BENEFIT SHARING – A GUIDING PRINCIPLE OF THE EMERGING TECHNOLOGY TRANSFER MODEL IN GEORGIA

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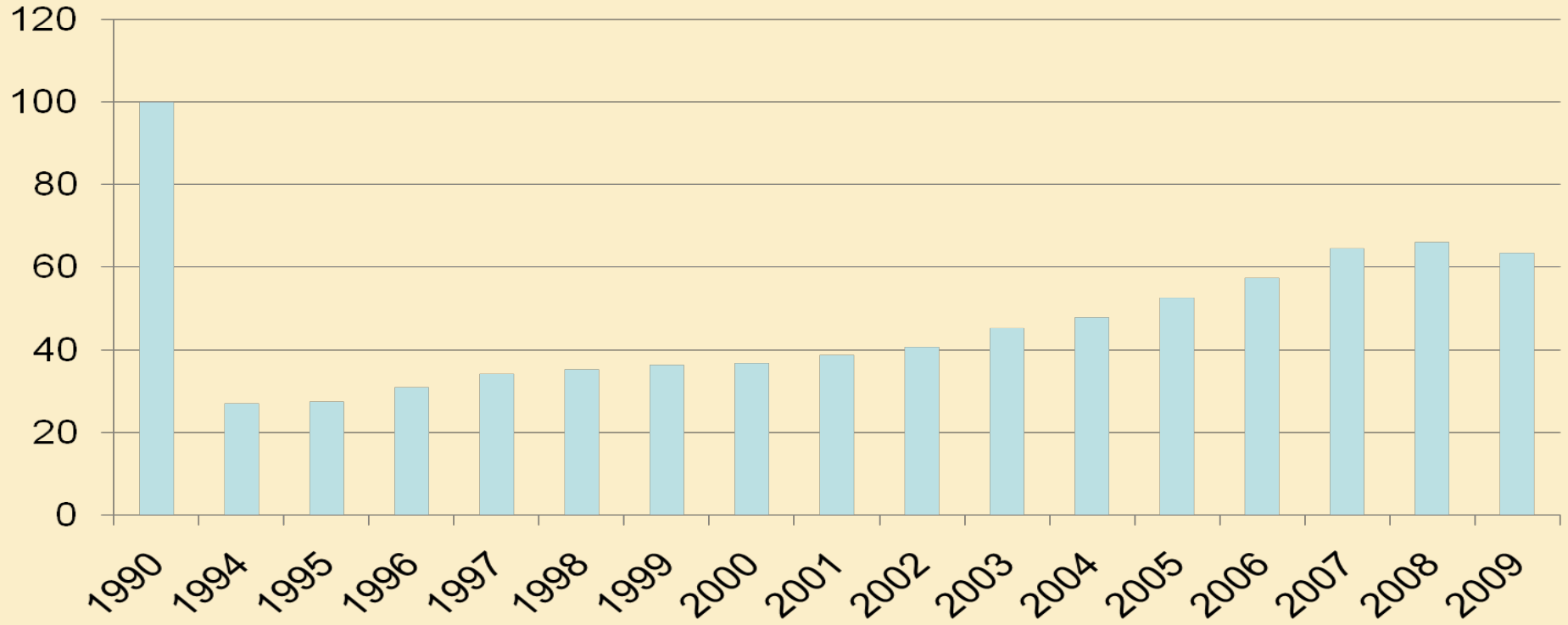
PRESENTATION SCHEME

- Introduction
- Status quo ante of commercialization in Georgia
- Technology Transfer Center – Benefit Sharing consortium based on public-private partnership
- TTC priority - improving industry-science relationships through research collaboration between industry and the universities
- Benefit Sharing through joint inventions between universities – guiding principle of the TTC
- TTC engagement to bring in IP theme into the university curricula
- GRDF involvement in the benefit sharing practice - SCIENCE & TECHNOLOGY ENTREPRENEURSHIP PROGRAM
- National Science Foundation of the Ministry of Education and Science
- Revenue Sharing and measurement of performance at ILIA State University

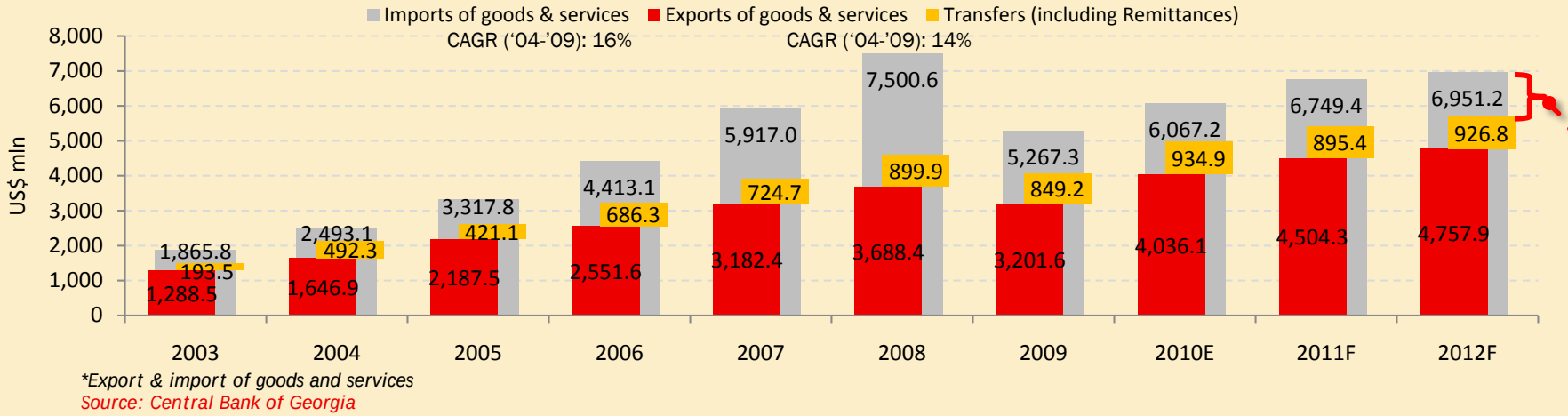
GDP DYNAMICS FOR 1990-2009 (1990=100%)



Source: Competitiveness of Georgia: Analysis and Perspectives, 2010

CURRENT ACCOUNT DEFICIT

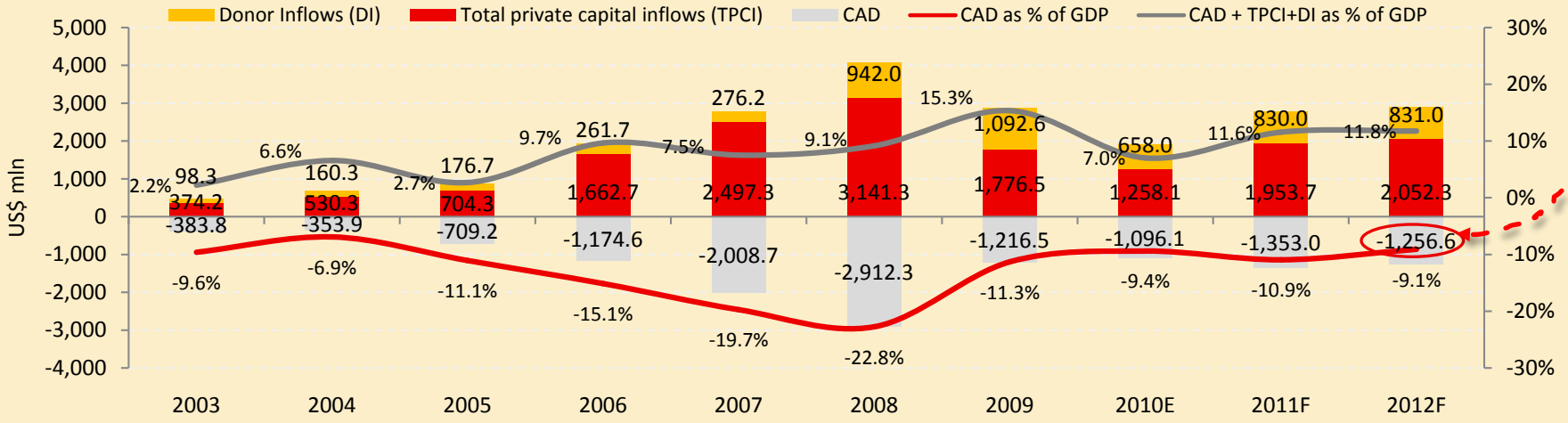
Export and Imports*



*Export & import of goods and services

Source: Central Bank of Georgia

Current Account Deficit



Source: Central Bank of Georgia , Minister of Finance of Georgia

FACTORS HAMPERING COMPETITIVENESS

- ✓ Low technological level and outdated equipment
- ✓ Low financing of education and science
- ✓ Low energy efficiency at production
- ✓ Cheap, and mostly low qualified labor force
- ✓ Dependency on resources

CONCEPT OF BENEFIT SHARING

- *Benefit Sharing* - all forms of cooperation (and compensation) and utilization of resources (monetary or non-monetary) aiming at transferring the findings of scientific research and development to industries

OBJECTIVES OF THE GEORGIAN IP POLICY FRAMEWORK

- Modern legislation in the field of patents, trademarks, copyright, industrial designs and trade secrets
- Development policy for the research, inventions and commercialization
- Facilitating the transfer of technology from universities to industry via the use of intellectual property rights
- Attempts of the national intellectual property center of Georgia SAKPATENTI to raise public awareness in the field of intellectual and industrial property rights protection
- The **concept of benefit sharing** will become a guiding principle of the technology transfer center (TTC)

STATUS QUO ANTE OF COMMERCIALIZATION IN GEORGIA

- challenges in industry-university-R&D institutions partnerships
- Yet, the opportunities and skills for the commercialization of knowledge are quite a limited and absorption capacities to implement the emerging new technology applications are modest as well
- low number of patent applications and lack of patents in high-tech sectors

STATUS QUO ANTE OF COMMERCIALIZATION IN GEORGIA

- Low output of patentable ideas in Georgia (patent activity ratio 0.3)
- Total financing of R&D is about 0.2 % of GDP (compared to India's 0.7 %, Estonia's 0.91 % (2004), Finland's 3.51 %)
- A limited number of "applied research projects" between Georgian universities and Georgian industries, no university spin-offs or technology parks
- In larger enterprises, technology transfer takes place as b2b transfer with foreign companies
- Some high end technology transfer is taking place between Georgian universities and foreign companies

FINDINGS ON POTENTIAL AREAS OF TECHNOLOGY TRANSFER

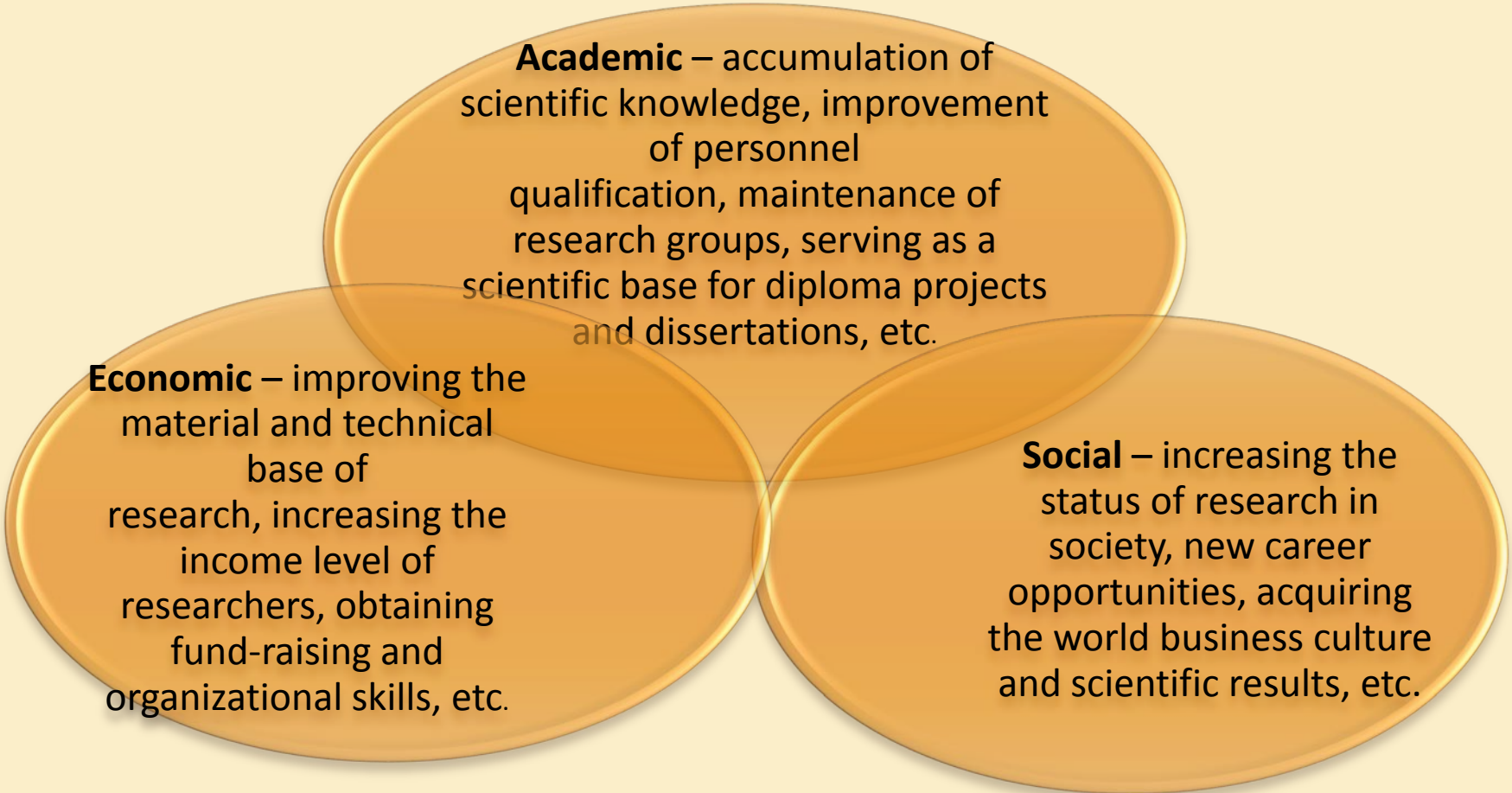
Industry sectors interesting for SMEs related to technology transfer :

- Agrifood
- Information and communication technologies
- Transport and logistics
- Pharmaceuticals
- Civil engineering and construction (energy saving and special earthquake resistant technologies)
- Hydro-mechanics
- Material science
- Environment (in particular waste management), etc.

STATUS QUO ANTE OF COMMERCIALIZATION IN GEORGIA

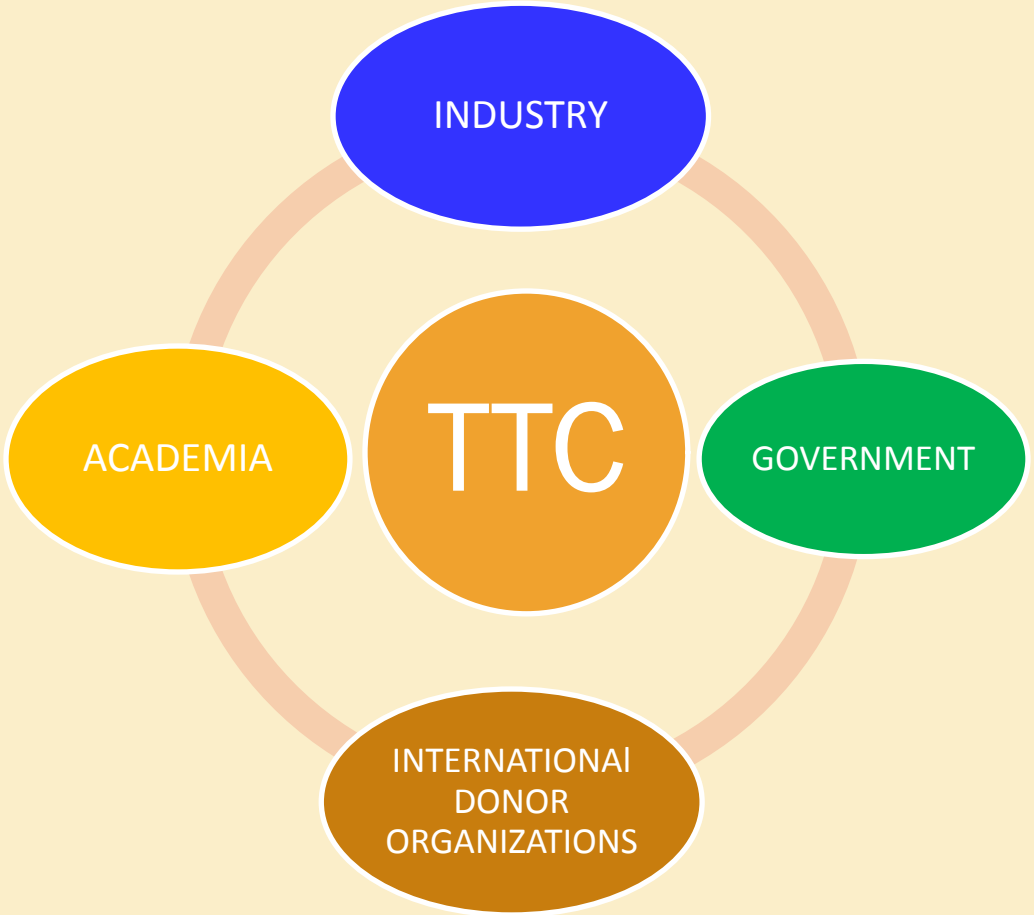
Fortunately, work on a retainers possible in Georgia, consulting activity is exempted from the "conflict of interest" for Georgian researchers and university teachers.

The commercialization of research outcomes could involve a number of advantages in different areas:



NATIONAL TECHNOLOGY TRANSFER CENTER – BENEFIT SHARING CONSORTIUM BASED ON PUBLIC-PRIVATE PARTNERSHIP

- National Technology Transfer Centre(TTC) will be established in 2012
- a model of consensus will ensure the broader participation of all stakeholders in the strategic development of the TTC



NATIONAL TECHNOLOGY TRANSFER CENTER – BENEFIT SHARING CONSORTIUM BASED ON PUBLIC-PRIVATE PARTNERSHIP

all major obstacles are expected to be gradually removed due to multidisciplinary shareholders' structure of the TTC:

- *Involvement of private business and investors* in financing applied research programs and projects
- Considerable *increase in the number and volume of industry and private business sponsored projects* at universities
- *Promoting exchange* between industry/private business and universities
- *Commercialization of research output* will stimulate increasing the number of patenting and licensing activities and contribute to the implementing of the innovation and knowledge transfer chain, etc.

NATIONAL TECHNOLOGY TRANSFER CENTER – BENEFIT SHARING CONSORTIUM BASED ON PUBLIC-PRIVATE PARTNERSHIP

Taking advantage of strong shareholders' base the TTC is planning to address key aspects of the R&D:

- To *link domestic firms to knowledge sources* within the country and abroad
- To *stimulate the process of brain circulation* versus brain drain tendencies by maintaining the process of mobility of human resources for science and technology
- *Focusing on key technologies* of trendsetting area
- *Enhancing the competitiveness of the traditional sectors* through introduction of the recent technologies
- Motivating technological innovations for local SMEs in cooperation with local or international R&D, etc.

TTC PRIORITY - IMPROVING INDUSTRY-SCIENCE RELATIONSHIPS THROUGH RESEARCH COLLABORATION BETWEEN INDUSTRY AND THE UNIVERSITIES

TTC will strive *to smooth the process of the collaboration between two parties*

University is aiming at:

- Getting funds to support its faculty's own projects and its graduate students and technicians
- Getting knowledge of "real world problems" which in most cases are better comprehended by industry than academia
- Opening up opportunities for faculty consulting and employment for students, etc.

Company's motivation is following:

- To get access to the university faculty's special expertise
- The results are needed urgently, university personnel are available to work on the project
- To get publicity and good will for the company and access to the best graduates, etc.

TTC PRIORITY - IMPROVING INDUSTRY-SCIENCE RELATIONSHIPS THROUGH RESEARCH COLLABORATION BETWEEN INDUSTRY AND THE UNIVERSITIES

The next important task for TTC - *Cultural differences* in business-academia collaboration:

- *An objective of the work – while industrial development is goal oriented and has* to be "cost-effective", the university research is open ended
- *Time frames* – the short-term orientation of the industry is almost unimaginable for academia
- *Organization and authority model* - while industry is mostly hierarchical, the researchers are relatively autonomous
- Overall objectives and responsibilities of the organization – while a company is a profit-making entity, the goals of the university are much broader and the policy of "academic freedom" allows the academicians to choose their own direction of research.

BENEFIT SHARING THROUGH JOINT INVENTIONS BETWEEN UNIVERSITIES – GUIDING PRINCIPLE OF THE TTC

- *Identification of joint inventions* will make the dialogue between Georgian universities more open to govern the handling of the invention
- Decisions of *benefit sharing in the invention processes* will ensure productivity of the inter-institutional cooperation hence making dialogue between decision-makers of both parties result oriented
- Inter-institutional contacts will accelerate *the initiation of joint projects*, therefore making the projects centered on benefit sharing principles.

TTC WILL WORK FOR THE INTERNATIONALIZATION

Besides the network creation in Georgia, the TTC will:

- *link Georgian enterprises and universities to twinning partners in Europe*, hence increasing their capacity, skills and instruments for technology transfer

- *link the Georgian enterprises and universities to knowledge networks in Europe* (EUROPEER, STEINBEIS, FRAUNHOFER, etc.)

TTC ENGAGEMENT TO BRING IPR THEME INTO THE UNIVERSITY CURRICULA

- Preparation of the next generation of business managers and owners for companies is a significant task
- Intellectual Property Rights course is still not a component of business administration curricula
- TTC will strive to bring together the valuable expertise of the stakeholders and partners so that BA curricula will become compatible with the objectives and learning outcomes of the IPR knowledge

GRDF INVOLVEMENT IN THE BENEFIT SHARING PRACTICE – SCIENCE & TECHNOLOGY ENTREPRENEURSHIP PROGRAM(STEP)

- Georgian Research and Development Foundation (GRDF) can become one of the major contributor to benefit sharing scheme of the TTC (fostering development of knowledge-based economy through supporting business-science partnerships, technology commercialization, retaining and extending strong links with local and global industries, etc.)

- Business Partnership Grant Program under STEP: promotion of research and development (R&D) partnerships between companies and Science Teams to develop new commercial opportunities of economic benefit for both parties.

- The grant programs were co-financed by the *Georgia National Science Foundation*

- On the whole, the projects funded under this program have following outputs:
  - ✓ 40 innovative technologies were tested (including prototyping). About 20 innovative products have been presented to the market
  - ✓ 4 technology based start-up companies have been created
  - ✓ About 30 applications were filed. Licensing process for 5 technologies is under negotiation.

NATIONAL SCIENCE FOUNDATION OF THE MINISTRY OF EDUCATION AND SCIENCE

- National Science Foundation of the Ministry of Education and Science promotes: implementation of fundamental, applied and innovative research in a competitive environment, development of knowledge-based society, reinforcement of links between science and education, integration of Georgia into international research area and popularization of science.

- The foundation has accumulated an enormous experience handling most of the work up to now related with the technology transfer projects.

- The foundation is expected to become a valuable source that would share its expertise with the TTC.

REVENUE SHARING FORMULA OF ILIA STATE UNIVERSITY

- The model of revenue sharing is applied to “incentivize” all participants of technology transfer, i.e., inventor, department and technology transfer office

- When licensed technology has the potential to provide a financial benefit to private companies, the university asks to share in that benefit by:

  - an up-front payment upon issuance of the license ("License Issue Fee"),
  - an ongoing payment linked to actual sales of the products or service ("Running Royalties").

- ISU will retain fixed 15 per cent of the gross royalties on each patent to cover the general administrative costs.
  - ✓ All patent/license related expenses will be paid
  - ✓ **Net royalties = gross royalties – (costs + 15% gross royalties)**
  - ✓ ISU pays the inventor 1/2 of the net royalties
  - ✓ The department which produced the patent will receive 1/4 of the net royalties generated on a patent.
  - ✓ Technology Transfer Office will receive1/ 4 of the net royalties generated on a patent.

MEASUREMENT OF TECHNOLOGY TRANSFER PERFORMANCE AT ILIA STATE UNIVERSITY

ISU has *elaborated the criteria to measure real impact* of the innovation output in future

- Measurable targets were identified with the view of quantifying the progress and performance of the technology transfer process.
- The scheme distinguishes following dimensions of success that are broken down by measurable indicators:
  - *Research success* - publications, patents, courses, PhDs, seminars/conferences, etc.
  - *Innovation success* - licensing revenues, new products/processes/services, efficiency gains, cost reductions, etc.
  - *Business success* - new markets, increased market share, new businesses created (start-ups/spin-offs), increased revenues/exports, etc.

THANK YOU

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