Non-university Research and Technology Transfer

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Research Institutions in the Czech Republic

- Academy of sciences (public institutes)
- Research universities (public and private)
- State research institutes (funded by individual ministries)
- Private research units (mainly industrial sector)

Private investments

- Good tradition (Bat'a, Škoda…)
- Collapse after 1989
- Examples:

  ČEZ – research funded by the Government

  MPO – special grants (success rate 80%)

The main problem of research in the Czech Republic is a lack of private funds

Main competitive money distributing agencies

- Grant agency
- Technology agency
- Internal agencies:
  - Ministry of Industry and Trade
  - Ministry of Health
  - Ministry of Environment
  - Ministry of Agriculture

State research policy

- No priorities for fundamental research
- Support of excellent research
- Infrastructure (e.g. big instruments)
- Science and technology parks and incubators for new companies
- Foundation for international patents
- Venture capital support
- Tax relieves
- International cooperation (CERN, EMBL…)

Transfer of research results to new technologies, products and profits

- No applied research without a good fundamental research
- Specialized companies
- Conflict of interests

Methodology of research results evaluation

- Scientometry (IF, citations)
- Patents (realized)
- Evaluation by independent international committees (peer review)
- Evaluation *ex ante* and *ex post*
- How to relate results to funding

Fundamental research (curiosity driven, investigator initiated)

- Reduces ignorance and fears associated with ignorance
- Makes the world intelligible
- Is integral part of the human culture
- It is the base upon which applications and innovations are built

The most important applications are not planned in advance, but generally result from progress in fundamental research

- Biotechnology: DNA structure
- Laser
- Microwaves
- Internet
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The difficulties

- Fundamental research is generally not well perceived by politicians and managers (short-term vision)
- Sometimes bad perception of science by the public (poor science culture, science is considered as a source of danger, pollution etc.)
- Decrease of interest of students (decrease of prestige, low salaries)

The challenges

- Better presentation of science to general public (mass media, science museums, exhibitions, public lectures and debates)
- Better presentation of science to political arena
- Conditions for transfer of fundamental research to profits (intellectual property, patenting, conflict of interest)
- Developing science education at all levels (primary schools, secondary schools, universities, re-qualification courses)

Importance of a good scientific education

- Permanent actualization
- Curiosity stimulation
- Critical evaluation of observations
- The art of dialogue

The main problems we have to face in the 21st century (energy, health, environment, fundamentalism) will not be solved by doing less science.

It is important to invest more in science and education!!

Czech Science in the Globalized world: challenges and Pitfalls

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Main changes after 1989

- No political influence or interference
- Academy of Sciences transformation
- Grant agency of the Czech Republic (competitive grants)
- Strengthened research in universities
- Governmental Council for Research and Development

Challenges and pitfalls

- Methods of evaluation
- Is a state research policy needed?
- Legislation
- Conditions for transfer of fundamental research results to profits

State policy in fundamental research

- No priorities
- Support of excellence
- Infrastructure (e.g. big instruments)
- Science and technology parks and incubators for new companies
- Foundation for international patents
- Venture capital
- Tax relieves
- International cooperation (CERN, EMBL…)