



БОЛОВСРОЛ,  
СОЁЛ, ШИНЖЛЭХ УХААН,  
СПОРТЫН ЯАМ

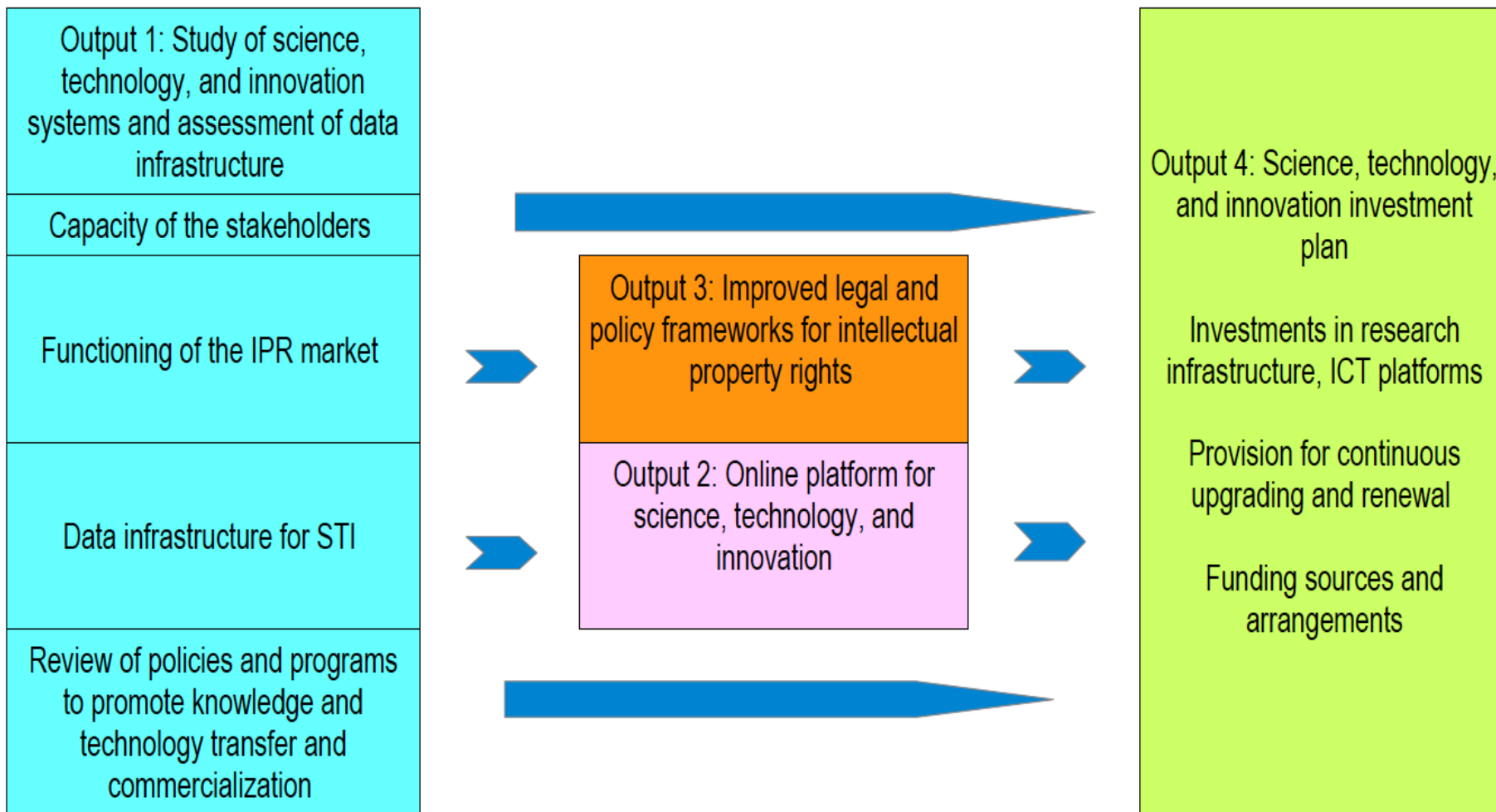


# PROMOTING CAPACITY BUILDING of SCIENCE, TECHNOLOGY and INNOVATION in MONGOLIA

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# Four Main Outputs



# Purposes of STI Policies

- Science – developing human knowledge
  - Providing the essential basis for human and social development
- Technology – the application of knowledge to make life better
  - Sometimes driving science, sometimes derived from it.
- Innovation – the application of novelty
  - Application of creativity for development

# The Importance of STI

- STI can be a major driver of economic growth and social well being.

Table 1. R&D expenditure and economic growth 1996-2016 at 2010 constant prices

## Correlation R&D expenditure and GDP growth

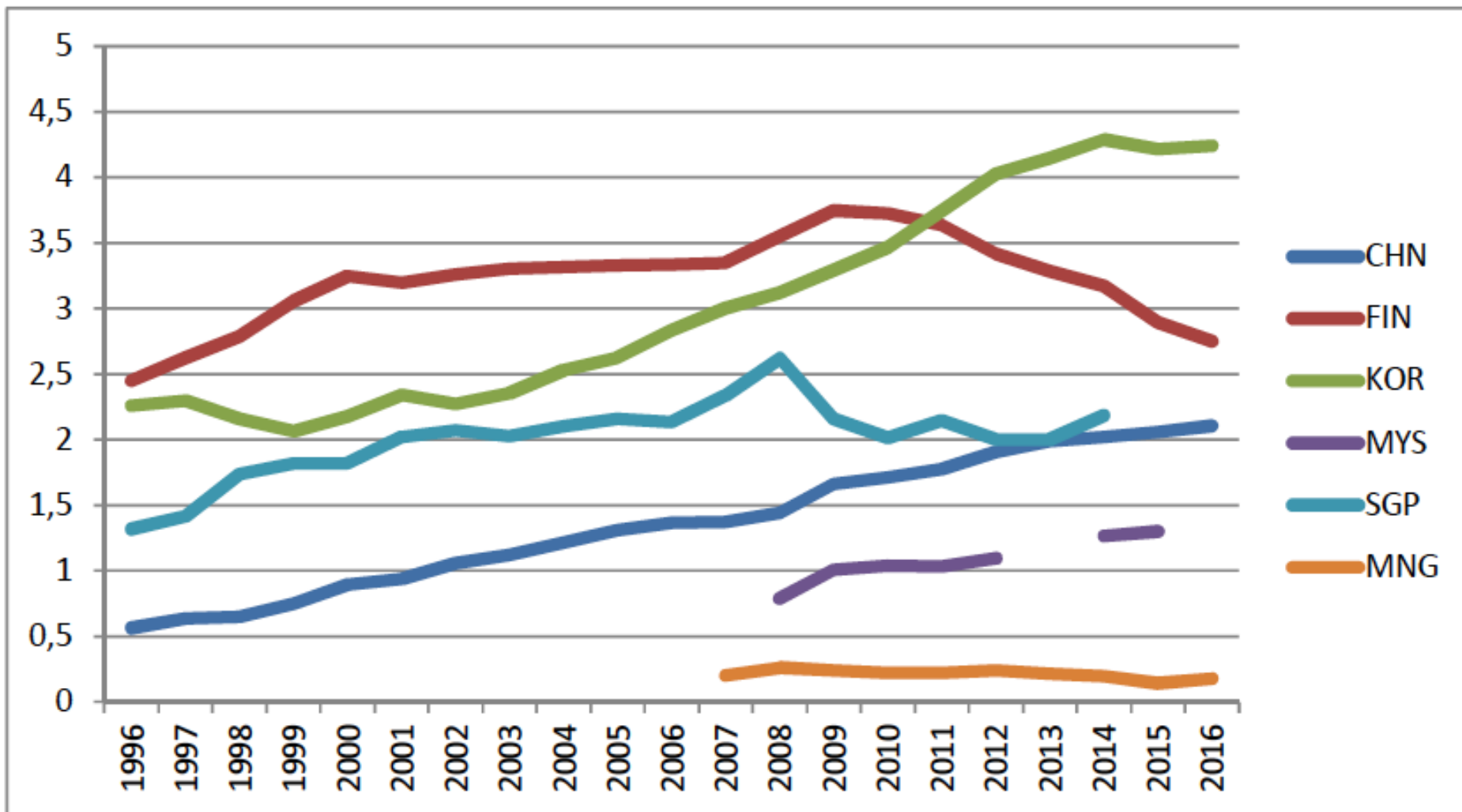
China	0.99
Korea	0.92
Malaysia	0.95
Singapore	0.78
Finland	0.67
Mongolia	-0.48

Source of data: World Bank (Annex 9 for source data and calculation)

- Mongolian STI investment is not linked to growth.
- Its statistical basis is uncertain.

# Mongolia's reported expenditure on R&D is stagnant

Figure 3) R&D expenditure as a percentage of GDP for selected countries



Source of data: World Bank (Annex 8 for source data)

# Main tasks of our study

- To increase STI investment and its efficient
- To involve stakeholders in investment on the basis of self interest
- To collect and use reliable data to inform decision making

# STI relevance to social and economic priorities

## Recognised in Government initiatives:

- The Action Program of the Government of Mongolia for 2016-2020
- The Three Pillar Development Policy (2018)
- Mongolia Sustainable Development Vision 2030
- Priority areas for Science and Technology Development (2015 – 2021)
  - Human development and environment
  - Intensive agriculture
  - Advanced industrial technology
  - High technology

# Non Sector Priorities

- Innovation, incubation and technology transfer
  - Incubation and technology transfer facilities are required using the quadruple helix approach.
- Developing open labs and platforms
- Training and education facilities
  - The greatest driver for progress is a highly skilled population, especially in technical and scientific matters.
- Management
  - Management facilities and systems need to be accounted for in the development of the STI Plan.



# A National Technology Transfer Center

Mongolian Universities and R&D institutes are in very early phase of development and there is very little experience on the functioning of Technology Transfer Offices (TTO).

## Main functions:

- Management and evaluation of invention disclosures
- Freedom-to-Operate analysis
- Supervising and coaching Universities and R&D institutes in the development of research results towards commercialization
- Advising teams/research units in funding options
- Managing technology transfer of intellectual property and knowledge via licensing and assignments



МОНГОЛ УЛСЫН  
ЗАСГИЙН ГАЗАР

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# THE SITUATION OF INTELLECTUAL PROPERTY RIGHTS IN MONGOLIA, BY GLOBAL COMPARISONS



# IPR CREATES VALUE

Numerous studies throughout the world confirm that countries with the strongest IP protections:

- have more full-time researchers;
- attract greater investments in R&D;
- and employ large portions of their workforce in higher paying IP-intensive industries.

**In fact, income per capita is thirteen times greater in countries with strong IP protections than the those with weak protections.**

(Source: Forbes, Sep 19, 2017, Will Singapore be the next Intellectual Property Hub?)

# IPR CREATES VALUE

Innovative companies are increasingly IP-rich and physical asset light. Their ability to protect, manage and maximize value from their IP is the key determinant of success.

For example, Singapore IP-office study on manufacturing industries in Singapore found that **industries which generated a higher share of R&D-related revenue were the ones which had utilized the patent system more.**

# IPR RIGHTS ARE ALSO EXPENSIVE

## COSTS FOR ACQUIRING SOLID PATENTS

### **Patent Drafting (EP and US – patent agents)**

1500 - 7000 € (Depends mainly on the complexity of the technology)

### **US patent application (US)**

The application and the research study fees roughly 1000€

### **EP patent application**

The application and the research study fees roughly 1000€

### **International Application (PCT)**

The application and the research study fees 2700 - 3200 €

### **Replies for the examination reports**

1000 - 2500€

# IT'S ALL ABOUT BUSINESS

IP is not about law, but business. Think IPR as a tool for business so the costs CAN be justified

**In order to generate value, IPR can be:**

- \* Utilized to secure funding
- \* Used in branding and product marketing
- \* Used to prevent competitors from using protected technology/method/use
- \* Selling IPR or licenses of IPR independently or in connection with company sale or divestiture
- \* Utilized in contract negotiations
- \* Used to avoid court cases (cross licensing)

# VALUE CREATION IS EXPENSIVE

It has been evaluated that in Singapore it costs approximately 740 000€ to produce one global patent, 370 000€ in Japan and 270 000€ in South Korea.

# FOCUS ON

**High quality IPRs that are valuable in Mongolia and can be used to grow export in international market and can be enforced.**



# IP CREATION

## IPR could be integrated in all University and RIs training

- Mongolians do not register IPR rights outside of the Mongolia. The general thinking is that once you register your invention with patent or utility model application through IPOM the rights are acknowledged globally.
- ⇒ There is not sufficient knowledge of foreign IP regimes. There is a need to build expertise that will raise the level of legal and business awareness on IP protection especially in foreign jurisdictions.
- ⇒ Training of patent issues should be given for science students.
- ⇒ IPR Professionals and IPOM officers have best skills for providing such training, would this be possible?

IPOM	PRH	SUGGESTION	RESULT
Fees are low (e.g. patent 10€):	Prices much higher (e.g. patent 500€)	Fees could be raised based on average salaries in countries (e.g. 50 – 100€/application)	<b>Less applications</b> => Quality increases
Very less fee employees 3-4 for 400 patent/utility model application	Much more employees (15 - 20 for 400 patent/utility model application)	Need for more employees	<b>Less applications, faster process</b> => Quality increases ( <i>approx 50% of applications should be granted, now over 90%</i> )
No technology specific education	Education level high (Msc/Phd of Science or Law degrees in each specific technology sectors)	Hire and educate IPR engineers for specific sectors	Inventor value technology specific knowledge and it would increase quality of search reports
Lack of assisting staff (examiners need to educate independent investors on formalities)	A number of assisting staff that will handle non-technical matters (such as formalities inspection)	Need for more employees	Assistants do not need very high education
Electronic filings launched recently	Most of the filings come for e-filings, decreased price for e-filing	Electronic filings could be cheaper than paper filings. E-payment system needs further development	E-Filing releases resources for other duties
Lack of instructions on IPOM website	A lot of information on website and online help desk	More information for inventors about application process and IPR commercialization. Maybe "IP Healthcheck" as in UK	IPOM receives better quality applications and can release resources for other duties

Mongolia	Finland	Suggestion	RESULT
49 patent agents	Approx. 1000 persons act as IPR agents, IPR engineers, managers and strategists	Develop patent analyses skills and offer knowledge process outsourcing (novelty, infringement, patentability, FTO, IPR drafting) in Mongolia and other countries (KPO Business worth of \$10 to \$15 billion in India)	Patent analytics will eventually increase patent filings and market growth. In a result the need for IPR professionals increases.
Single IPR qualification exam, that is easy to pass	4 exams (one common for everyone, separate exams for trademarks, design rights and patent/utility models). Very difficult to pass (only 15% pass)	Separate exams might be necessary for various IPR domains? Training from WIPO; EPO, JPO and USPTO	Skill level increases
IPR agents “generally” offer all IPR legal services (trademark, patent, design right and copyright services)	Specified industry. Experts for each category of IPR legal services. Still lack of business consultancy, but need for IPR management/strategy consulting	In a long run, option for more specified offerings	Quality of IPR will increase
<ul style="list-style-type: none"> <li>• Lack of education for IPR matters,</li> <li>• Patent agents educate new IPR agents</li> </ul>	<ul style="list-style-type: none"> <li>▪ Science schools are incorporation IPR education for curriculum.</li> <li>▪ Patent agents educate new IPR agents</li> </ul>	More education should be offered in Science, Art, Law and Business schools	Quality of IPR will increase

# IP COMMERCIALISATION

## Need for monitoring of publicly-funded R&D

There is a need to develop a platform for monitoring indicators pertaining to the commercialization of publicly-funded R&D.

Data should include commercially relevant information (not just IPR registrations) such as number of spin-off companies created, new products launched and revenue from licensed products and spin-off companies.

There are some monitoring systems already in Mongolia, but need to improve.

# IP COMMERCIALISATION

## Inspect the commercial potential of dormant patents

Various indicators suggest that the concentration of dormant patents worldwide is relatively higher in research organizations and universities at 35-70% as compared to commercial entities at 20-50%.

As an example, The Korean Intellectual Property Office (KIPO) had worked directly with 30 universities and public research institutes to assess commercial applications of more than 3,000 dormant patents since 2010. The results have been promising with 50 inventions being transferred to industries which generated a total of US\$3.8 million in royalties. Further, another 21 inventions were found useful for supporting patent acquisition overseas

There are many dormant national patent and utility models in Mongolia.  
How the commercial application of these rights should be inspected?

# IP COMMERCIALISATION

## Obtain bank loans using patents, trade marks and copyright as collaterals

Singapore is amongst the first in the world that offer the option of using the IP Financing Scheme

(IPFS) to obtain bank loans using patents, trade marks and copyright as collaterals.

However, they have realized that traditional banking model may not be entirely suited to IP-based lending. The progress in this area should be followed as it offers one path of getting income to the start-up companies.

=> Once global IPR right are created, Mongolia could consider of establishing greater connectivity with brokerage and disposal services in countries such as the US, China and Europe? There are many companies in especially in USA that purchase/sell/auction patent asset for other companies.

# IPR: Urgent actions

Amendment of the three main laws on IPR (patent, copyright and trademark) discussed in the parliament spring/autumn session of 2019.

- With the approval of three laws the structure of IPOM can be changed.

An urgent need to improve expertise

- Study detailed legislation from comparison countries (especially Finland)

Final revisions of Trademark Law and Patent Laws

- Series of detailed improvements

# IPR: Functions developed at the beginning of implementation

- *Reforming IPOM*
- *Training of IPR professionals*
- *Creating Technology and Innovation Support Centers*
- *Re-establishing the Dispute Resolution Board*
- *Improving the court system*



# IPR: Longer term actions

- *Targeted actions for world class inventions commercialized internationally*
- *Motivating and encouraging Mongolians for IPR utilization*
- *Establish and improve the functions of technology transfer offices*
- *IPR valuation and services related to commercialization*



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**Thank you!**

