# EU-Russia S&T Cooperation. Related support instruments and future opportunities

Saint-Petersburg, Russia

7 - 8 October 2016

## *SCIENCE VS. INNOVATION*

science

INNOVATION

# QUESTIONS TO BE ADDRESSED

1. Innovation and new technologies - what is the role of **Science**? What ways can **Science** influence the innovation?

2. **Interaction with the academic Science:**
   a. Motivation for industry to collaborate with academia and universities?
   b. How the industry affects the Science?

3. **National Technology Initiative** (NTI) in Russia includes roadmaps for advanced technologies, inspired by the cutting-edge science.
   Can the Russian science ensure NTI implementation in the next 10-15 years?

# INNOVATION

***Innovation is the introduction or implementation of a new or significantly improved product, service or process, new marketing methods or new ways of organizing business, work organization or external relations.***

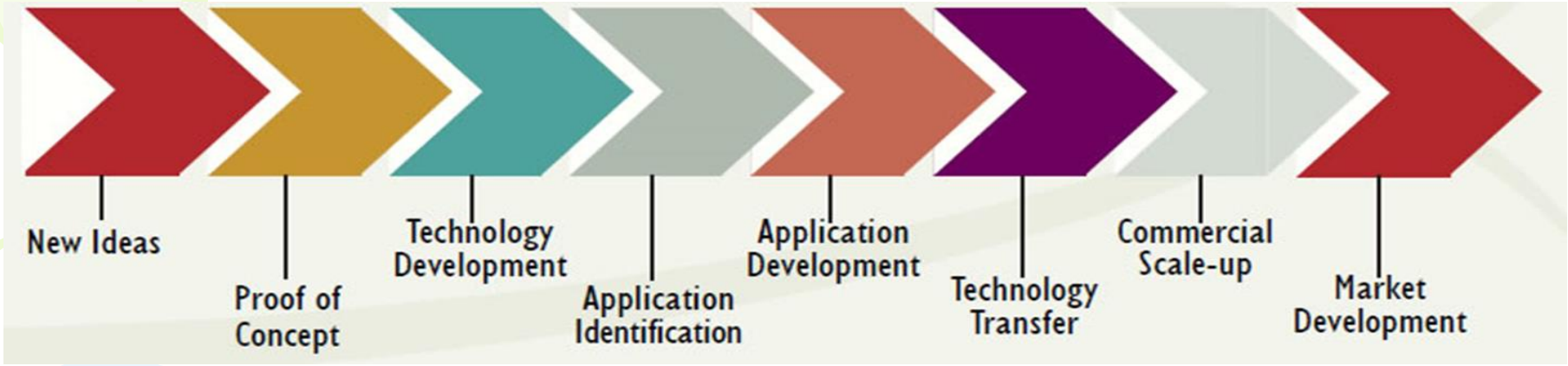
***(OECD, Oslo Manual for the measurement and comparison of innovation in business, 2005)***

***The main message:***

a. innovation is not a sudden flash of inspiration, but a long process of searching, experimenting and learning

b. publicly funded research can contribute in many different ways and at all stages of the innovation process

# NO LINEAR "INNOVATION CHAIN"




- **Most innovation processes start from a market idea**
- **An innovation is not just application of a scientific principle.** It combines knowledge from many different sources and the difficulty lies in combining these competences and striking the right balance between conflicting requirements of the product.
- Academic research and its contribution to innovation is much broader than originating new product ideas or new technology-based companies

# WHAT WAYS CAN RESEARCH INFLUENCE THE INNOVATION

- **Education and training**.

**The main contribution** of Universities in innovation is to educate scientifically trained people. Their training enables them to navigate existing research and/or have enough understanding to estimate what direction and partners new research will need in order to succeed. They will also be able to make good assumptions about where to seek solutions to problems arising in the innovation process.

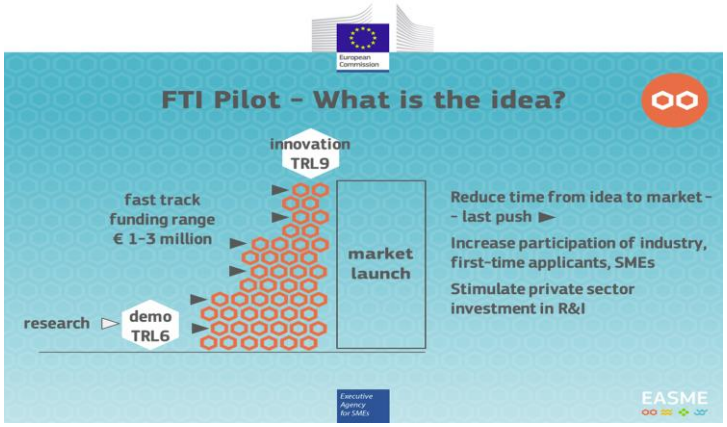
- **Adding new research-based competence to innovation process**, identifying and solving concrete problems.

- **Identifying new areas of knowledge** that may present threats or opportunities

- Knowledge is useful, not only as a source of ideas, but to help identify and solve problems at every stage of the innovative process, providing a basis to **improve existing products or services**

# INTERACTION WITH ACADEMIC SCIENCE: MOTIVATION FOR INDUSTRY TO COLLABORATE WITRH ACADEMIA AND UNIVERSITIES

- R&D results in support of product and process development
- Access to academic networks
- Competence building
- Direct business opportunities
- Access to funding opportunities through national R&D funding agencies, EU programmes




enterprise europe network

*Business Support on Your Doorstep*

# INTERACTION WITH ACADEMIC SCIENCE: HOW THE INDUSTRY AFFECTS THE SCIENCE

**Cooperation with industry can improve academic quality**

"Those professors who ranked highest in scientific citations were the same ones who had the highest number of patent applications"

(study at Chalmers University of Technology)

"Articles produced in collaboration with industry were cited more often than those produced solely by academic researchers"

(study by the Swedish Research Council)

Direct interaction in cross-border networks of academic and industrial researchers contributed to increased productivity in terms of both scientific discoveries and new industrial solutions.

# NATIONAL TECHNOLOGY INITIATIVE (NTI)

EnergyNet distributed power from personal power to smart grid and smart city)

FoodNet (system of personal production and food and water delivery)

SafeNet (new personal security systems)

HealthNet (personal medicine)

AeroNet (distributed systems of unmanned aerial vehicles)

MariNet (distributed systems of unmanned maritime transport)

AutoNet (distributed network of unmanned management of road vehicles)

FinNet (decentralized financial systems and currencies)

NeuroNet (distributed artificial elements of consciousness and mentality)