

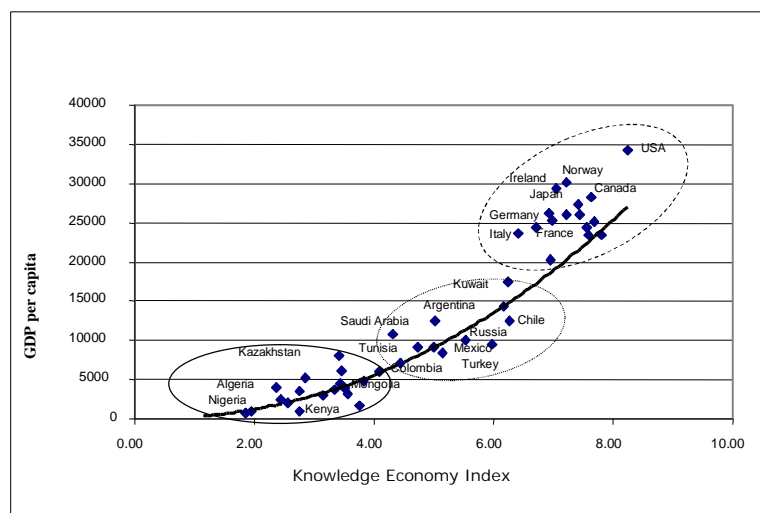
Towards a knowledge economy in Central Asia

Loup Brefort, Country Manager
World Bank Office in Uzbekistan

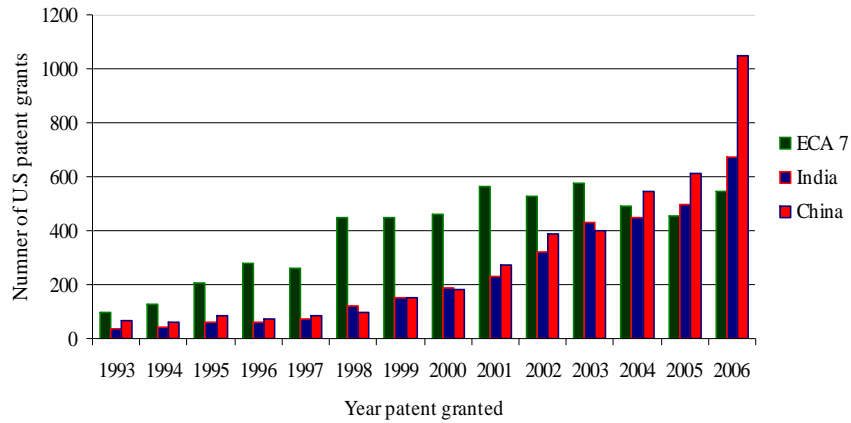
Tashkent, 15 May 2008



Knowledge Applied in the Economy

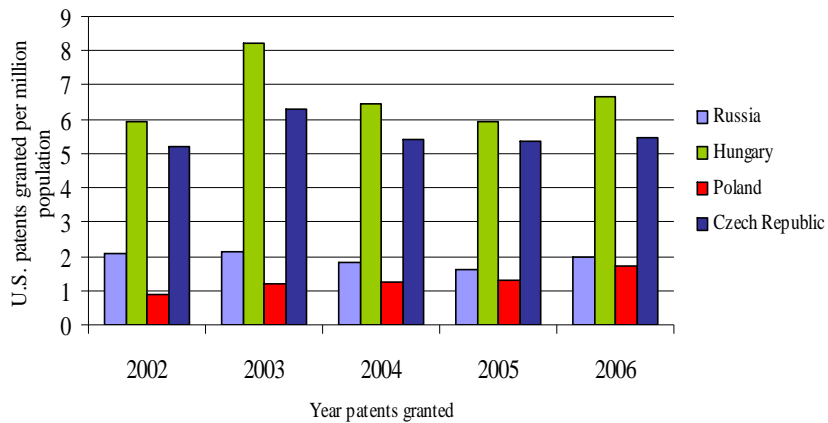


U.S. Patent Grants for the ECA 7 vs. India and China

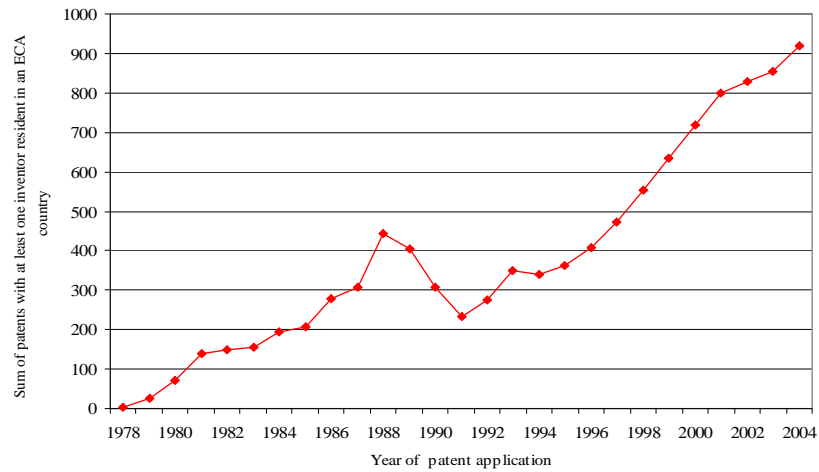


The ECA-7 are: Russia, Hungary, Poland, Slovenia, the Czech Republic, Bulgaria, and Ukraine

U.S. Patents Granted per Million Population

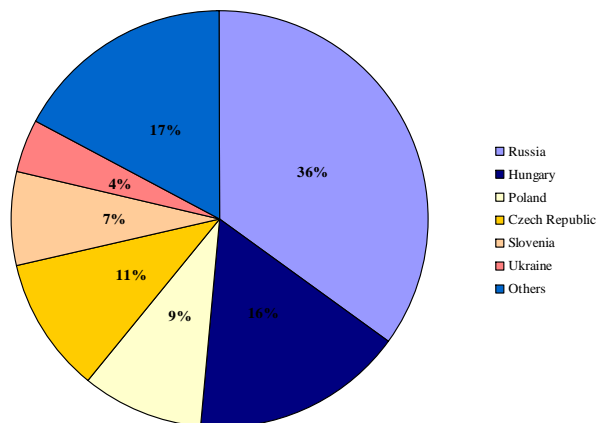


ECA Region Patenting in the EPO



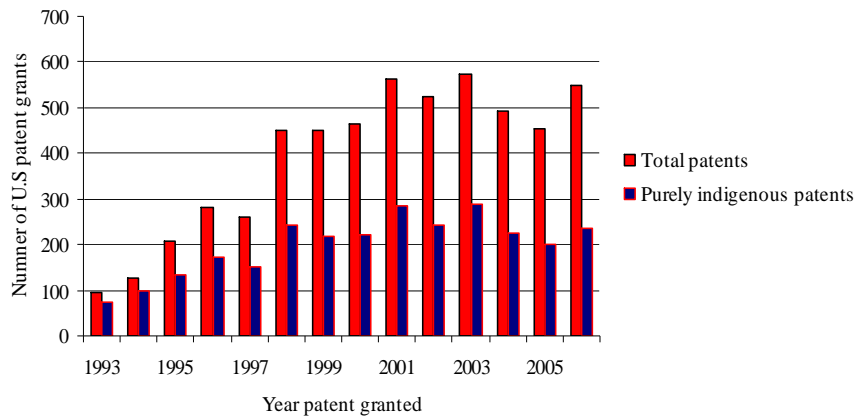
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Patenting in Europe, by First Inventor Country of Residence



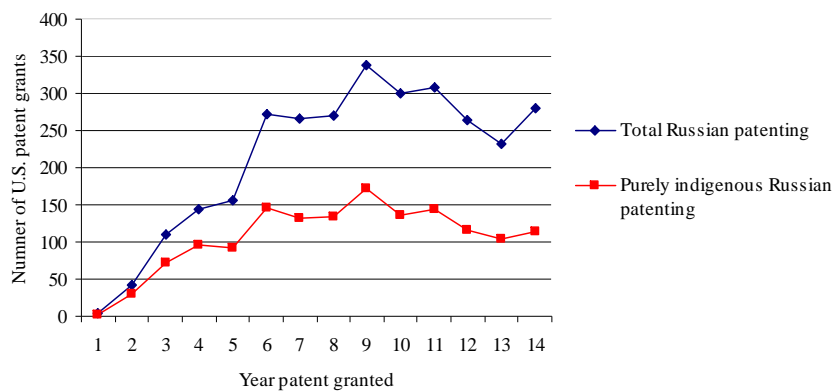
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Indigenous Patents and Coinventions in ECA



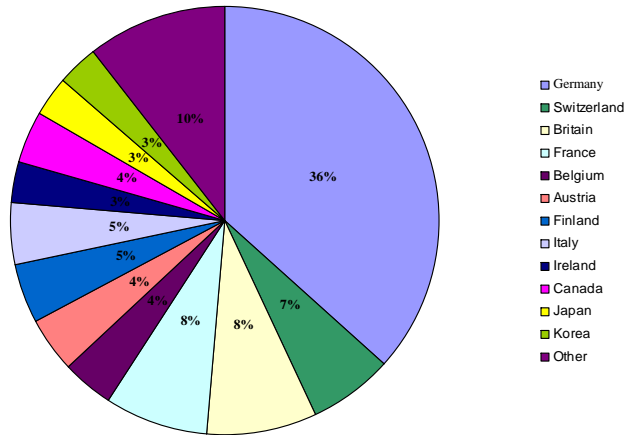
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The Expanding Role of International Coinvention in Russia



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ECA Coinvention by Partner Country



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4 Pillars of a Knowledge Economy



Pillars

Innovation System

- In a healthy innovation system R&D institutions **generate new research and technologies** that are **applied in industry**

Education & Skills

- A **skilled workforce** is essential to fully exploit emerging technologies and for the delivery of modern services

Business Environment

- A **predictable** and **low cost** (entry, operations, and exit) business environment fosters the start-up of creative local firms and foreign investment

ICT infrastructure

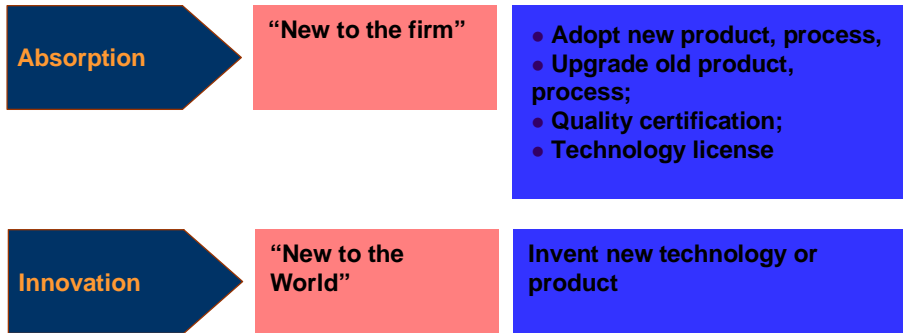
- Access to **reliable and low cost ICT** infrastructure is key for knowledge sharing, access to cutting-edge information

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Innovation and Technology Absorption ...



Examples



... require different pre-conditions



	Innovation	Absorption
Innovation System	✓	✓
Education & Skills	✓	✓
Business Environment	✓	✓
ICT infrastructure	✓	✓

Improving the absorptive technology capability of firms



- i.e. the ability to “tap into” the global technological pool
- It is an important mechanism for accelerating industrial development, raising productivity of workers and increasing economic growth
- Generally recognized key mechanisms for knowledge absorption:
 - Trade flows;
 - Foreign direct investment (FDI);
 - Research and development (R&D); and,
 - Labor mobility (“brain circulation”) and training

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A possible approach



Absorption

Unlock potential of firms to absorb new technology and improve productivity of different sectors

- Absorption is a “no-regret” move to catch up with the rest of the world
- It needs to be facilitated by appropriate policies to strengthen skills, business environment and ICT infrastructure

Innovation

Increase the innovation potential of the research sector to be used for commercial application

- The longer term “innovation strategy” needs to be thought through to:
 - Understand the potential
 - Define the most appropriate policies to be put in place

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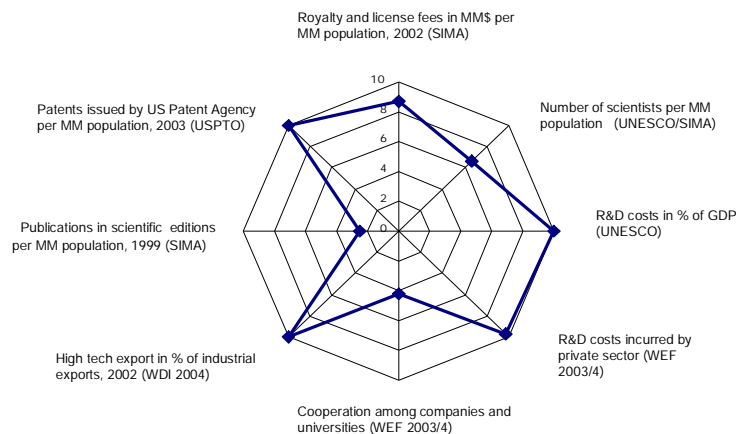
Key Issue



- Uzbekistan must make the transition from producing and exporting unprocessed raw materials and “20th century” industrial goods to producing and exporting more “21st century” knowledge intensive, value added goods and services in the context of an open, global, knowledge-based economy.
- With a well-educated, scientifically-literate labor force, Uzbekistan would appear to be well positioned to become a prosperous participant in the knowledge-based global economy
- However, is Uzbek science organized in a way that is conducive to converting knowledge into wealth ?

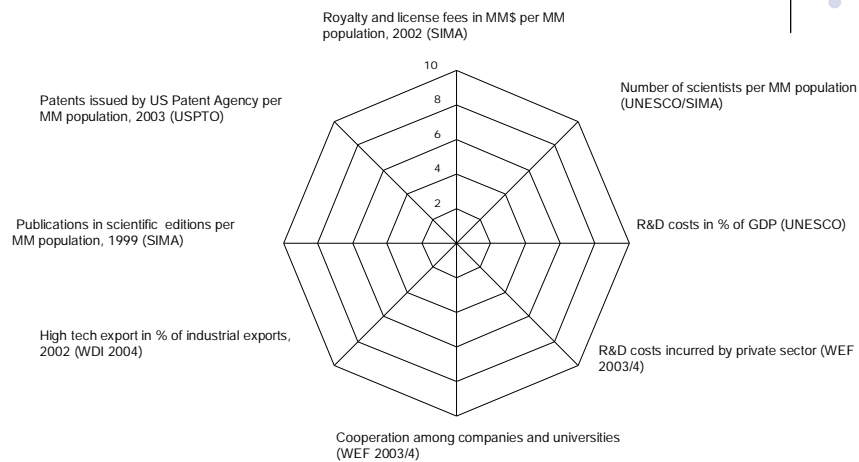
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Knowledge Economy Index in Korea



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Where is Uzbekistan ??



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... Is there a need to change the Uzbek Scientific System ?



- Modern science functions best when:
 - research is linked to teaching;
 - scientists and engineers from different disciplines collaborate in multi-disciplinary problem-solving teams, rather than working alone in “silos”;
 - the supposed distinctions between basic and applied research are minimized or eliminated; and
 - there are close links between research scientists and business enterprises.
- Are Uzbek scientific institutions not operating too much in isolation from each other and, more importantly, from domestic and global markets and private enterprises ?
- Is the R&D system an “overhead expense” rather than a resource for generating wealth ?

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Ideas for a new integrated approach to the Science System ?



- Direct funding of scientists on a competitive basis ?
- Public funding for research based on international peer review assessment of proposals / projects ?
 - Scientific novelty and potential of research at the international level
 - Relevance of research for economic development of Uzbekistan
 - Participation of young generation of scientists in research
- Organization of R&D “Centers of Excellence” and creation of National Laboratory Center to break the “silos” between disciplines ?
- Clear-cut monitoring indicators for eligibility to further public funding ?
- Creation and staffing of “Technology Commercialization Office” ?

