

"Kazakhstani experience of technology commercialisation: history and challenges"



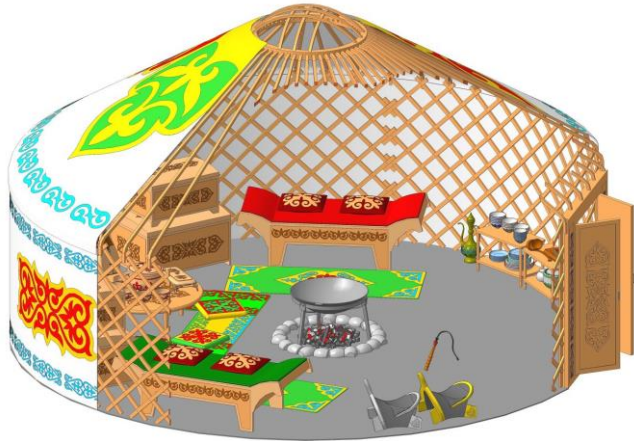
22 June 2017
Astana

Kazakhstan-British
Commercialisation Forum

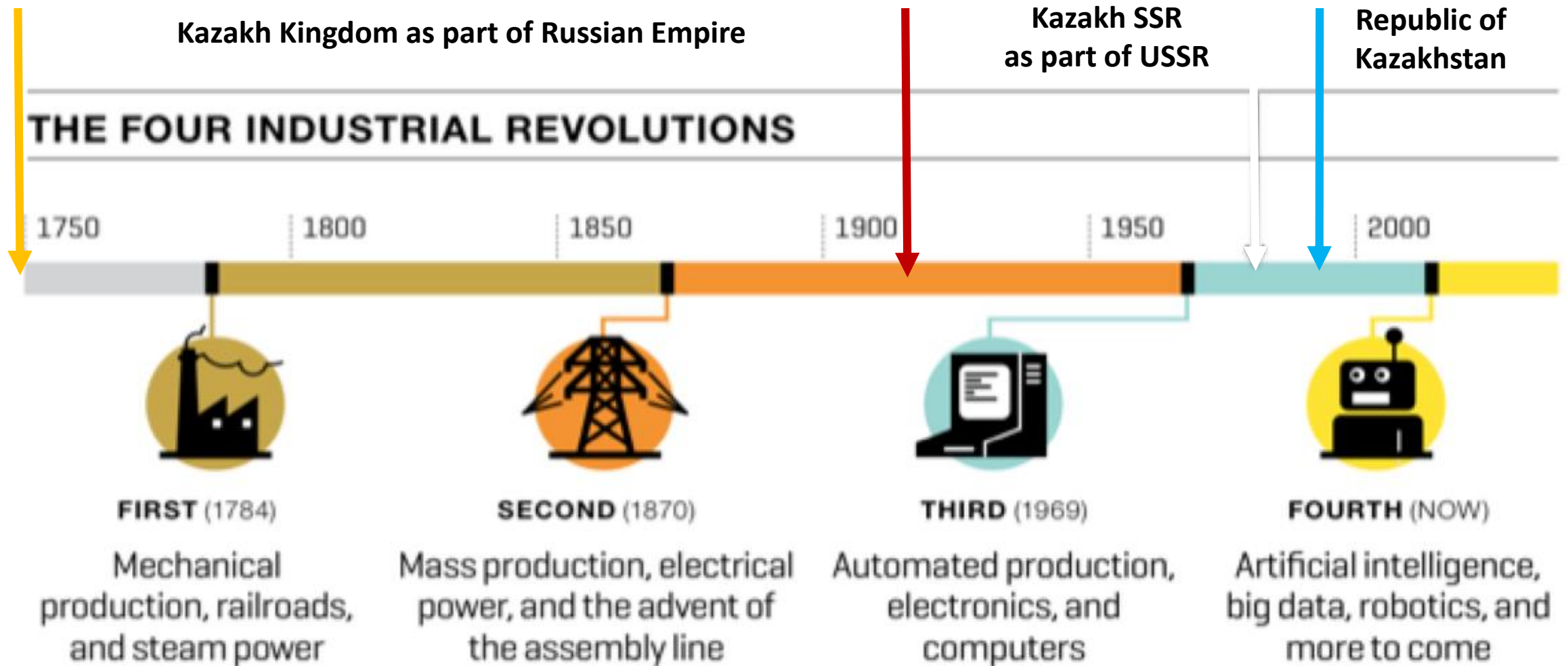
Abdilda Shamenov,
ATCP President



What was invented by nomads?



KAZAKHSTAN AND FOUR INDUSTRIAL REVOLUTIONS



Foundation for Science and Technology in KZ during the Soviet era



- Industrialization, railroads, electrification and enhancing literacy
- More than 30 universities established
- Well-known scientists moved to KZ during World War II
- Establishment of the Kazakh SSR Academy of Sciences in 1946
- Established research institutes worked closely with industrial ministries

We can invent but can we commercialise?



Flemming's invention of penicillin from the lab of St. Mary's hospital in London and U.S. mass production



Aryngazin's research for inventing MagneGas. The company was launched by U.S. partners and now is listed on NASDAQ (MNGA).

State policy for innovations

Kazakhstan 2030 programme

State program for industrial and innovation development 2003-2015

State programs for accelerated industrial innovation development (2010-2014, 2015-2019)

Concept for Innovation Development till the year 2020

- The need for industrial technology policy announced in 1997
- Establishment of National Innovation Fund (currently NATD) in 2003
- Establishment of commercialisation offices in universities, innovation grants for commercialisation in 2011
- Plan to reach 25% of commercialised projects out of all technology projects

Legislation

The Law on Science (2011)

The Law on Industrial and Innovative development (2012, now part of Entr. code)

The Law on Commercialising research results (2015)

- Chapter on commercialisation, new opportunities for universities
- First definition of the term “technology commercialisation”, first innovation grants – proof of concept and prototype development
- Motivation for authors of the invention, for technology commercialisation offices, for universities and for business

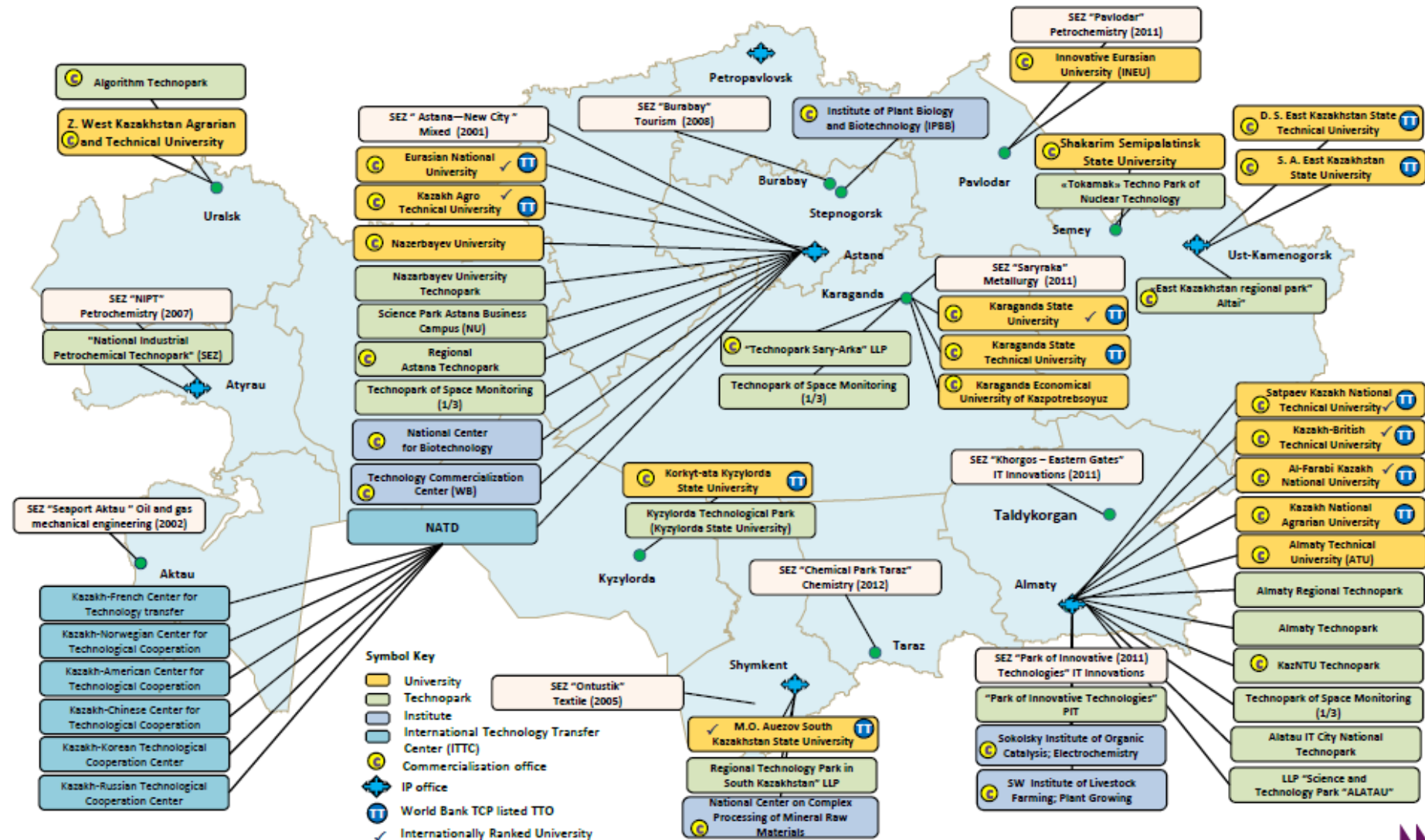
Two innovation clusters in Kazakhstan

In order to build the knowledge based economy within Step 63 of Nation's Plan of reforms 2 clusters were selected to attract R&D projects and high-tech companies:

- Astana Business Campus of Nazarbayev University
- Alatau Park of Innovative Technologies

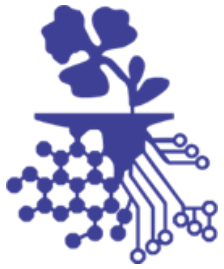


There is whole network of TCOs, technoparks, free economic zones, international tech transfer offices in KZ



Source: OECD
commercialisation
compass 2016

Results of WB & MOES Technology Commercialisation Project (2015)



- **Methodological support** received from **CRDF Global** and **IC² Institute**
- **40 out of 65** projects reached **1 billion KZT sales**
- **10 deals** were signed for licensing technologies
- **Legislation** was reviewed by leading international experts



...energy projects like coal gasification.



...chemistry projects like production of plasticizers.

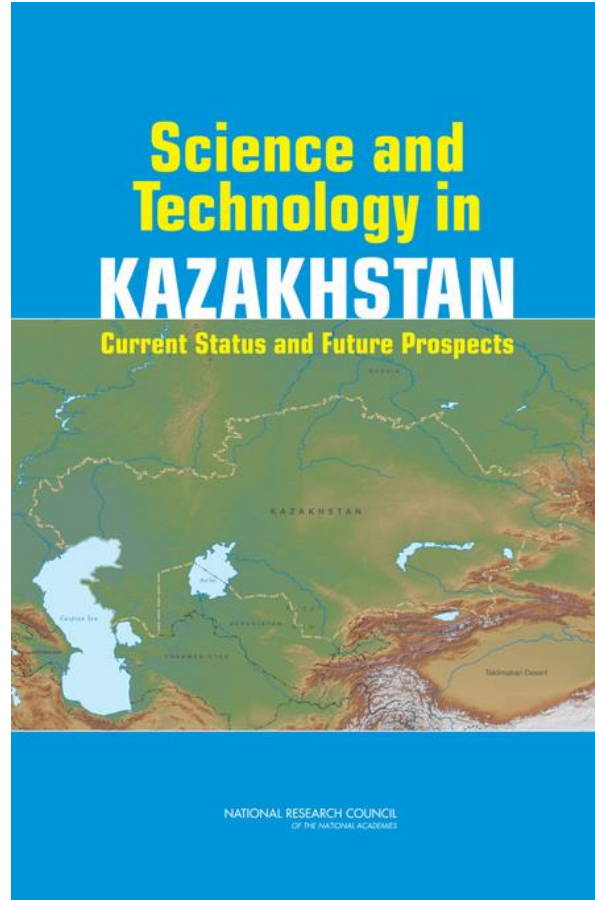


...biotechnology projects like starters for horse milk.



...deep processing projects like production of gauze from waste.

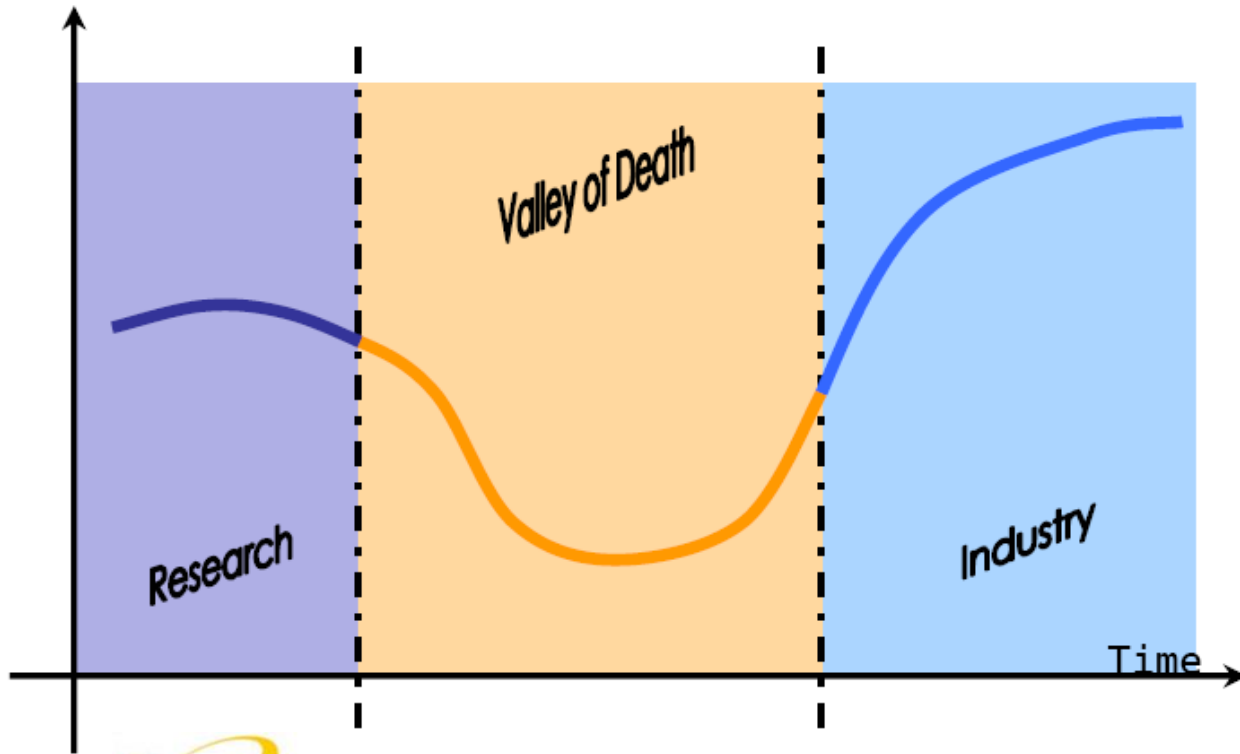
What did change from the S&T review by NAS in 2006?



Main barriers in tech commercialisation:

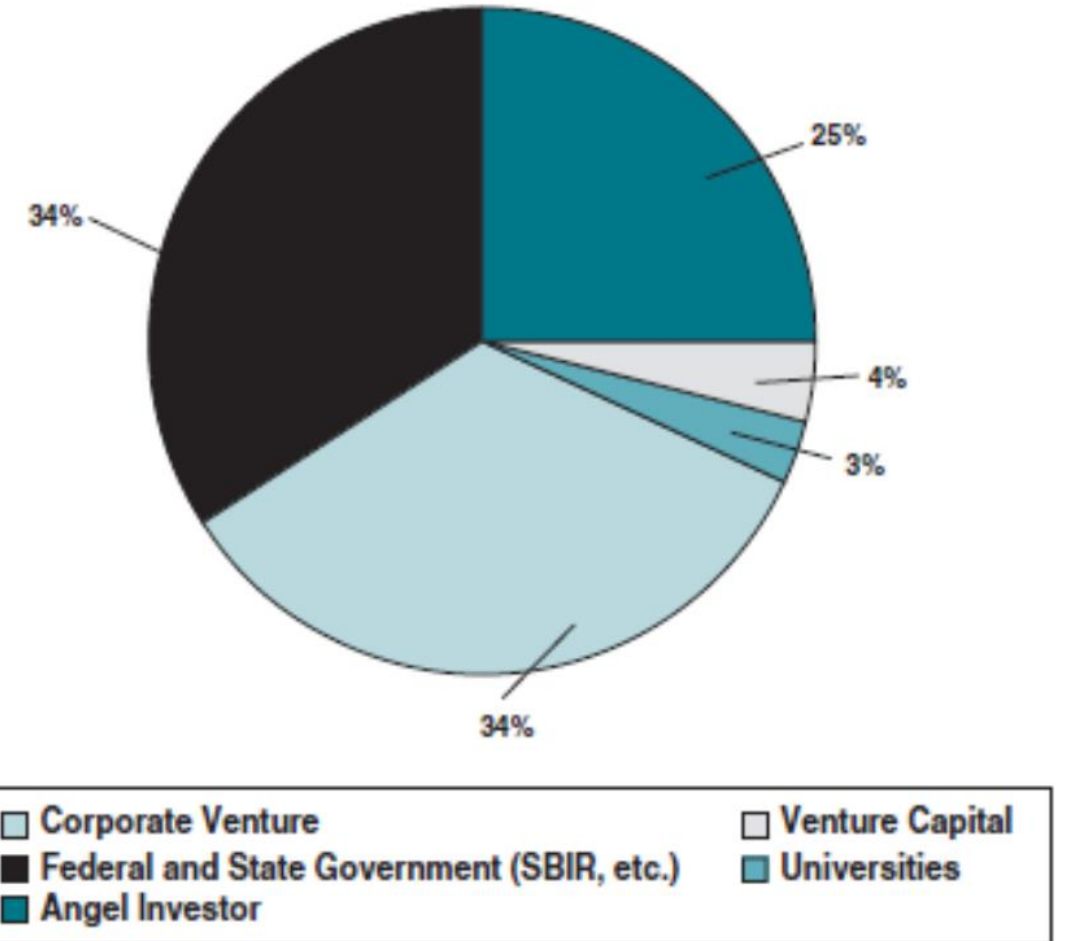
- ❖ Limited amount of technologies with commercial potential
- ❖ Limited number of entrepreneurs
- ❖ No methodologies for taking technologies to market
- ❖ No interest in local technologies from local companies

Do we have enough sources of funding?



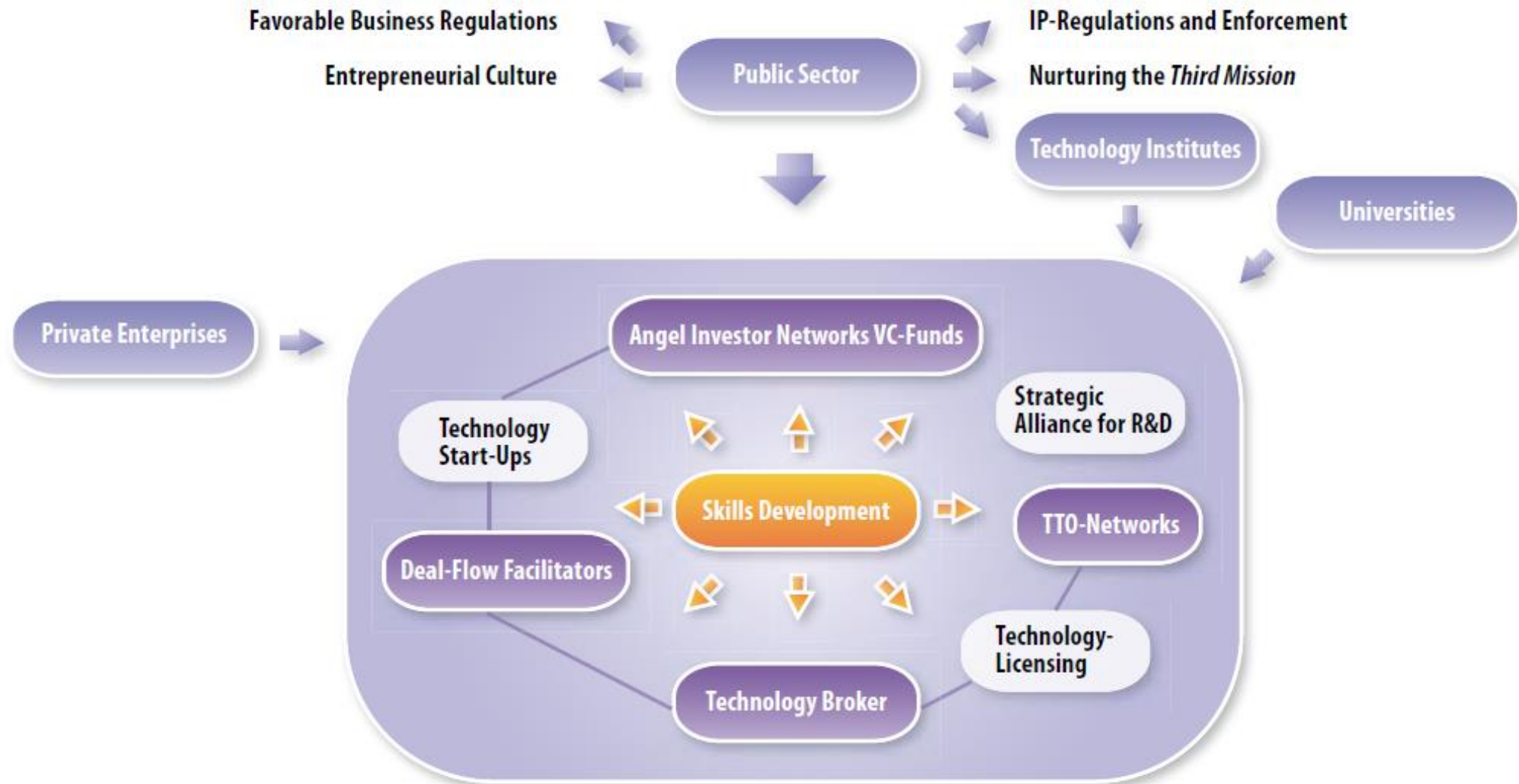
FOSTERING
PRODUCTIVE
INNOVATION

NATD
national agency for technological development
технологиялық даму жөніндегі ұлттық агенттік



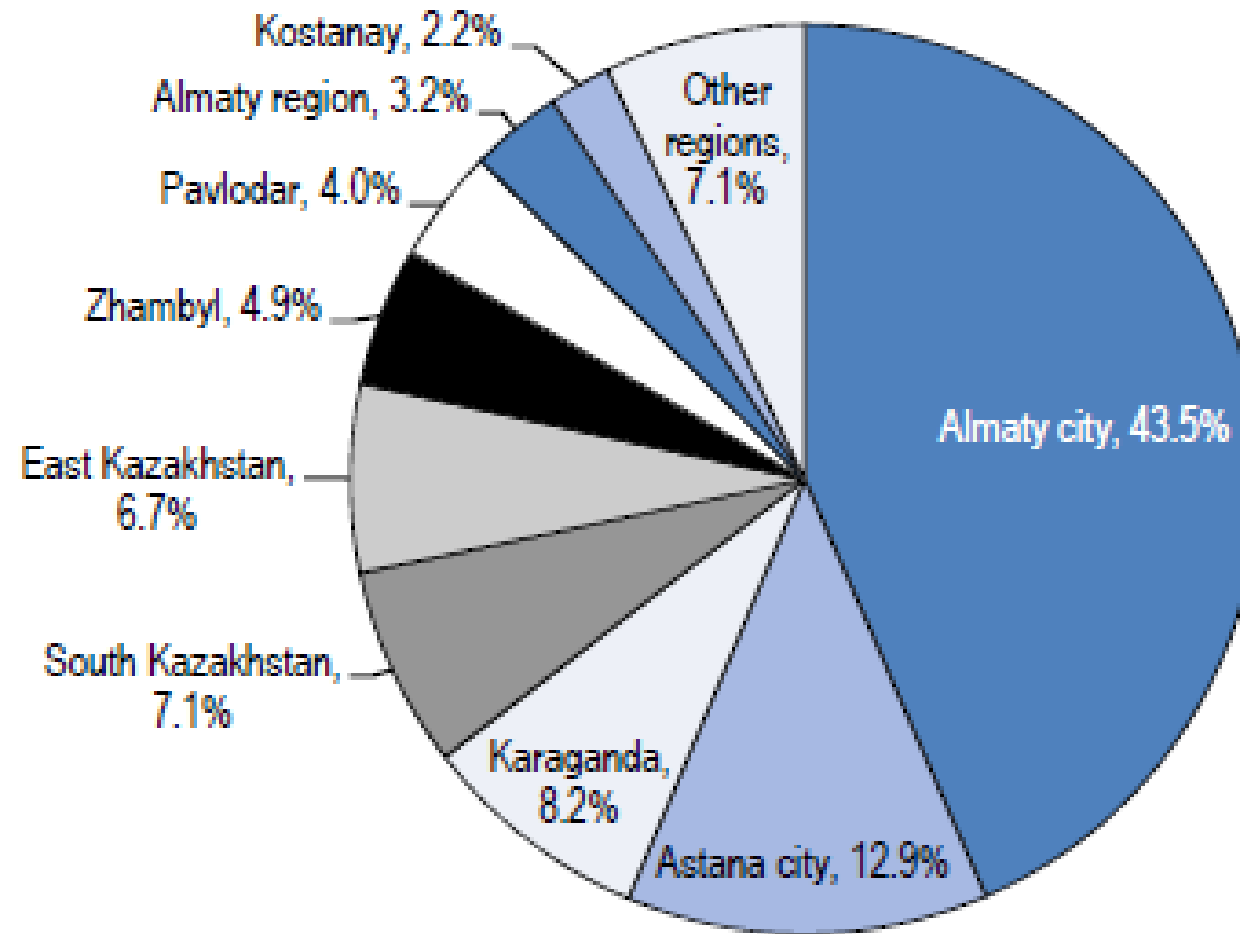
Source: Goldberg I. et al (2006) Public Financial Support for Commercial Innovation, Europe and Central Asia Knowledge Economy Study Part I, World Bank.

Do we develop skills for commercialisation?



How can we develop innovations in the regions of KZ?

Distribution of patent applications in Kazakhstan by region, 2007-14

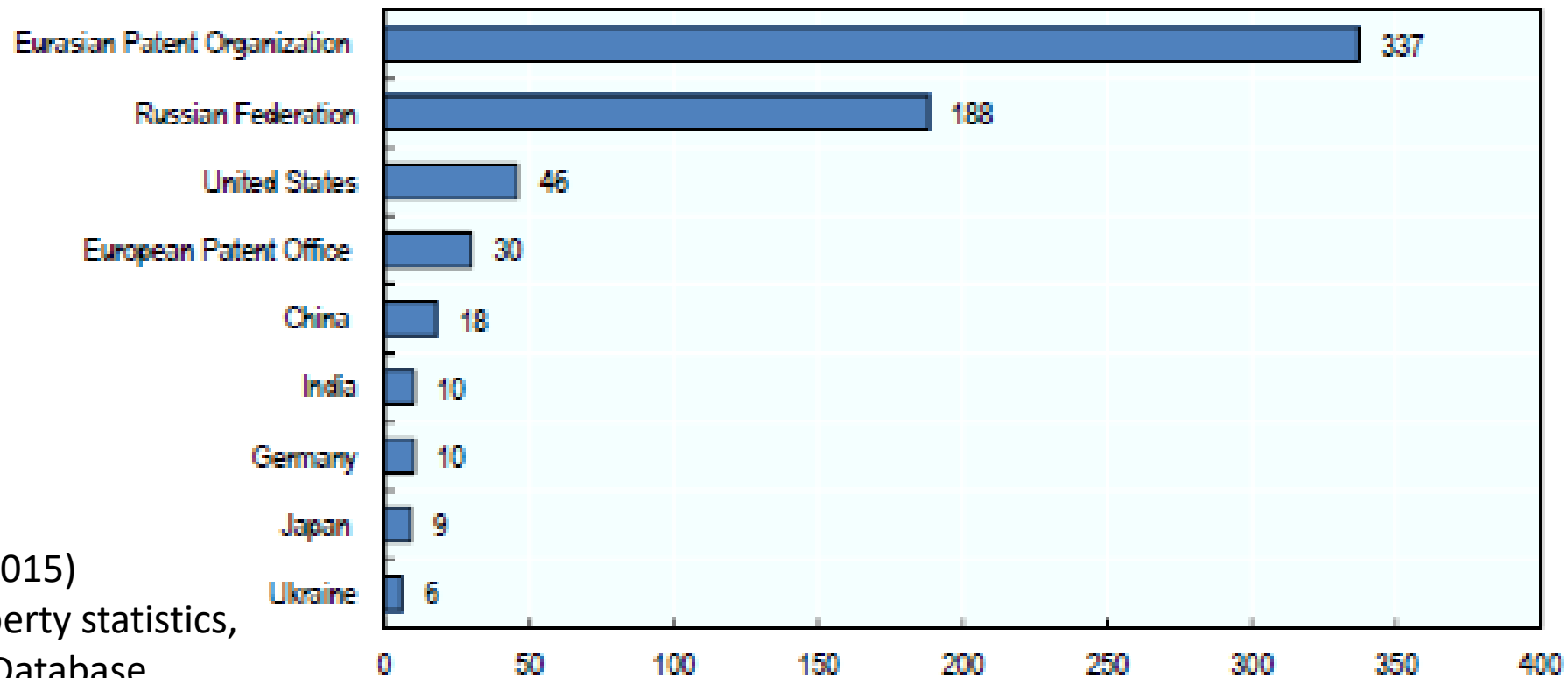


Source: OECD (2016), Boosting Kazakhstan's National Intellectual Property System for Innovation, OECD Publishing, Paris.

How can we enhance international partnership?

Top destinations of patent applications by applicants from Kazakhstan, 2007-14

Total number of patent applications by Kazakh residents

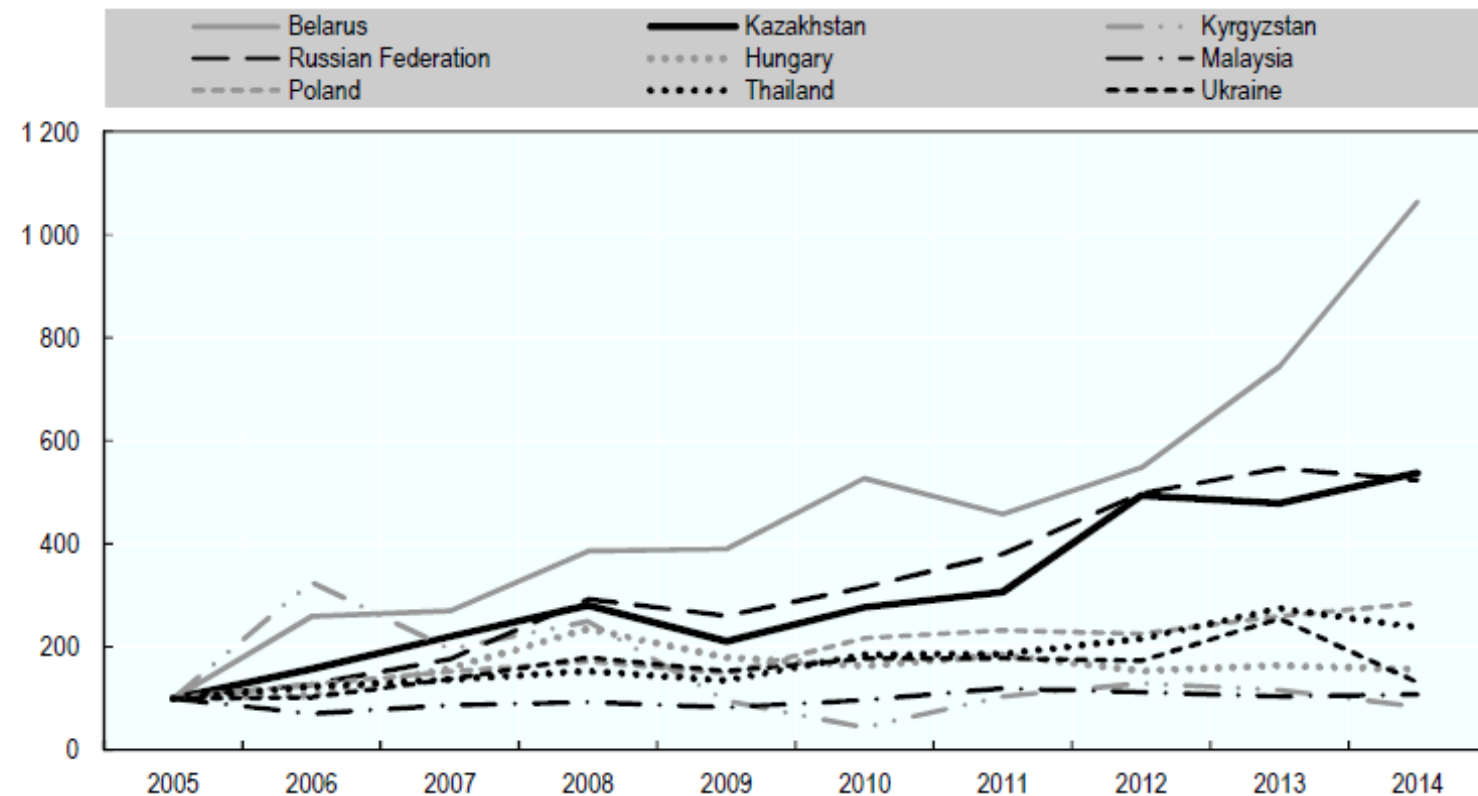


Source: WIPO (2015)
Intellectual property statistics,
WIPO Statistics Database

When do we start making money on licenses?

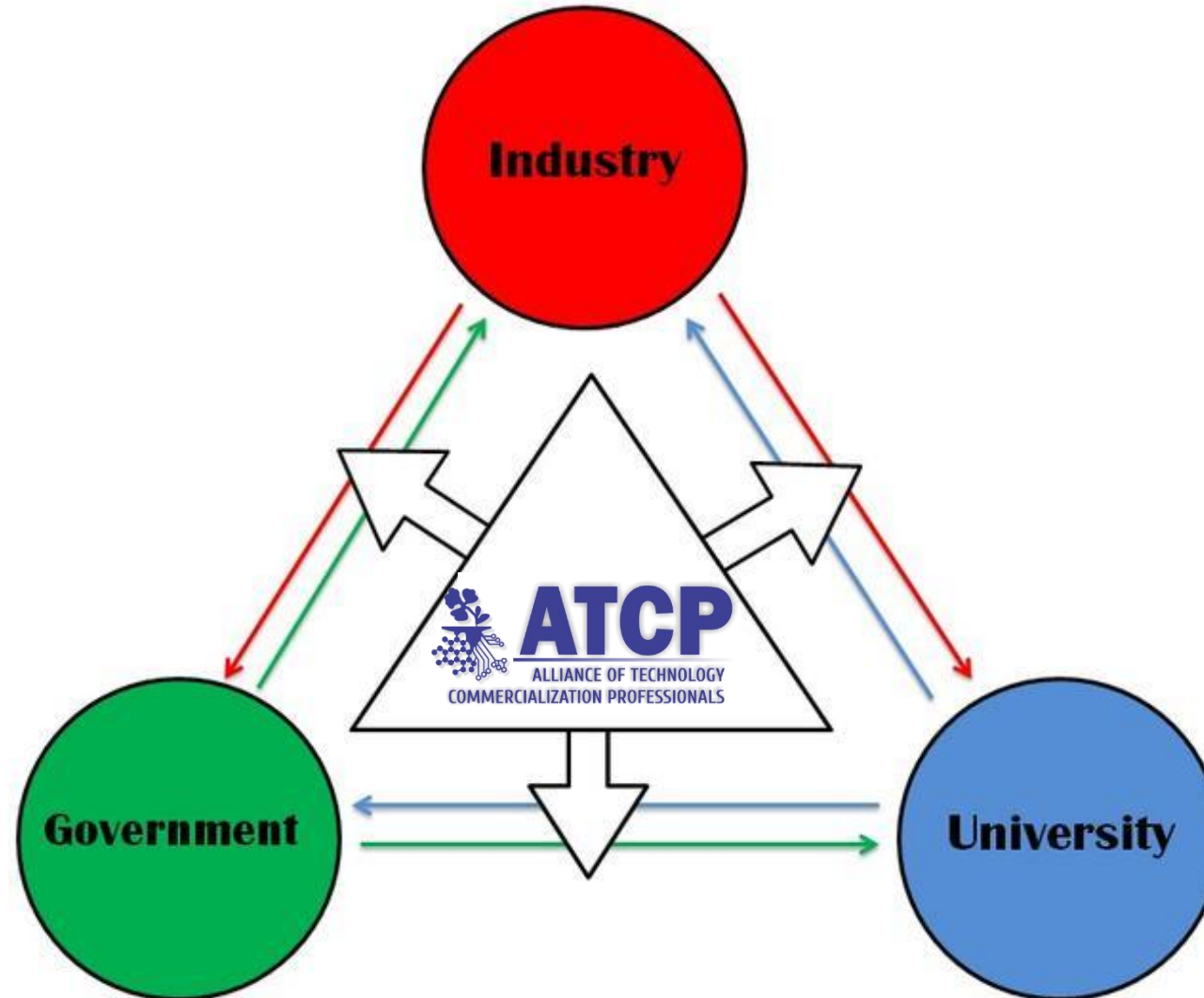
Evolution of royalties and licensing fee payments in Kazakhstan and selected countries

2005 = 100



Source: World Bank (2016),
World Development Indicators

How to make Triple Helix work?



ALLIANCE OF TECHNOLOGY COMMERCIALIZATION PROFESSIONALS

Capacity building

Network of experts



Cooperation platform

Analytical reports

THANK YOU FOR YOUR ATTENTION!



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