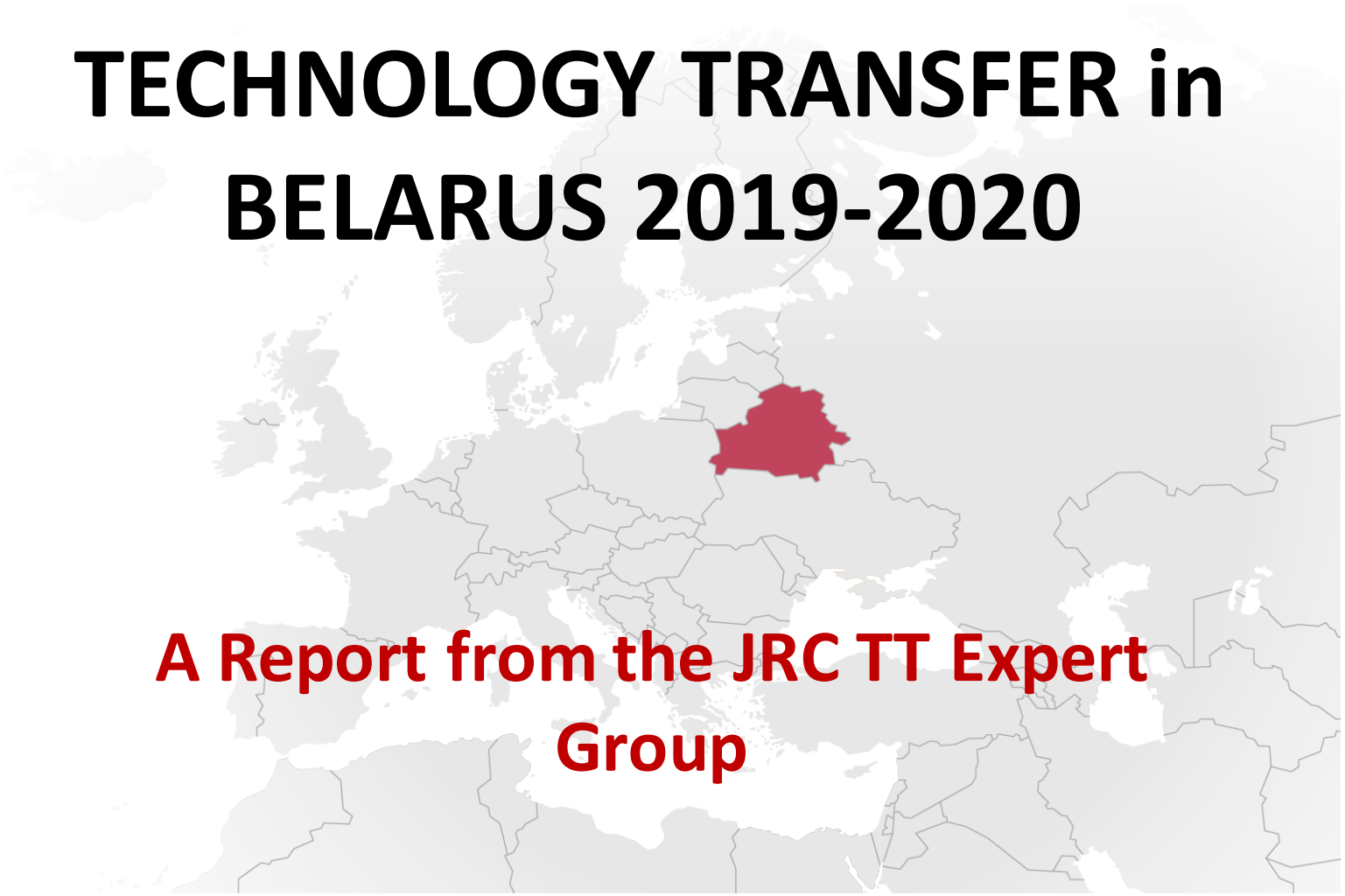
TECHNOLOGY TRANSFER in BELARUS 2019-2020



A Report from the JRC TT Expert Group

Developed environment for Technology Transfer from PROs

Strengths and Opportunities

- ✓ TT processes are well developed in the public sector
- ✓ Established IPR regulatory framework and IP management processes
- ✓ High human capital in technical areas and good quality of higher education
- ✓ Existing Business Angel Network and developing venture industry

Weakness and Threats

- ✗ Weakened economy, low FDI and, currently, low openness
- ✗ Weak private sector of the economy; TT is asymmetrically weighted towards the public sector
- ✗ Innovation process is managed via complex procedures and penalties for not succeeding
- ✗ Low variety of financial instruments available to bolster innovation

Government

✓ 'Innovative development' of the economy is the top priority and the spent of local budgetary funds on technological innovation is increasing

- × Current spending on R&D activities remains low at 0.62% GDP

✓ Innovation policy implementation is guided centrally and carried out on a project-based principle

- × The processes are complex and there is a notable lack of funding

✓ National strategy is focused on implementation of high-tech solutions into traditional sectors

- × The infrastructure required for this change is not yet in place

✓ Well-developed normative IP framework harmonised with international systems

- × IPR framework is focused on public sector

Foreign direct investment and entry of new enterprises remain heavily controlled which deprives the economy of imports of new technologies as well as of growth of SMEs.

Research Organisations

- ✓ Most PROs have an IP Policy supported by current legislation
  - × The policy restricts use of income from sale or licencing of innovations
- ✓ Most PROs have internal funds to maintain domestic patents
  - × International patenting is rarely supported
- ✓ TTOs exist at many PROs
  - × Skills are lacking in marketing and technology landscaping
  - × Almost no TT into the private sector
- ✓ IP creation is incentivised by evaluation, ranking, and funding of PROs
  - × Bias towards 'easier' incremental innovation and utility models
- ✓ TT is strongly focused on de-risked 'improvement' technologies aimed at the existing public sector industry
  - × Patented inventions are not competitive within global technological trends

Large technological gap between traditional economy sectors and international markets.

Industry

- ✓ State-owned industrial enterprises pre-assign all rights to the PROs, the main suppliers of technology to industry
  - × SMEs are neither the supplier, nor adopter of innovative technologies
- ✓ Government supports de-risking inventions by closing the gap between prototype and product ready for manufacture
  - × Only cover the needs of public enterprises
- ✓ Public R&D financing grant schemes are readily available
  - × If the technology fails the funds are returned by the industrial partner; this excludes SMEs who cannot afford to pay
- ✓ Start-ups exist in the private sector and techno-parks are created
  - × Start-ups very rarely progress to SMEs
  - × Little involvement of universities or graduate students in start-up formation
- ✓ Tax incentives are offered for technological start-ups placed in techno-parks
  - × Outside techno-parks, competitiveness is constrained by high taxes and tariffs

The dominance of state-owned industrial enterprises in the country leads to the asymmetry of TT processes towards the public sector.

Support Organisations

- ✓ Established state-run support infrastructure with regional representation
  - × TT professionals require upskilling
- ✓ Support to the IPR system is available
  - × Only cover the needs of public enterprises
- ✓ State-run Technoparks allow the inventor to use the facilities of refine product / scale up for manufacturing
  - × Few business incubators and accelerators
- ✓ The availability of capital for early stage technologies and companies outside of the state sector is growing
  - × Only one fund has innovation voucher scheme and offers PoC funding
- ✓ Global investment community is interested in Belarus' technological potential
  - × Geopolitical risk

The support system is developed but requires further upskilling and additional availability of funding to be effective.

Status of TT (2019-2020)

Main Strengths

- High standard of higher and vocational education
- Significant talent pool in high-tech areas
- World-class success of Belorussian start-ups
- Well developed industrial base
- Existing TT support infrastructure
- Centralised regulatory system allowing fast and efficient implementation of reforms and distribution of funds
- Historically well developed TT into state-owned large industrial enterprises

Status of TT (2019-2020)

Main Challenges

- More trained, dedicated TT personnel is required
- Lack of expertise in market research, technology brokerage, and available funding
- Lack of technology commercialisation managers in regional PROs
- Limited understanding of commercialisation process beyond state industry adoption within planned economy
- Little involvement of PROs and universities in start-up and spin-off formation
- The availability of PE financing channels is not sufficient to satisfy demand
- Asymmetry of inventions towards incremental improvements of known technologies

Recommendations (2019-20)

- Education and wider engagement
- Unified IP management policy
- Benchmarking PROs by TT activity
- Improved licencing framework
- Intellectual property (international patenting)
- Twinning Partnerships with EU universities
- Involving private sector in innovation process and TT
- Increase in regional funding allocation
- Increase tolerance to risk in R&D
- Increase cooperation between the state and the private capital

Questions and Comments

Thank you

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