

ROLE OF UNIVERSITIES IN SMART SPECIALISATION STRATEGIES

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33 CONFERENCE OF RECTORS AND PRESIDENTS OF EUROPEAN UNIVERSITIES OF TECHNOLOGY
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What is a Smart Specialisation?

Research and Innovation Smart Specialisation Strategy (RIS3)

- Europe 2020 priority: employment and growth
- What research to support, to get best positive societal impact?
- RIS3 is a precondition for use EU Structural funds for research investment
- Slovakia uses EU structural funds for research infrastructure in 2007-2013 period (disparity)

SLOVAKIA

Slovakia: young state – rich history

- 1526 – Habsburg Monarchy
- 1867 – Austro-Hungarian Empire
- 1918 – Czechoslovakia
- 1989 – fall of the Iron Wall
- 1990 – **fall of industry, incl. Defence -> conversion**
- 1993 – Slovak republic



Slovakia – former „Upper Hungary“



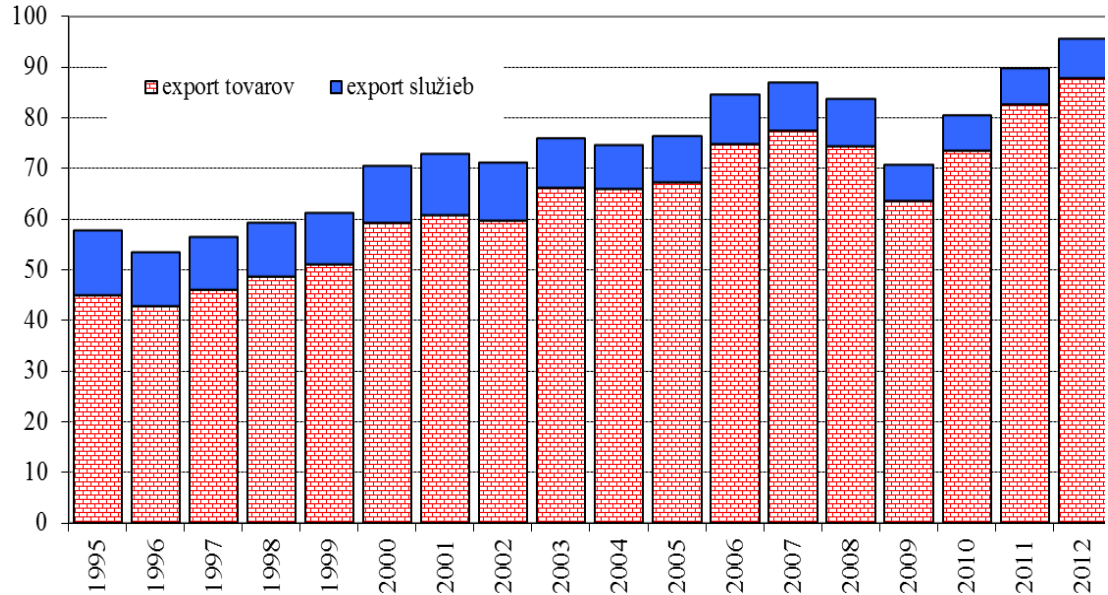
Rich history in industry and education

- 3rd century BC – **the first mining settlement by Celts**
- 1238 Schemnitz (Selmec, Selmecebánya or today Banská štiavnica) the first royal town in the Kingdom of Hungary (UNESCO World Heritage)
- 1735 the first mining school in kingdom (Samuel Mikovíny)
- **1762 Mining Academia Schemnitz**



Slovakia today

Growing export
of goods
and services



- Strong but narrow industry
- Relative large unemployment (cca 13%)
- Large disparities in research infrastructure (missing industrial research)

VW Slovakia – Bratislava (500 000 cars/year)



VW Small Family



Other places: Trnava, Žilina

PSA produces in Trnava
(200 000 cars/year)



KIA produce in Žilina (300 000 cars/year)

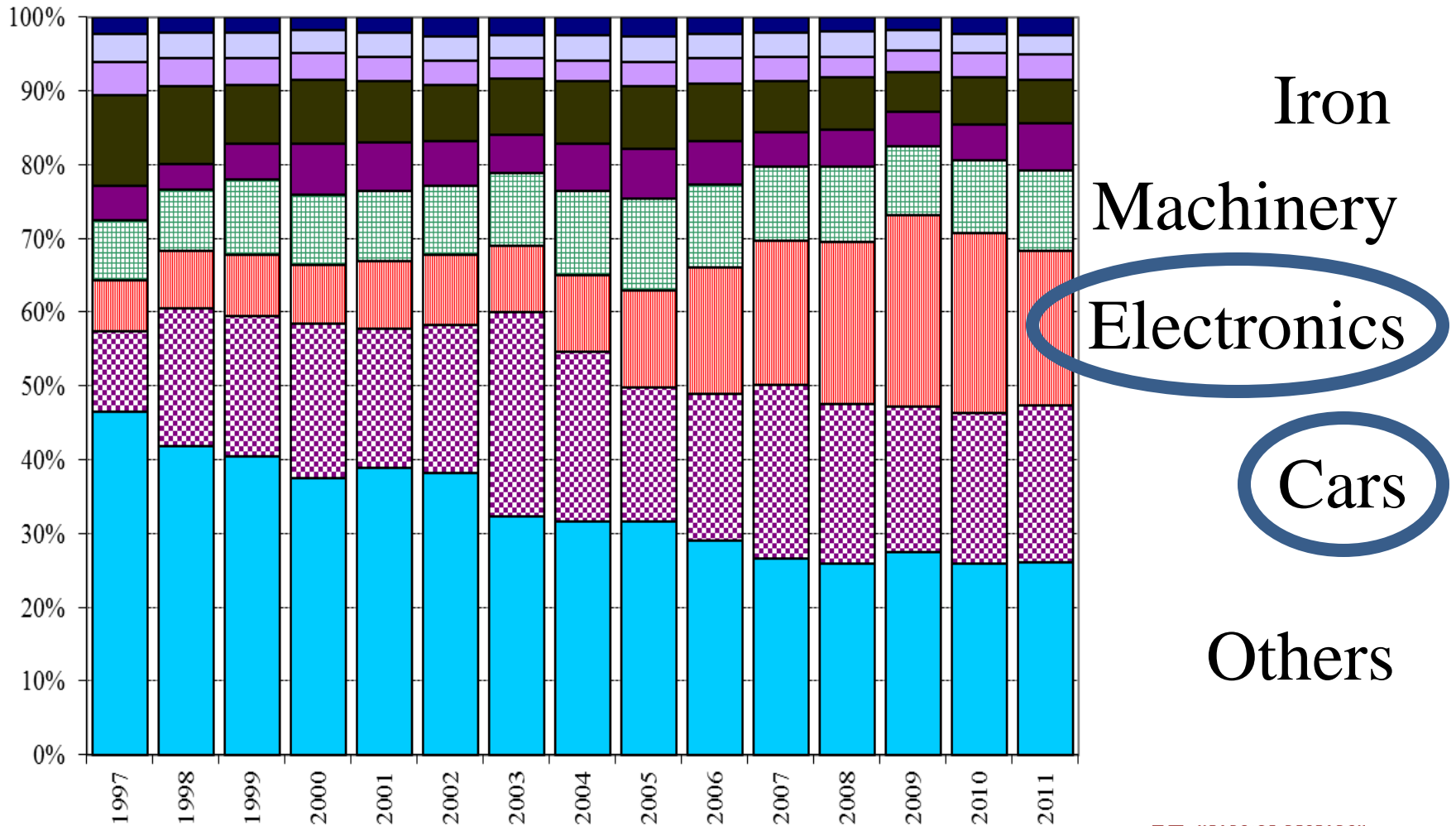


SMART SPECIALISATION

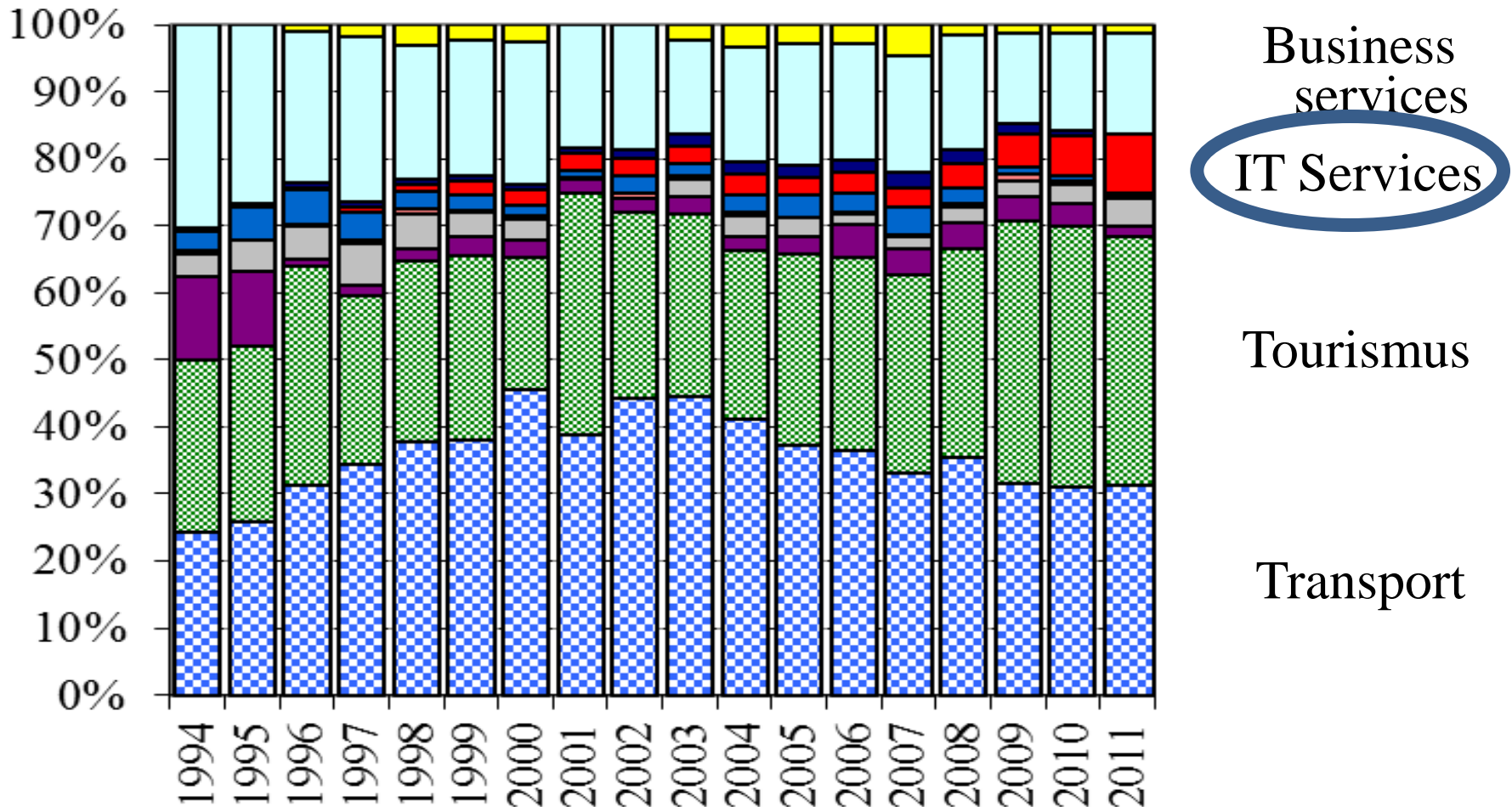
Six key parts of RIS3

- Analysis – in wider context, based on evidence
- Governance (participation in the process) ←
- Strategic goal – a common vision
- Identification of priorities
- Sustainable policies
- Monitoring and evaluation

Slovak export of goods by classes



Slovak Export of Services



IT Services & Creative Industry

- 15 years growing export
- IT + business services make 1/3 of export services
- 50 000 employers
- largest income for state budget
- naturally grown, (HP, IBM, Atos, CISCO...)
- Slovak owned e.g. ESET – a global antivirus company with highest number of installations in the world*

RIS3 PRIORITIES

1. Deepen embeddedness of FDI

by enhancement of R&D and innovation ability of local suppliers

- **Improve R&D innovative level of local suppliers**
- **Clusters** which support the development of networks feeding into higher tier MNCs.
- Connect to the mother country to create R&D Laboratories and/ or technology centres to Slovakia

2. Increase contribution of R&D to economic growth

via global excellence and local relevance

- Improve **international excellence and collaboration**
- **University-industry R&D links** through competence centres, centres of excellence, university science parks...
- Industrial led **strategic research programmes** involving universities, AS, and industrial partners

3. Creating a dynamic, open and inclusive innovative society

- Stimulating of the **creative industries**
- Support for innovation and **entrepreneurship activities**, including social, open, environmental innovation.
- Support for R&D&I to address the **social challenges** of relevance to Slovakia, including Demographic Ageing.

4. Improving the quality of the human resources for an innovative Slovakia

- Improving the **quality of secondary and tertiary of education** to upgrade the quality of graduates
- Better **involvement of businesses in 'education'** from secondary schools to post-doc schemes
- Greater **mobility** of highly skilled personnel between sectors (placements, exchanges, mentoring)

Tools:

selectively targeted financing pushing for
cooperation public research organisation and
industry companies

Tax incentives

Non financial measures

Current status of RIS3 SK

- Approved by government and EC
- Governance, monitoring and part of measures have to be finalised
- Action plan pending (november 2014)
- Operational programme under negotiation with EC

Automation Civil Engineering Geodesy

Electrical Engineering Mechanical Engineering

Architecture Chemistry Food Technology

Information and Material and Technology

Communication Technology Design Management

SLOVAK UNIVERSITY OF TECHNOLOGY

SLOVAK UNIVERSITY OF TECHNOLOGY (STU)

VALUES

- **Unity of education and scientific research**, engineering and arts (Von Humboldt principles)
- **Theoretical-practical learning methods** (Mining academy in Banská Štiavnica, 1762)
- **Direct cooperation with industry & strong international links**
- **ECTS and three degree study system** (Bologna declaration)

150.000 graduates

17.000 students

4.100 continuing edu.

1.400 staff members

600 research project

200 contracts

100 international proj.

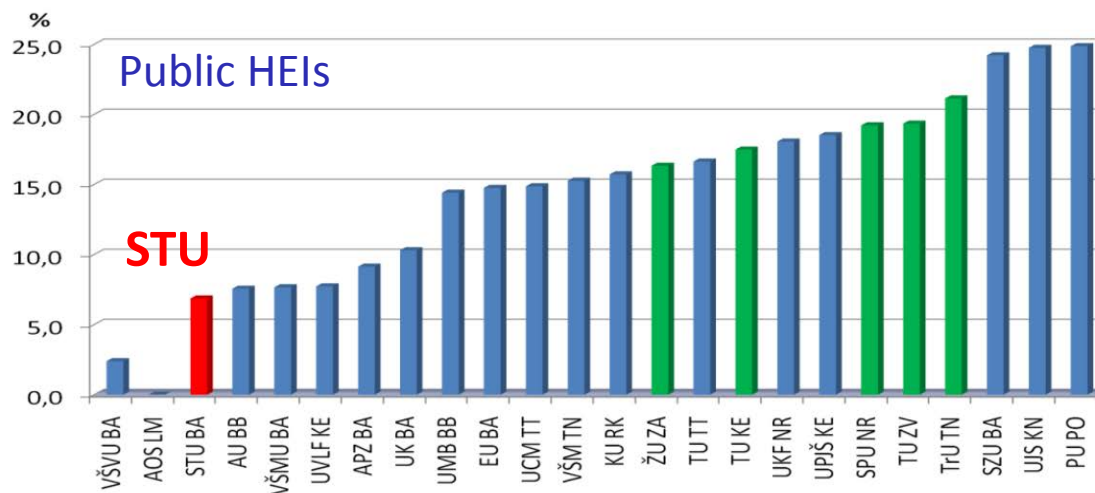
7 schools (faculty)

2 institute

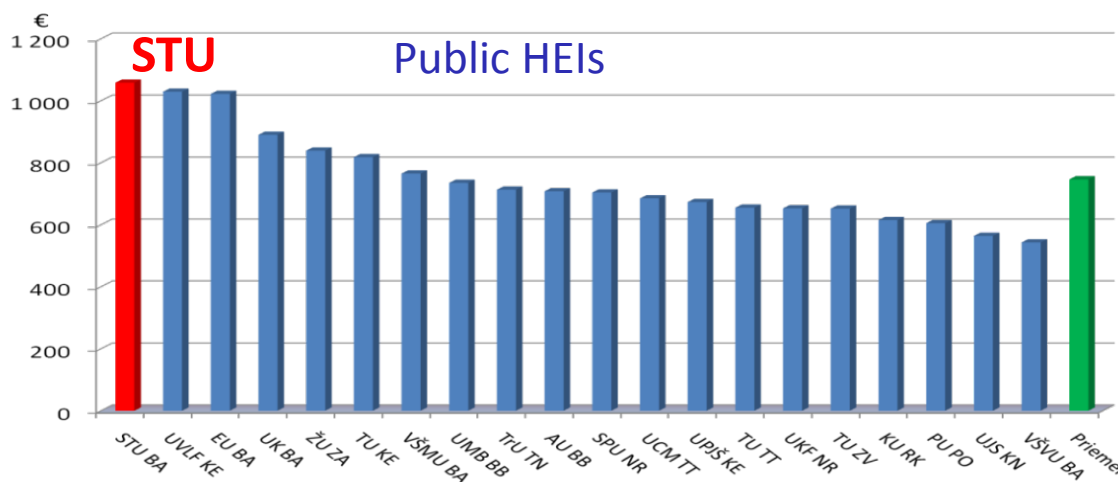


HIGH EMPLOYABILITY OF GRADUATES STU

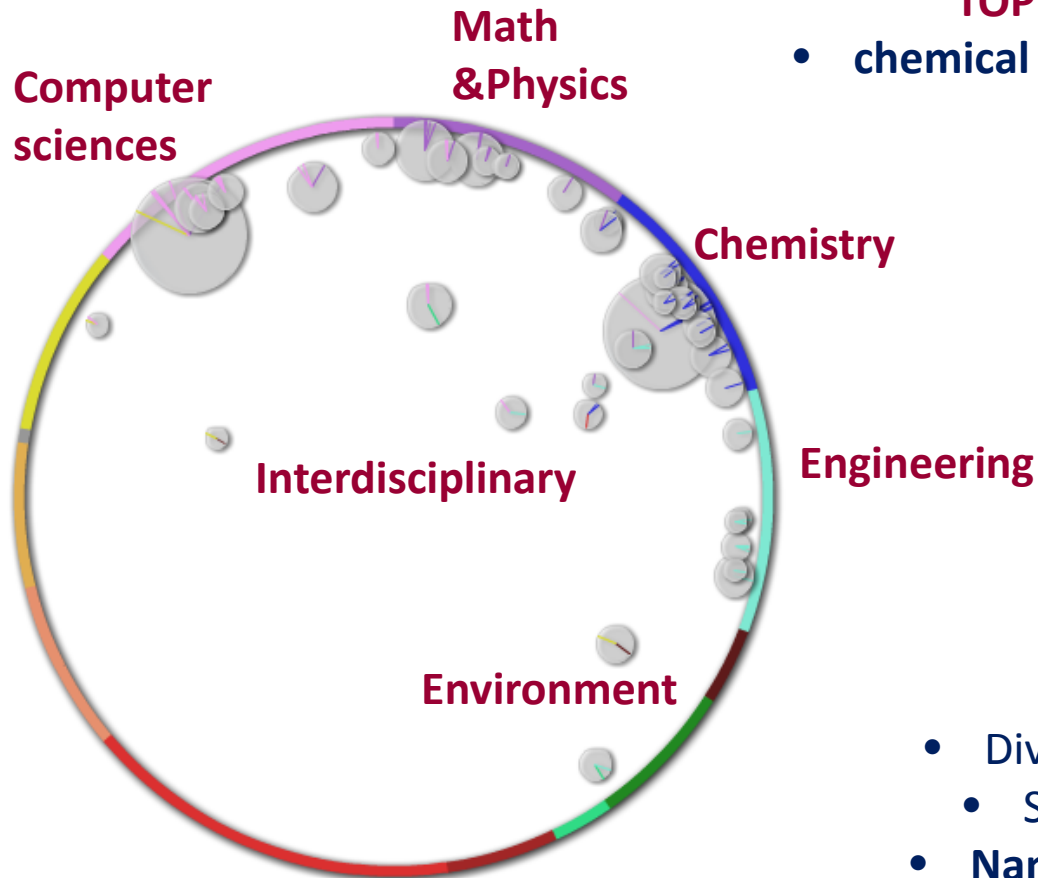
The lowest unemployment of STU graduates among other HEIs in Slovakia



The highest wages of graduates from STU among other HEIs in Slovakia



SCIVAL SPOTLIGHT PROFILE OF STU



TOP 10 STU COMPETENCIES OUT OF 42

- **chemical compounds**; hydrogen bonds; rings
 - **t-norm**; Copula; Effect algebra
 - **Magnetic properties**; Amorphous materials; Alloys
 - frequency analysis; **flood**; flood frequency
 - **Semantics; Ontology**; Recommender systems
 - Speech; **Speech synthesis**; Speech analysis
 - **Controllers**; Linear matrix inequalities; Control
- Divorce; Stereoisomerism; Teicoplanin
- Semantics; Semantic Web; Ontology
- **Nanocomposites**; Polypropylenes; Clay

SciVal Spotlight – <http://www.spotlight.scival.com/>

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> 45 SME START-UPS

Start-up office and InQb program

- Entrepreneurship awareness program
- Business development consultancy
- Office space and services



Supported SMEs

foretaster, s.r.o.

ANV, s.r.o.



IURA CAPITAL, s.r.o.



MICHAL KRÁTKY ARCHITEKTI s.r.o.

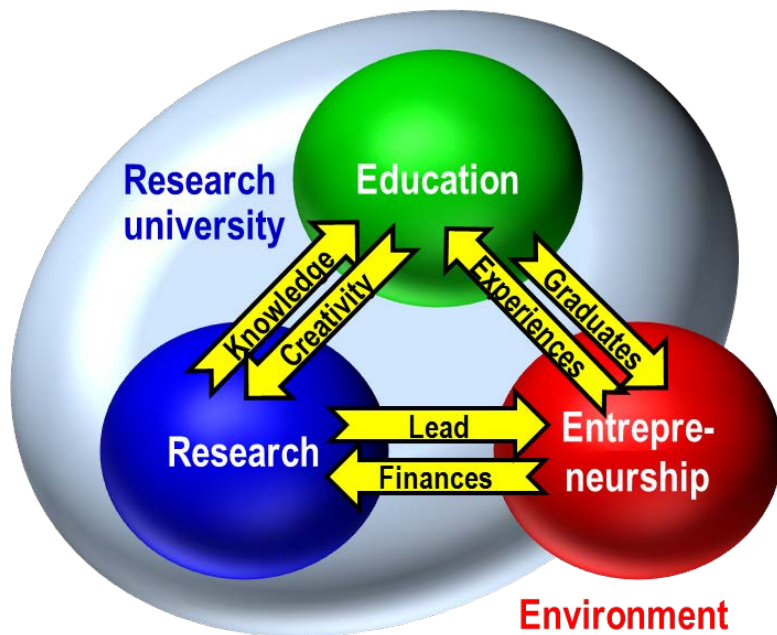


SAIV
Slovenská akadémia
inžinierskych vied



THE SCIENCE CITY BRATISLAVA PROJECT

THE COLLOCATION OF RESEARCH, EDUCATION AND ENTREPRENEURSHIP



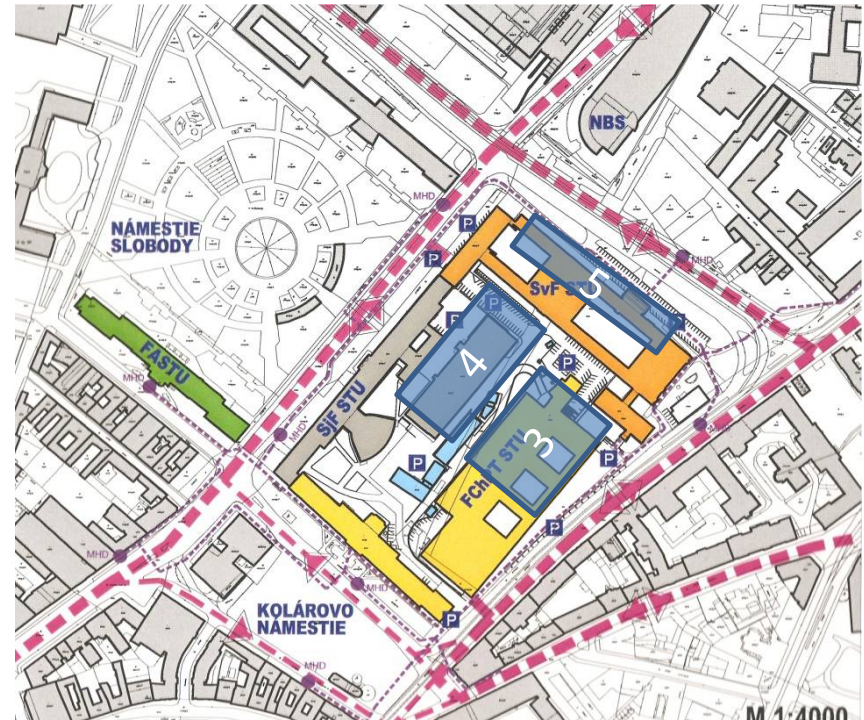
THE FIRST INVESTMENTS

- European Structural Funds (cca 100 mil. € in total)
- Computer Sciences (other 30 mil. €)
- High resolution TEM (res. 60 pm) to be deliver in February 2015



SCIENCE CITY STU BRATISLAVA - CENTRUM

- Adaptation of existing buildings; 40 000 m² laboratory and office space
- New research equipment
- Est. total investment volume cca. 100 mil. € 2007 – 2017



Research areas:

intelligent materials and technologies,
environment technology, energy,
intelligent and safe buildings

SCIENCE CITY STU BRATISLAVA – MLYNSKÁ DOLINA

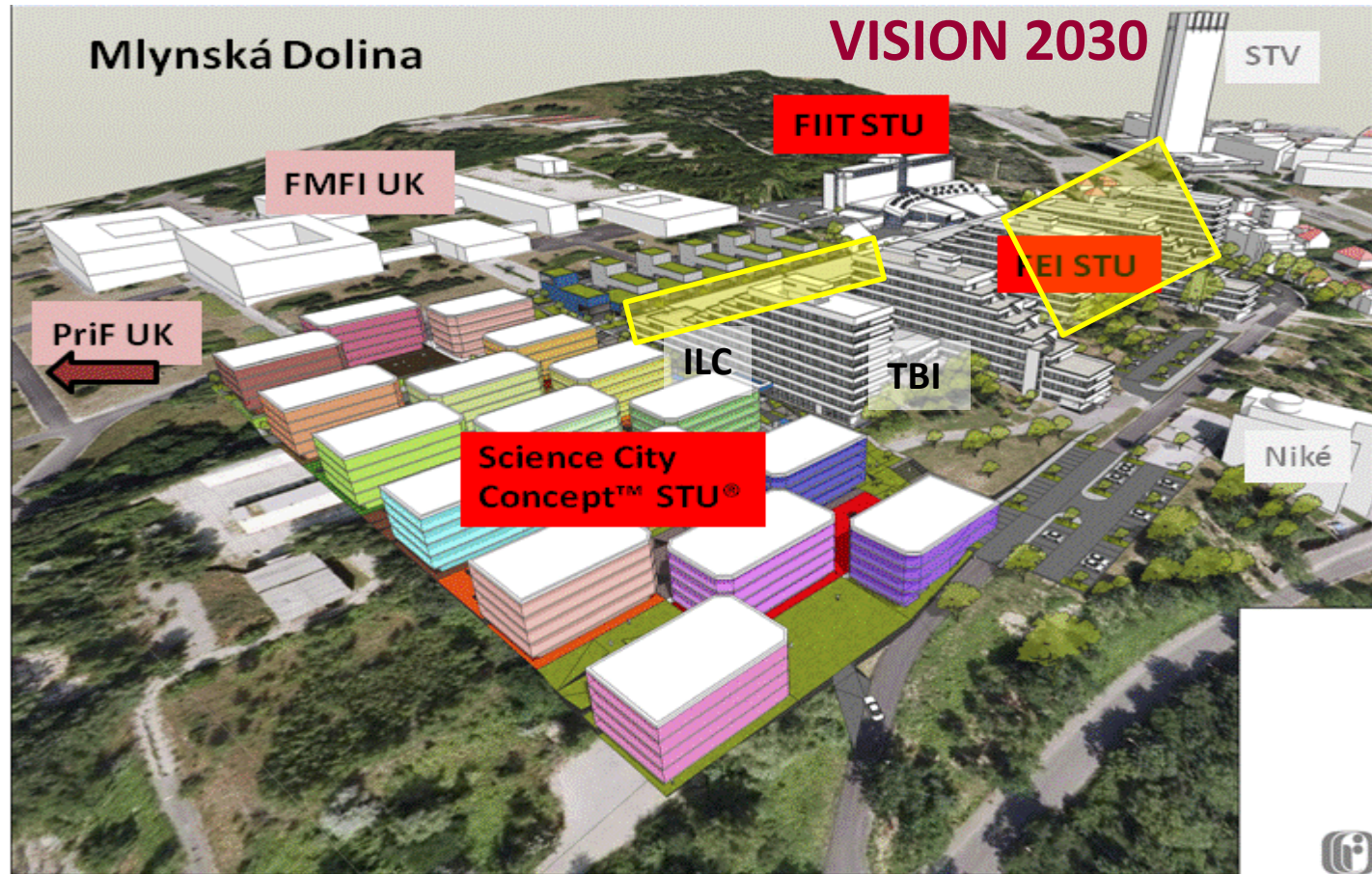
FMFI UK: Fakulta matematiky, fyziky a informatiky UK

PriF UK: Prírodovedecká fakulta UK

FEI STU: Fakulta elektrotechniky a informatiky STU

FIIT STU: Fakulta informatiky a informačných technológií STU

ILC: Medzinárodné laserové centrum

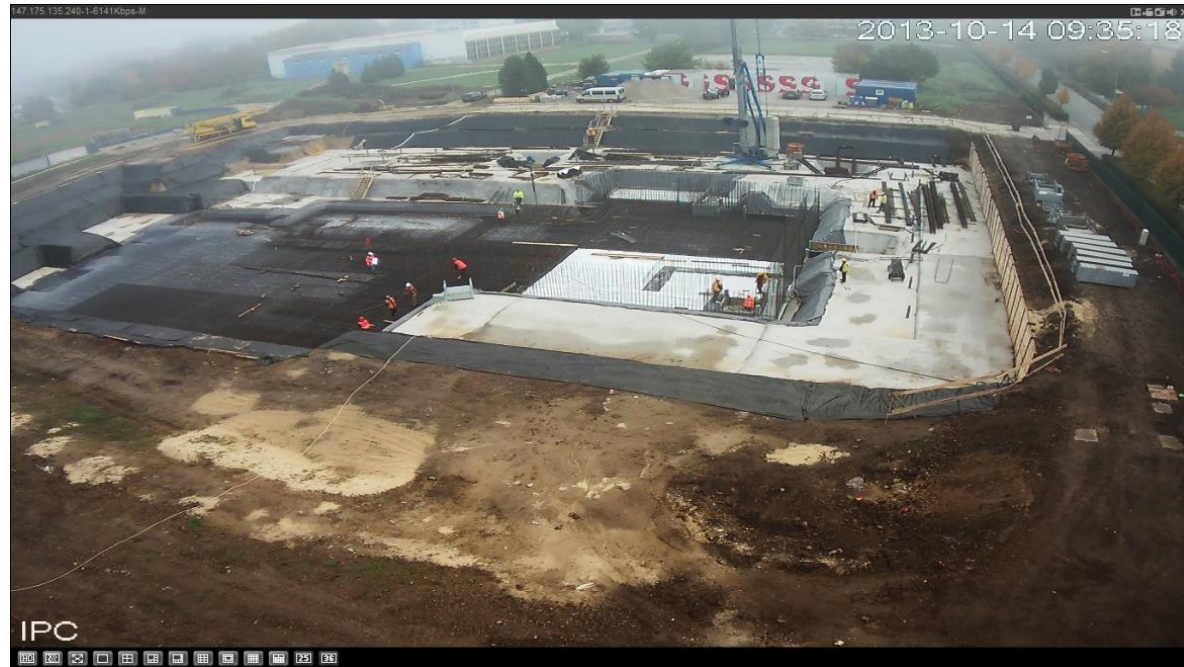


TBI: Technology business incubator II. phase STU

Science City STU – 2. phase

UNIVERSITY SCIENCE PARK STU TRNAVA

- New building with infrastructure „Slovakion“, plasma and ion technology
- New building for automation, manufacturing proceses and systems
- Est. investment volume cca 42 mil. €





SLOVENSKÁ TECHNICKÁ
UNIVERZITA V BRATISLAVE



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ROBERT REDHAMMER; 33 CONFERENCE OF RECTORS AND PRESIDENTS
OF EUROPEAN UNIVERSITIES OF TECHNOLOGY 20 SEPTEMBER 2014

