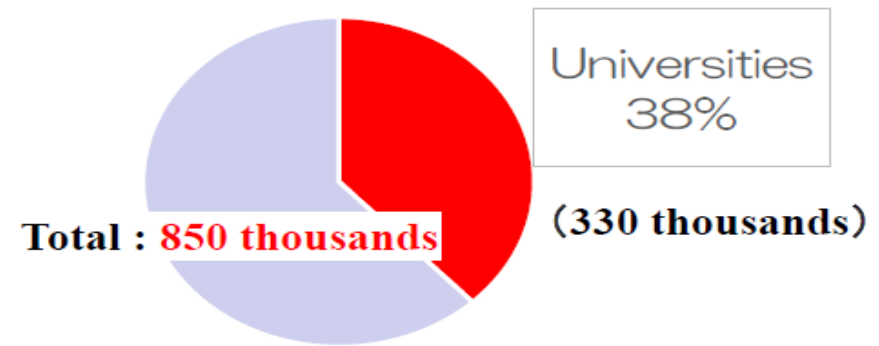
- Human resource development, capable of responding to the 4th industrial revolution: (EDUCATION)
 - **Practical education through industry-university-government collaboration based on the needs of industry**
 - **Strengthening mathematical and data science education**
 - **Compulsory education of "programming" in elementary school Recurrent education**
- Construction of ecosystem of innovation: (R&D)
 - **A university that is the base of knowledge and human resources, as a core, involves industry, so that research and development and venture are created spontaneously and continuously, so that the fruits of innovation can be invested in the next kind of innovation**

- Universities have 20% of total research funding.
- 38% of researchers work for universities.
- The level of academic research is among the best in the world.

Research Funding



Number of Researchers



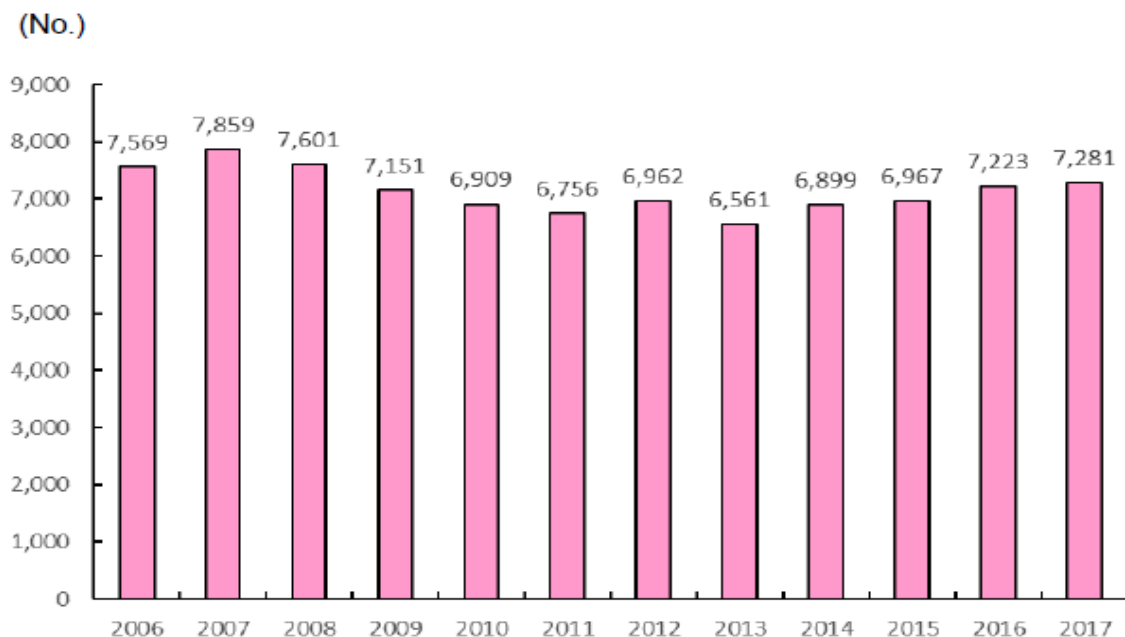
Source : Ministry of Internal Affairs and Communications, 'Research survey report on science and technology' (2017)



People expect universities to exploit their research outcome for the society.
Contribution to the Society became the 3rd mission of Universities.

➤ In 2017, the number of patent applications filed by universities in Japan was 7,281, marking a 0.8% increase from the previous year.

Number of Patent Applications
Filed by Universities



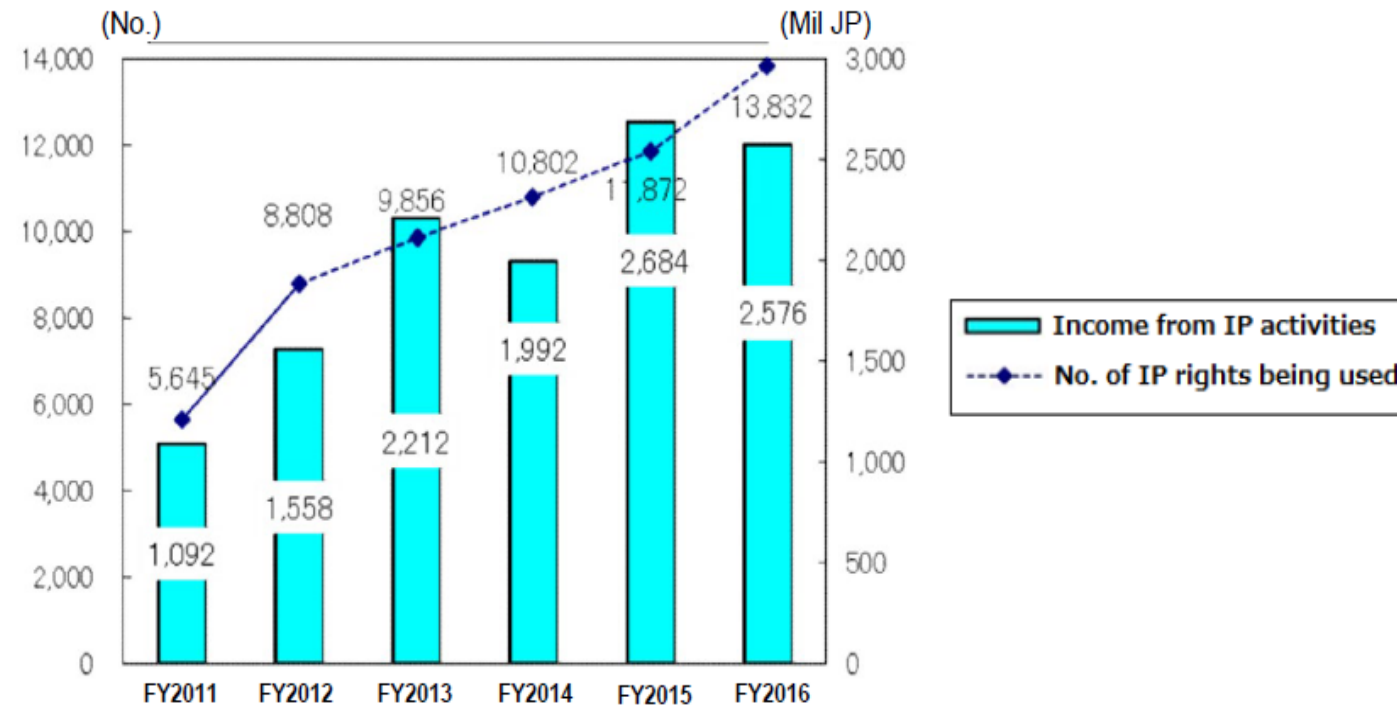
Top 10 Filers
(Universities 2017)

Rank	Name of University	Number of Applications
1	University of Tokyo	310
2	Tohoku University	276
3	Kyoto University	229
4	Osaka University	210
5	Tokyo Institute of Technology	194
6	Nagoya University	164
7	Kyushu University	158
8	Hokkaido University	116
9	Keio University	113
10	Shinshu University	103

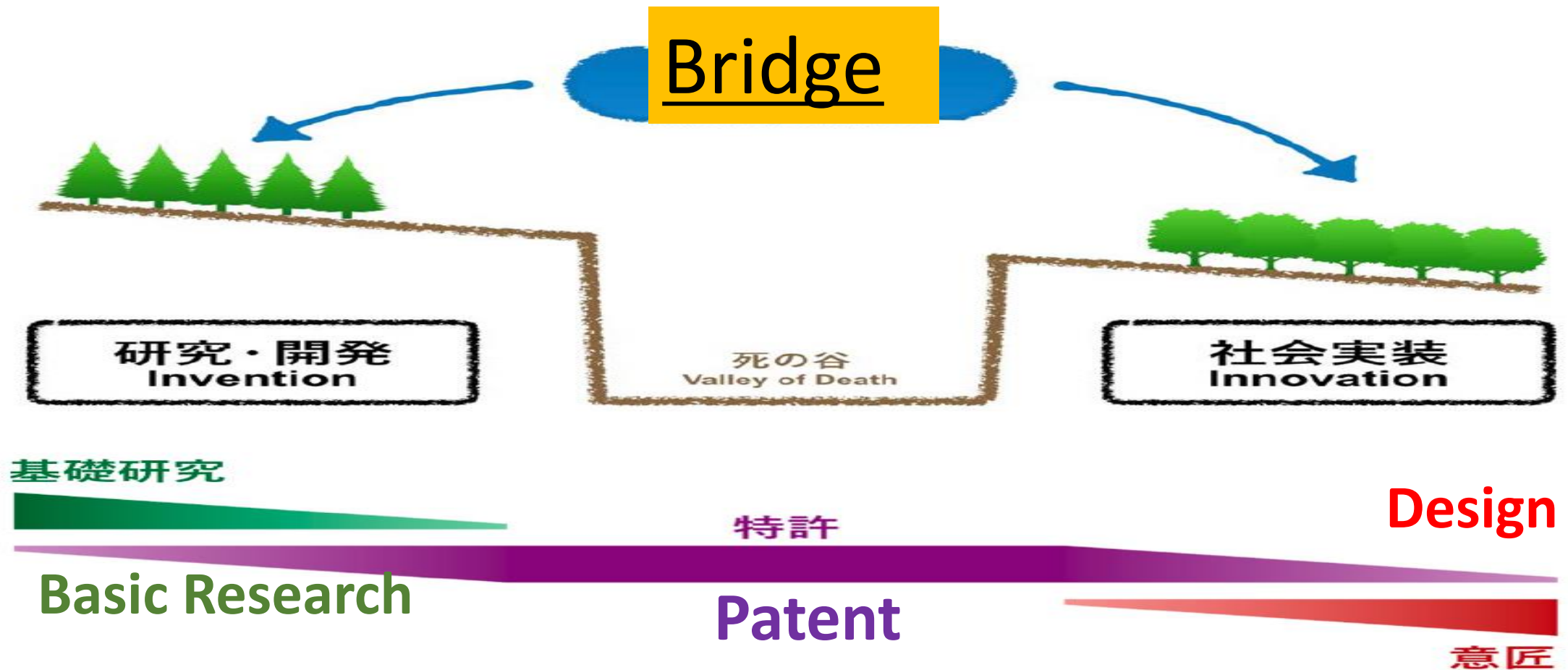
Source: JPO Annual Report 2017

- The number of IP rights and income from IP activities by universities have been on the rise.
- In fiscal year 2016, which ended in March 2017, income from IP activities by universities reached 2.576 billion yen, marking a 4.0% decrease from the previous fiscal year.
- Also, the number of IP rights being actually used by universities reached a record high of 13,832 increasing 16.5% year-over-year.

Changes in the Number of Patent Rights and Income from IP Activities by Universities

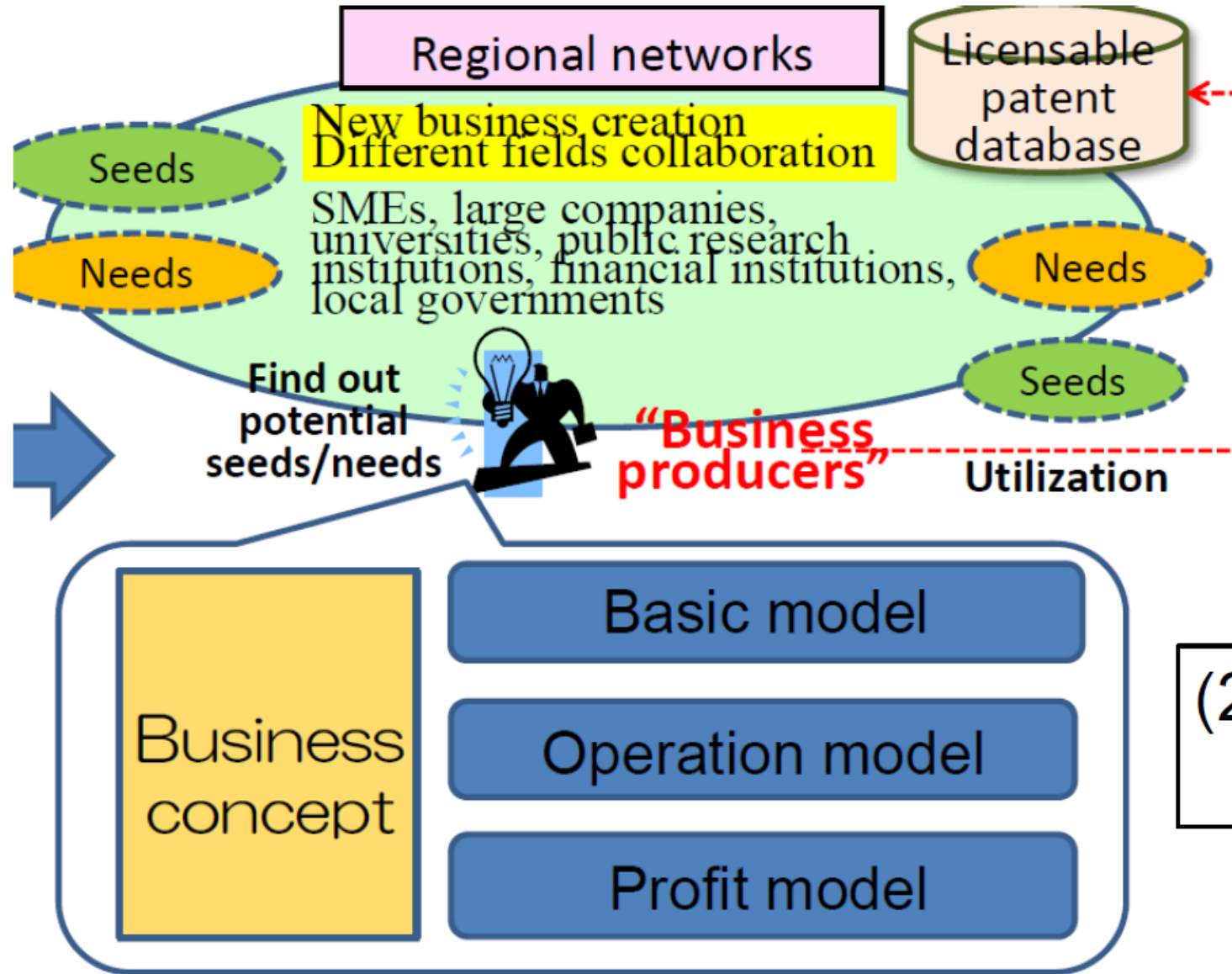


Invention (idea) , Inovation(products) and IP



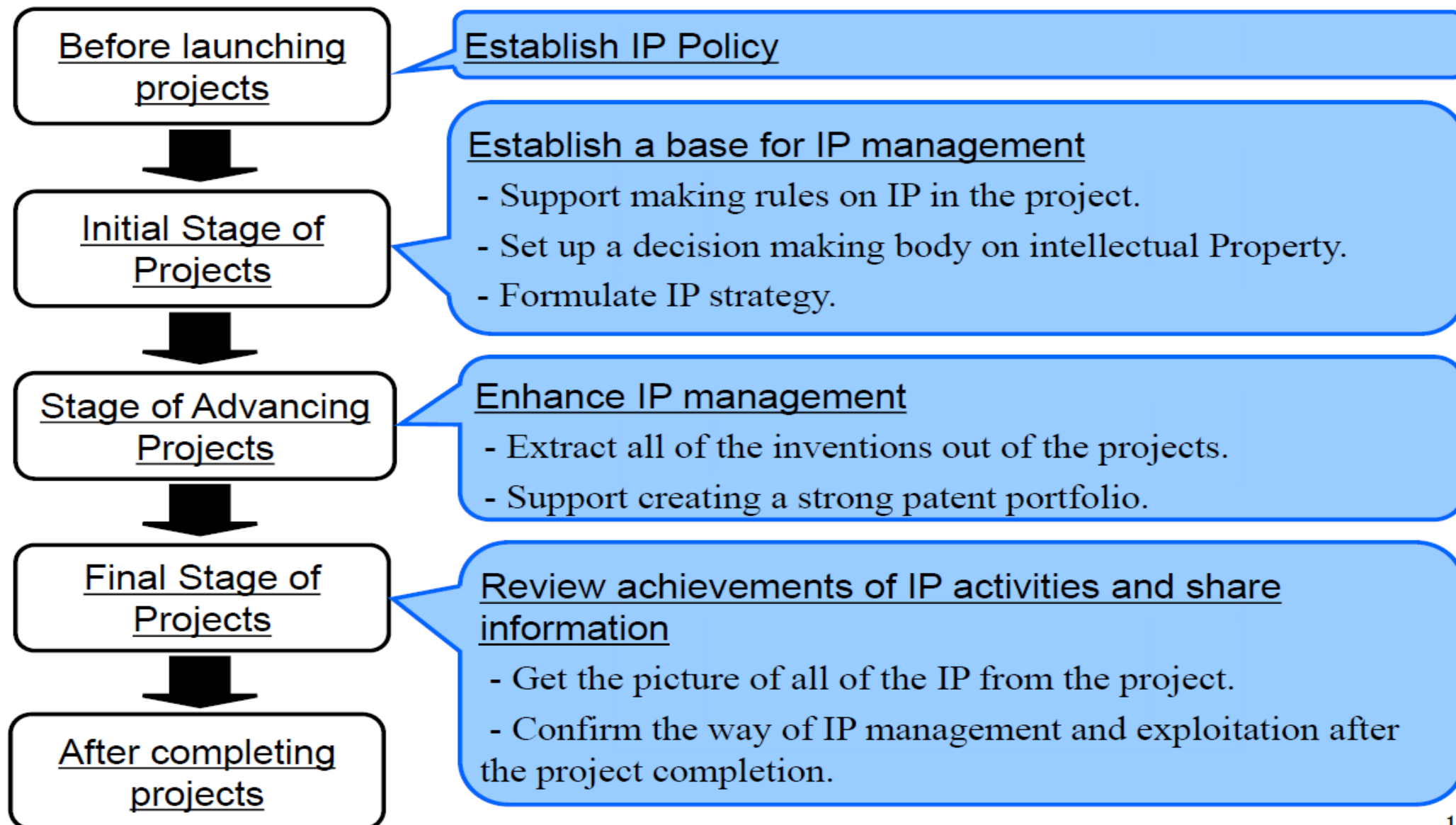
The roll of **IP** is to bridge **Invention** to **Inovation**

Basic Business aspect for Tech. transfer



(1) Matching
Seeds to Needs

(2) Design & Managing
Business Procedure



The basic function of IP right (1)

知的財産と知的財産権



第三者が参入不可
(競合企業との価格
競争が起こらない)

バリア・参入障壁
(知的財産権)

知的財産

研究成果、技術、ノウハウ、ア
イデア、デザイン、ブランド、
植物の新品種、文芸・学術・美
術・音楽・プログラムなどの精
神的作品等の知的創作物

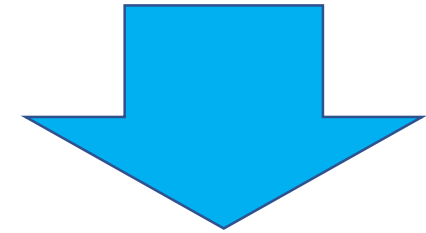
これからの知財入
門～変革の時代
の普遍的知識～
山口大学
知的財産センター

自分だけが使える状態 (模倣を許さない)

価格
価格決定力による
価格の維持

知的財産権の防備有り
(「まね」を許さない)

The principle roll of IP is
Exclusive right for Idea
(IP itself does not make Profit)

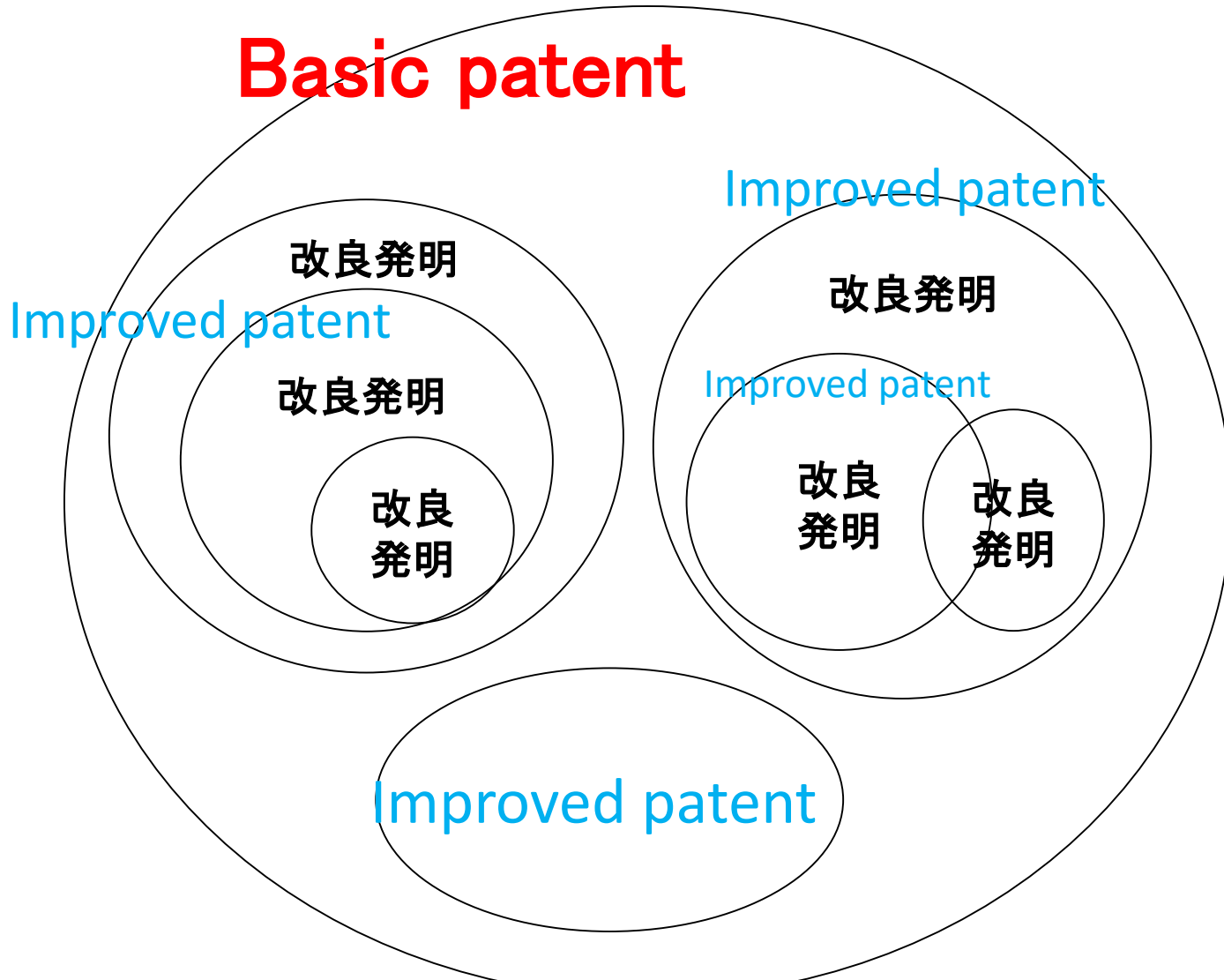


It is
The business
which make the profit

The basic function of IP right (2)

Basic patent vs. Improved patent

Basic patent

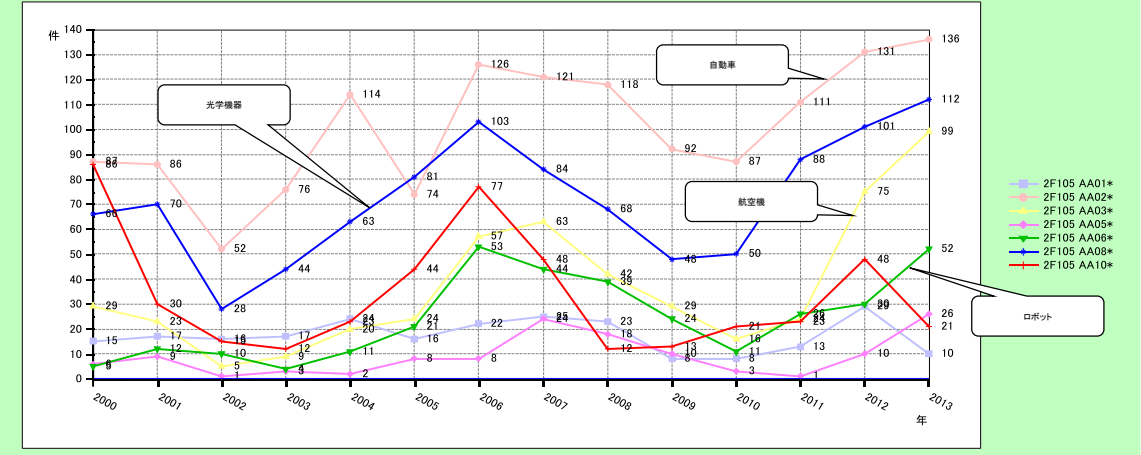
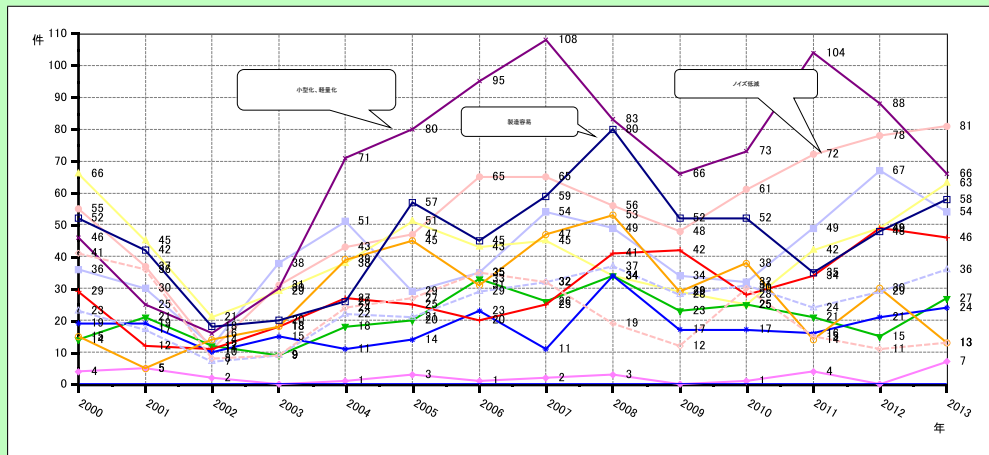


Not only
Basic patent
But,
Improved patent has
also
Exclusive right

The basic function of IP right (3)

Utilization of patent information

Capture development trends in specific technical fields

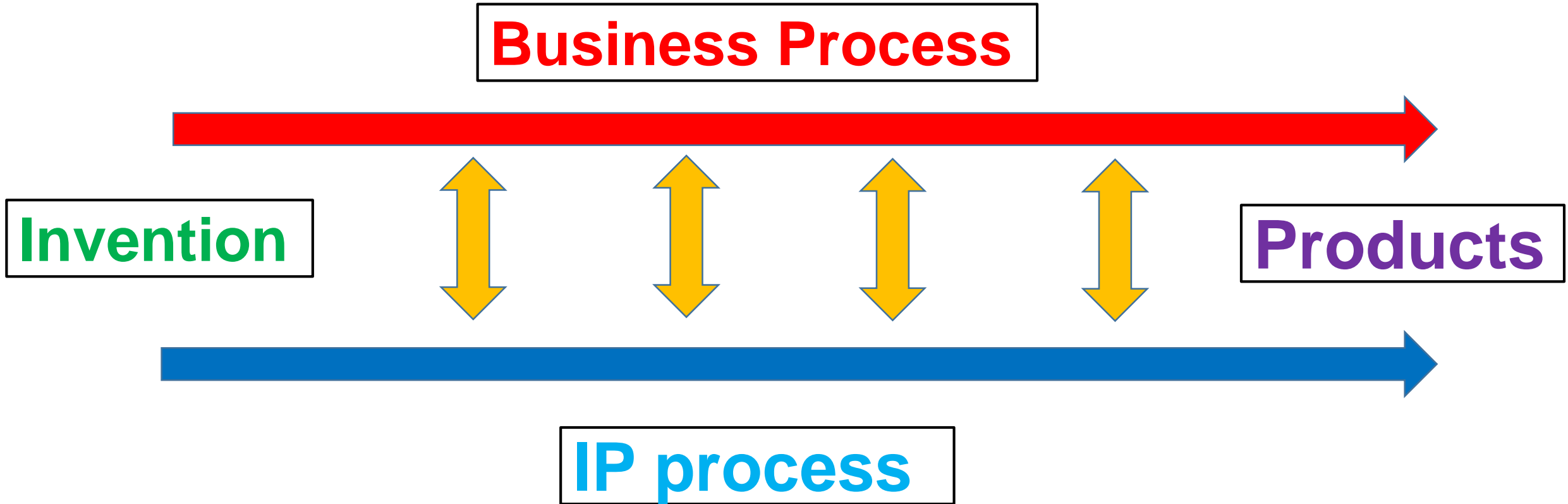


Trends by number of applications on purpose

Trends by number of applications on usage

→ Develop development indicators of universities and companies.

Collaboration **Business expert** with **IP expert**



ご清聴ありがとうございました。
Thank you very much for your attention

Jun.sugiura@oit.ac.jp

杉浦 淳