

Conference “Development of Centers for Entrepreneurship and Innovation in Universities”  
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# **TUSUR – DEVELOPMENT OF ENTREPRENEURIAL RESEARCH UNIVERSITY IN THE RUSSIAN CONTEXT**

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# Presentation aims

- *present the TUSUR model of entrepreneurial university development*
- *discuss approaches to technology entrepreneurship*
- *suggest partnership areas for entrepreneurial universities*

# University pillars

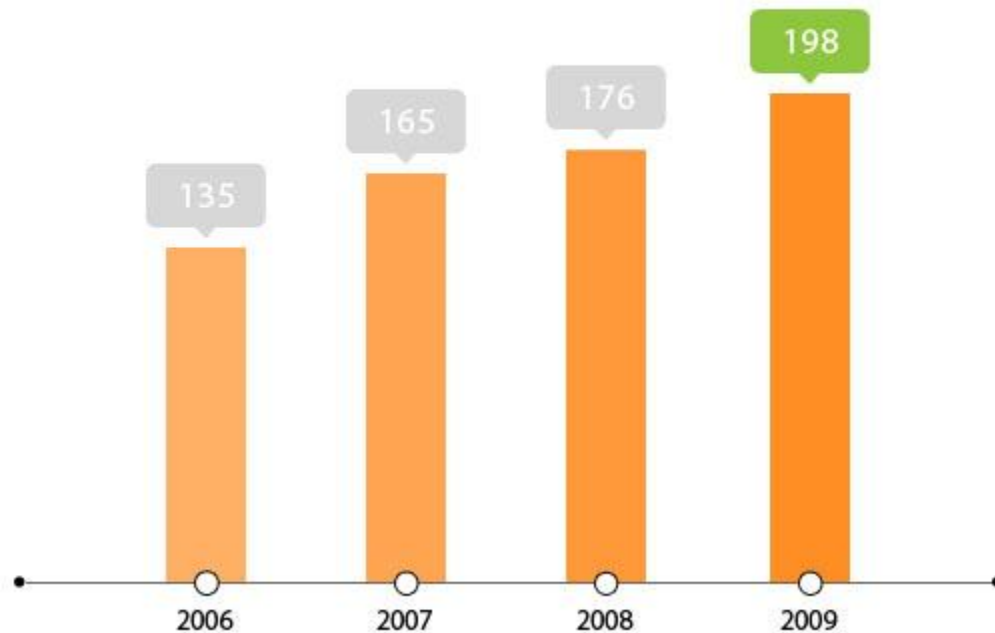
*TUSUR was established in 1962 as a design and engineering university to provide the Soviet space industry with qualified personnel capable of accomplishing “mission impossible”*

- Substantial research expenditures (41 % of the TUSUR total 2011 expenditures)
- Entrepreneurial spirit, for which TUSUR has always been distinguished among Russian universities since its foundation
- Teamwork, intellectual liberty and freedom of action. People who choose TUSUR as a place of study or work are energetic, vigorous, and competent.

# UNIC – University Network of science Intensive Companies

*In the 1990-2000s companies founded by TUSUR alumni produced around 80% total revenue for science-intensive businesses in Tomsk Region*

Number of companies  
founded by TUSUR alumni  
Total amount of companies as of current year

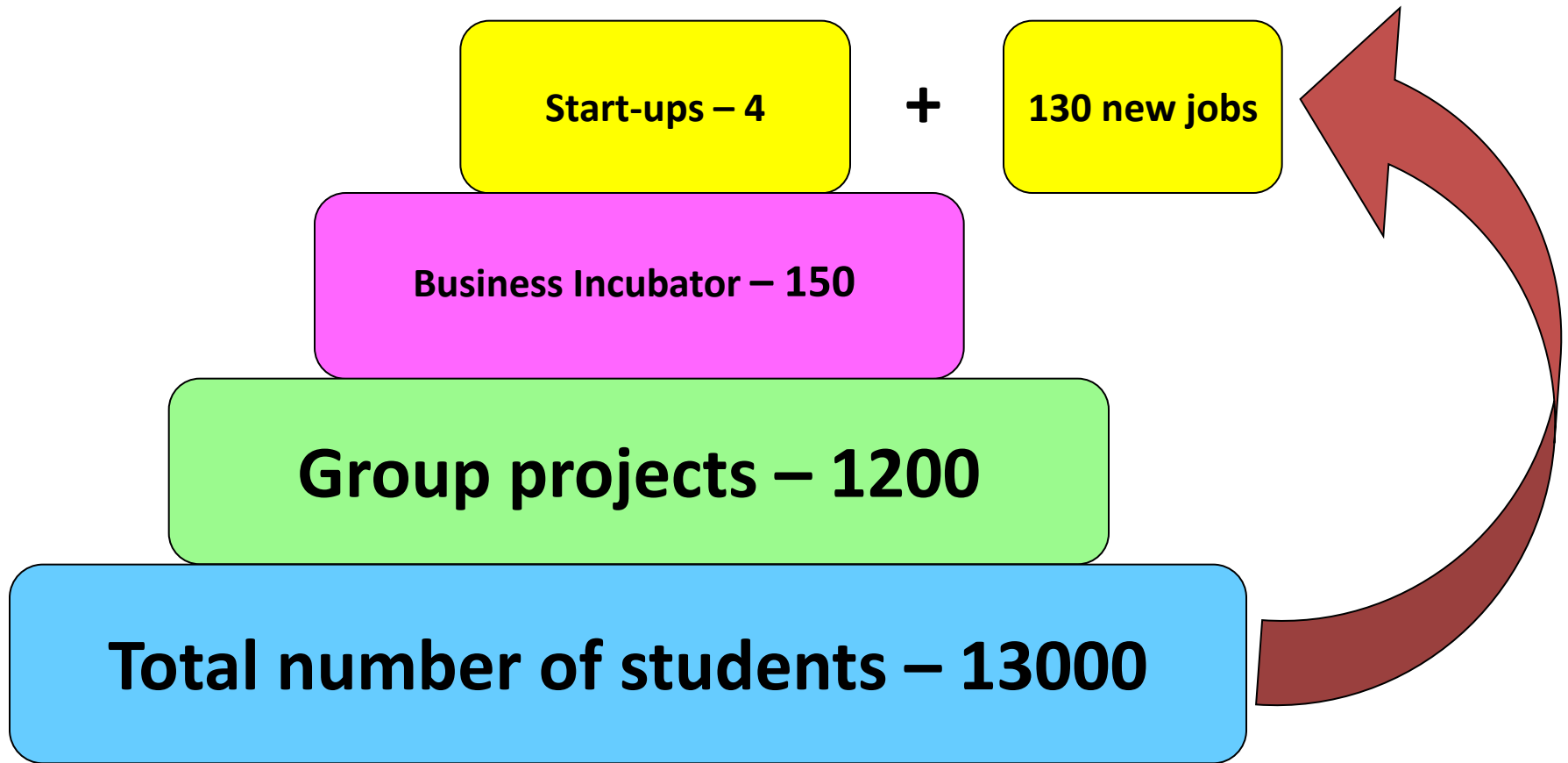


# Start-ups based on university research results

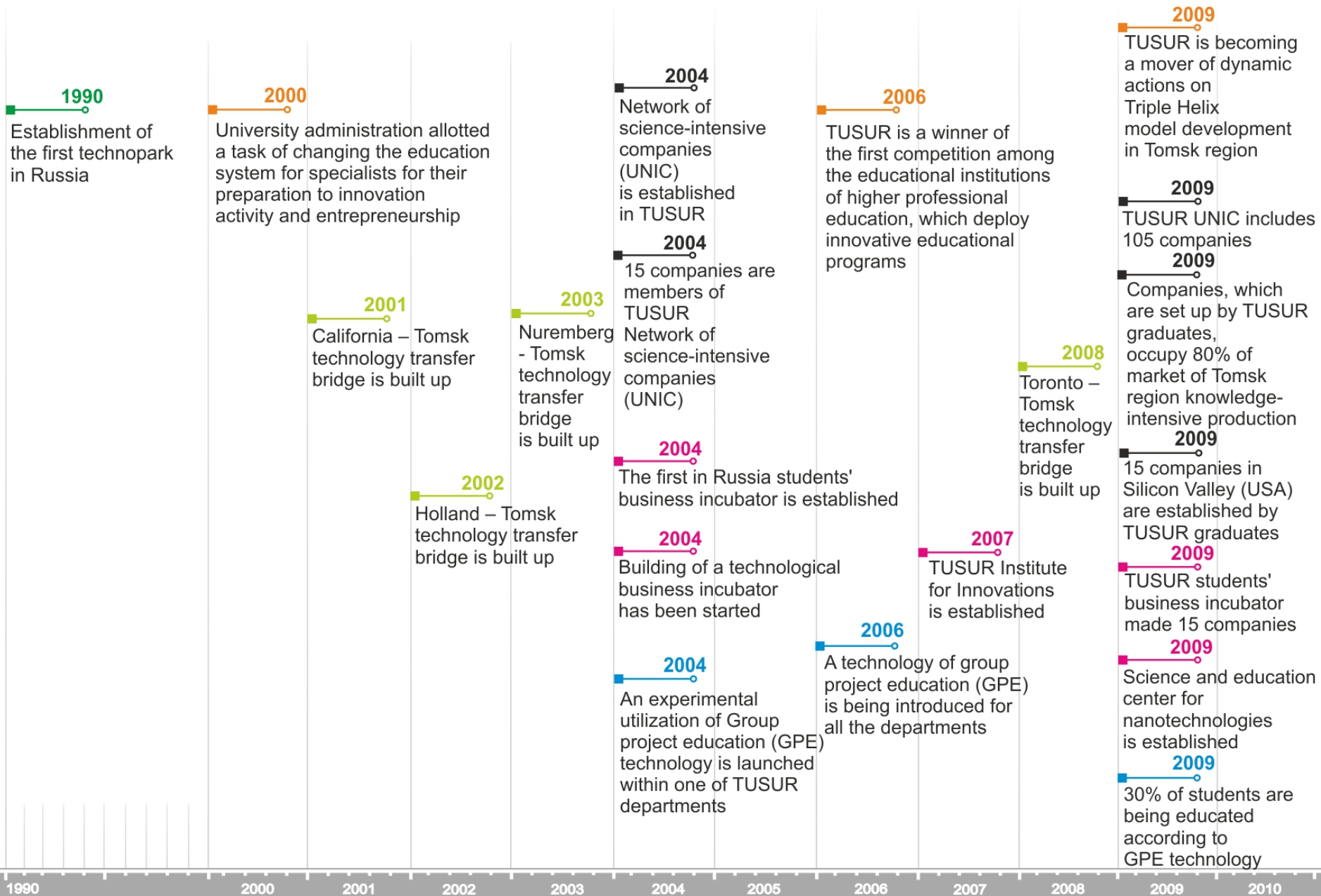
Only in 2011, for example, 19 science-driven spin-out companies were set up to utilize intellectual property generated in the university. The Russian Governmental Resolution №217, which has been recently introduced, allowed TUSUR to become a shareholder of private enterprises as stated above.

According to the recent study, released by the Association of University Technology Managers (AUTM), USA, the University of Utah and MIT have become the world leaders in university entrepreneurial activities and setting-up of spin-outs based on university research by annual generation of 18 and 17 start-ups respectively.

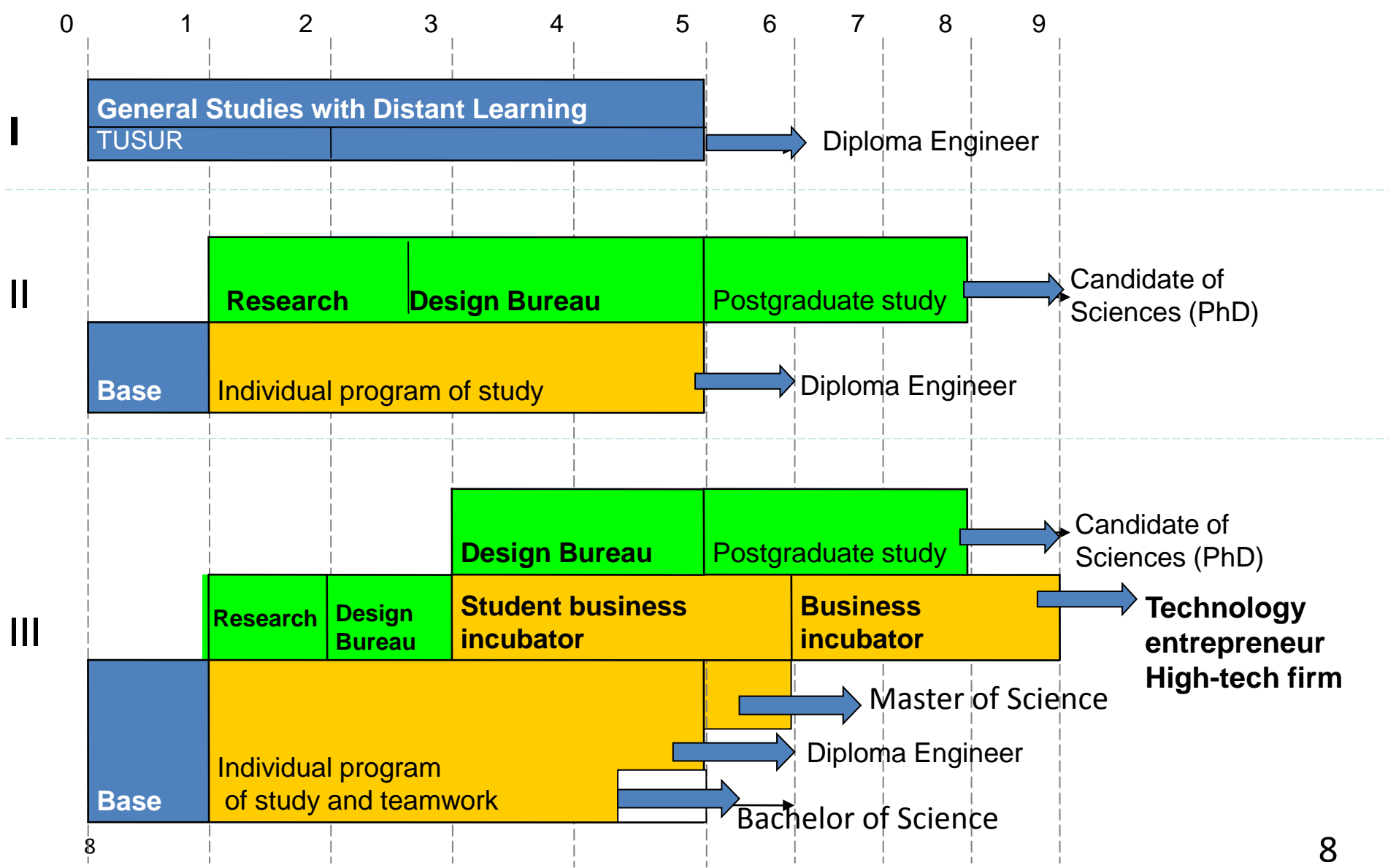
# Group Project Learning



# Map of innovation developments at TUSUR



# Emergence of technology entrepreneurship



# Student Business Incubator

Small enterprises in Information Technology and Electrical Engineering	8
Offices for small enterprises	30
Student workstations:	
Radio-electronics	150
Information Technology	150

Established in 2004 to become First in Russia

Total area	3000 m <sup>2</sup>
Employees	34 persons
4 new businesses created every year	
130 new jobs generated annually	



# Entrepreneurial infrastructure of TUSUR

- **Institute of Innovation**, training professionals in innovative business management
- **Student Business Incubator**, where students have an opportunity to organize teams for specific projects, undergo a series of seminars and trainings or graduate from the business incubator as owners of private science-intensive companies. In 2009 the total turnover of 18 start-ups that came out of this incubator amounted to 2.3 mln. USD
- **Investment Fund**, supporting student projects with grants allocated on a competitive basis
- **R&D Commercialization Office**, assisting students and faculty in searching for suitable markets to sell R&D results
- **Technological Business Incubator**, primarily focused on world-level research and development and small-series production of hi-tech products
- **IT Centre**, offering short-term IT training courses with international certificates
- **Intellectual property protection agency**, helping organize the patenting and licensing of innovative R&D
- **Network of science-intensive companies**. Companies request scientific R&D to be carried out by TUSUR students and faculty. They also create specialized departments and research laboratories at the university, while company employees give lectures and supervise student projects at TUSUR.

# TUSUR and the special economic zone

- Special Economic Zone is a territory of the Russian Federation determined by the Russian Government and characterized by the special regime of entrepreneurial activities.
- In 2005 one of the four Special Economic Zones of Technical Innovation Type was established in Tomsk
- The Special Economic Zone hosts 58 high-tech companies striving to become leaders in technology. 15 resident companies of the Tomsk SEZ were founded by TUSUR alumni, the first residents “EleSy” and “Micran” – among them
- TUSUR is a primary source of professionals specializing in electronics, information and telecommunication technologies for the Tomsk SEZ

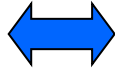


# **Entrepreneurial university development should be closely associated with internationalization**

- One of the major initiatives of the Institute of Innovation TUSUR was to establish overseas platforms for TUSUR to build so-called Knowledge and Technology Transfer Bridges with entrepreneurial hubs around the world to nurture the spirit of enterprise and help TUSUR students develop global outlook and aspirations
- To date, four bridges to link TUSUR with its successful alumni residing abroad have been set up in the United States, Canada, Asia and Europe

# International technology and knowledge transfer bridges

**California**



**Tomsk**

Exchange of undergraduate and postgraduate students and scholars with universities and companies  
Mutual research with UC Berkeley and other universities  
Tomsk Inc., California, was founded in 2001 and functions as representative office of TUSUR in the USA  
Tomsk Soft, resident of the student business incubator, is a software R&D division of Tomsk Inc.

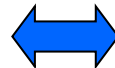
**Toronto**



**Tomsk**

TechBridge, resident of the student business incubator, was founded in 2005 and is an R&D division of the Toronto-based software development company

**Nuremberg**



**Tomsk**

Educational programs and exchanges with universities and companies  
Research lab of the telecommunication KRONE was established in 2003  
EleSy, Tomsk – EleSys, Nuremberg

**Taiwan**



**Tomsk**

Education  
Research  
Innovations

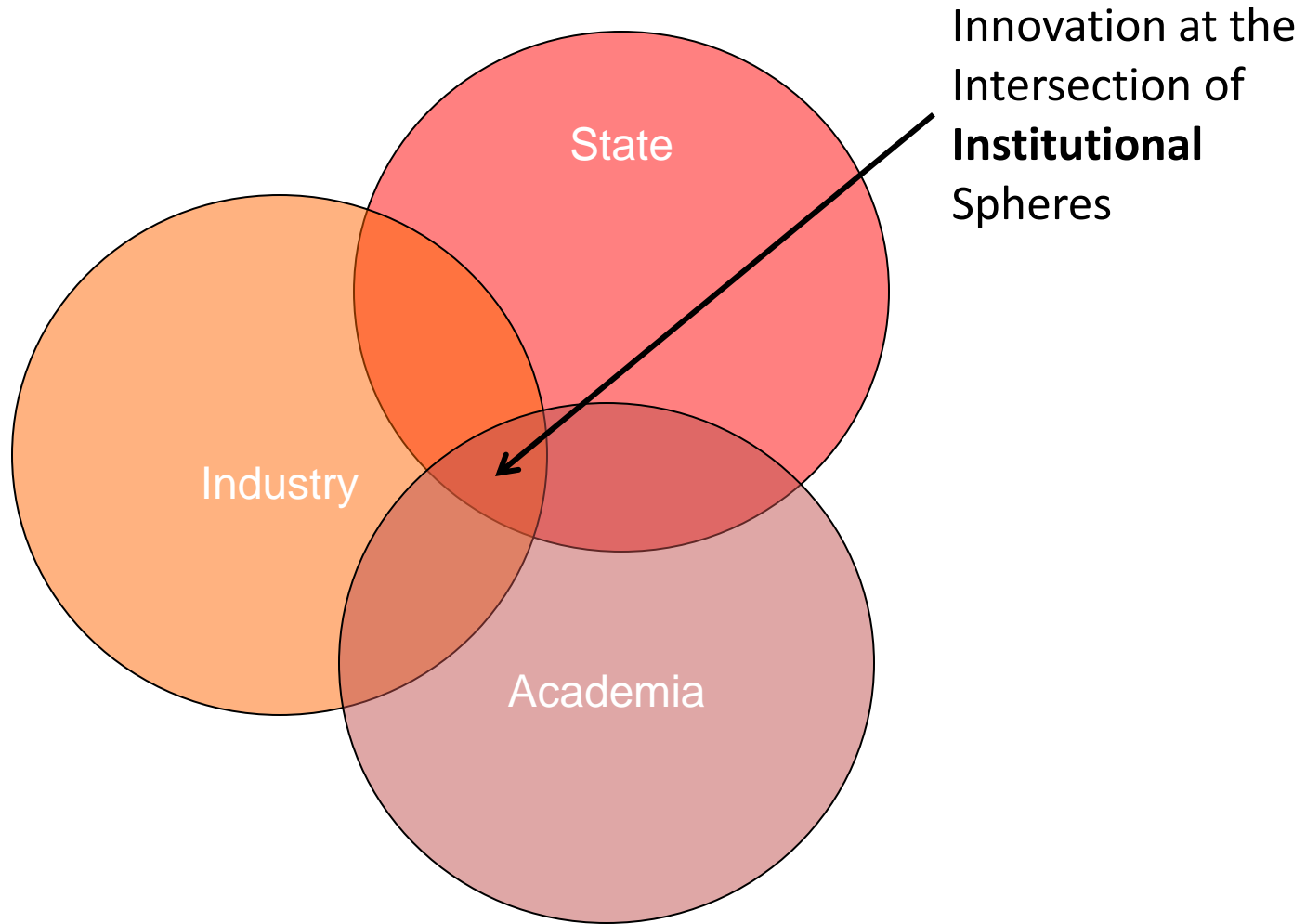


# **Entrepreneurial universities need representative offices in the key world innovation centers**

TUSUR alumni founded 15 companies in North America (USA and Canada)

Three companies became Skolkovo residents in 2011 (3Dbin, PrE, Sector, 3A-Vision)

# Triple Helix Model



*Civil Society: Base of Triple Helix*

# Entrepreneurial universities in late XX century

- Henry Etzkowitz described innovative development as interaction of three institutional actors: government, industry and universities – in his Triple Helix model
- Triple Helix is a theoretical foundation for the entrepreneurial university development
- TUSUR Institute for Innovation is a research center adapting the Triple Helix model to the Russian context
- TUSUR publishes an international journal on Triple Helix

# New stage in the history of universities

- The previous stage in the history of universities was associated with development of research competence and thinking, formation of the global knowledge circulation, launch of joint research programs and labs
- In the XX century design and engineering universities emerged, for them R&D commercialization was the key activity
- Just as education was subordinate to research at the previous stage, now education and research are to be subordinate to entrepreneurship and commercialization

**Thank you for your attention!**