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Autoritatea Națională pentru Cercetare Științifică

RD&I IN ROMANIA CHALLENGES AND PERSPECTIVES

**National Authority for Scientific Research
Ministry of Education, Research, Youth and Sport**

Bucharest, 19 January 2010



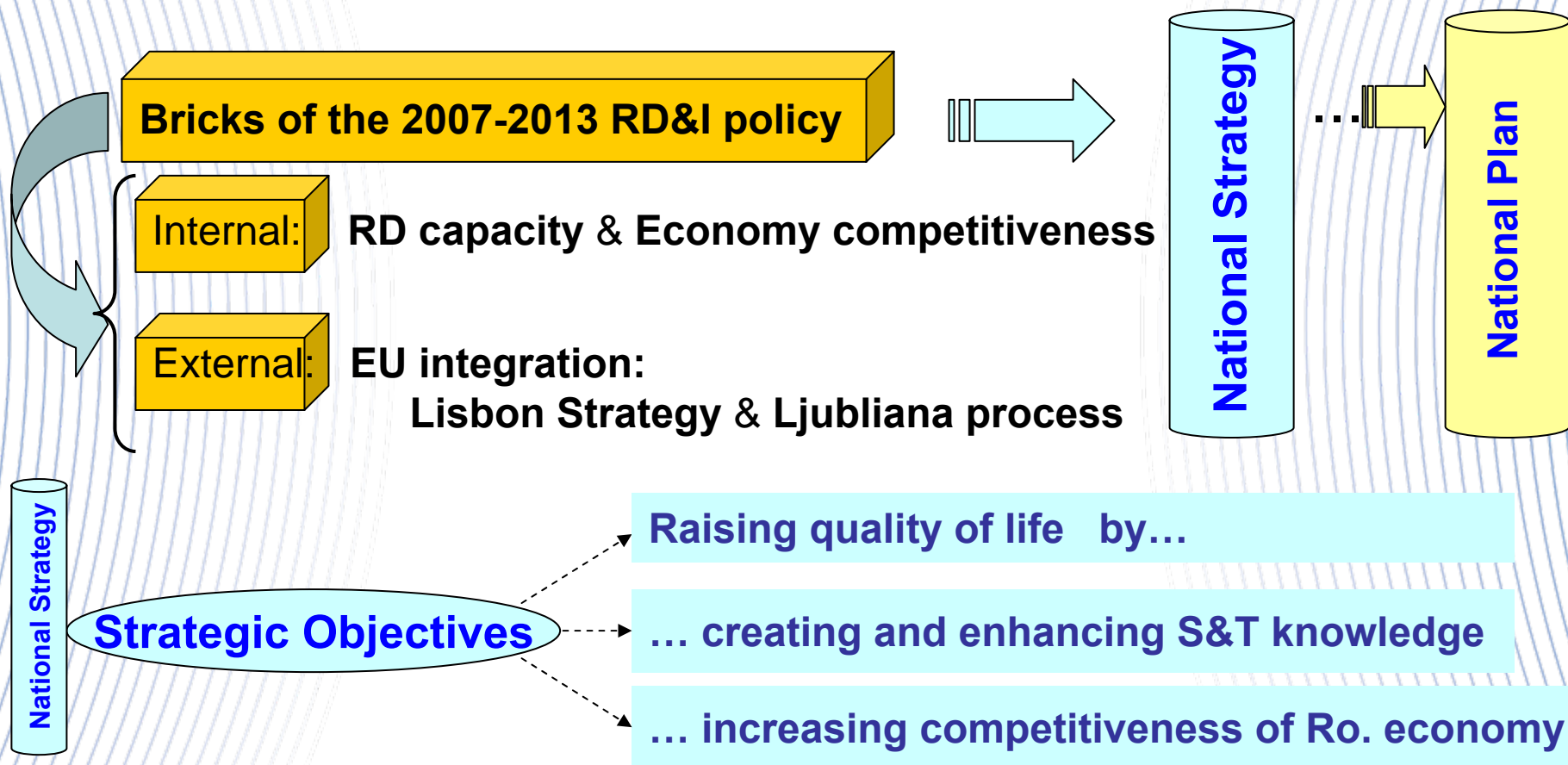
OUTLINE

RD&I in Romania: Challenges and Perspectives

- 1. National Strategy and Plan**
- 2. State of the art**
- 3. Challenges**
- 4. Running actions**
- 5. Conclusion**



National Strategy & Plan 2007-2013



Basic assumption: Towards **1%** of GDP until 2013 ?



State of the Art: achievements

- Among the **highest growth rates** in Europe of some of the indicators related to innovation (e.g. share of employees in knowledge-intensive services, organizational innovation, share of innovative enterprises)
“... Bulgaria and Romania have been improving their performance the fastest.”
(*EIS 2008-Comparative analysis of innovation performance, 2009*)
- Increase of **BERD** (but caution, because GDP diminished in 2009)
- Significant **investments in R&D infrastructure** (in the first two years '08-'09, the programme *Capacities* accounted for the **largest** share of expenditure with respect to its total, multi-annual budget)
- **New or new levels of international collaborations** (pan-European research infrastructures, candidacy to CERN, supporting the FP7 Ro partners etc.)
- Significant improvements of the **quality of human resources** (frontier research in the RO *Ideas* programme, supporting the mobility of researchers via the *Human Resources* programme and bilateral cooperation etc.)



State of the Art: achievements - international JTIs & JPs

RO: Participation in 4 JTIs:

- **ENIAC** (nanotechnologies)
- **IMI** (innovative medicines)
- **ARTEMIS** (embedded systems)
- **CLEAN SKY** (aeronautics)

RO: Intention to participation in 4 JPs:

- **HEALTH**
- **FOOD**
- **WATER**
- **CULTURAL HERITAGE**

RO: Supporting international projects

16 ERA NETs (including SEE EraNet+)

9 ESFRI projects (including ELI, FAIR)

8 ETPs (including fuel cells, photovoltaics, “Food for life”)

as well as RO candidacy to

- “Centre Européen pour la Recherche Nucléaire” – CERN



State of the Art: still to do

Increasing trends on visibility

- Scientific articles published in ISI indexed journals 5030 (2006) → ~ 9000 (2008)
- Citations 18038 (2006) → ~27000 (2008)

... **BUT** comparing to **UE-27**

- The share of researchers in total employment
35.2‰ in Romania << 92‰ UE 27 ... ~ 1/2
- The share of employees from RD activities in total employment
47.9 ‰ in Romania << 155‰ UE 27. ... ~ 1/3

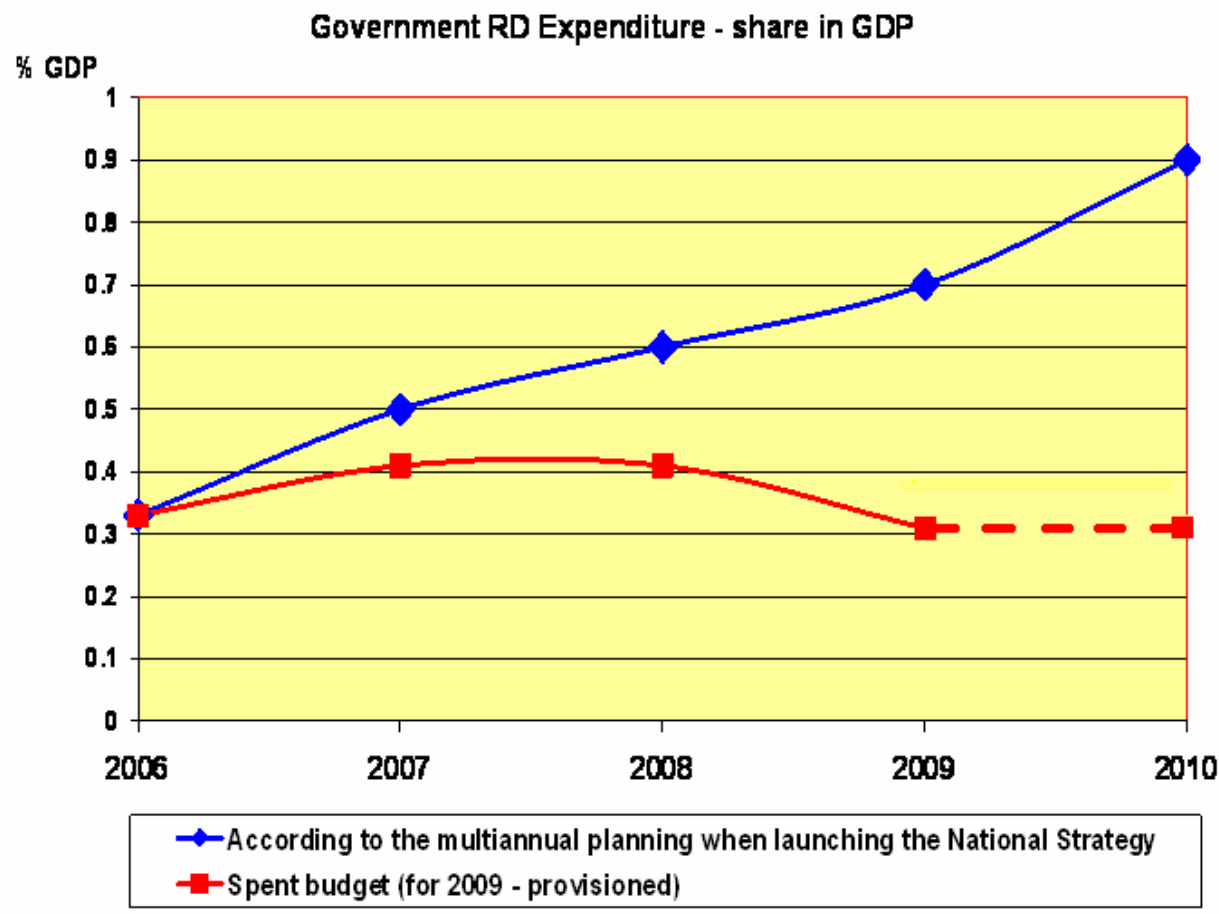
The effectiveness is obvious, **but efficiency is still low** comparing with UE-27

- The share of Hi Tech exports in total exports
3.80% in Romania << 15.96% UE 27 ... ~ 1/4
- The share of personnel working or with tertiary education in ST fields in total employment
22.97% in Romania << 39.25% UE 27.
- The share of employees in Hi-Tech and Mid-Tech manufacturing in total employment
5.66% in Romania < 6.69% UE 27 ... close enough
- The share of employees in knowledge based services in total employment
14.40% in Romania << 32.94% UE 27. ... ~ 1/2



Challenges public funding

- **Global crisis led to public under-financing**
- **Sub-optimal functionality of some public RD institutions** - e.g. project and programme monitoring, lack of integrated info system dedicated to RD activities, resources, and outputs.
- **Sub-optimal functionality of ReNITT**
- **Provisioned effects upon unemployment, so that the competition for Hum.Res. in S&T will increase**



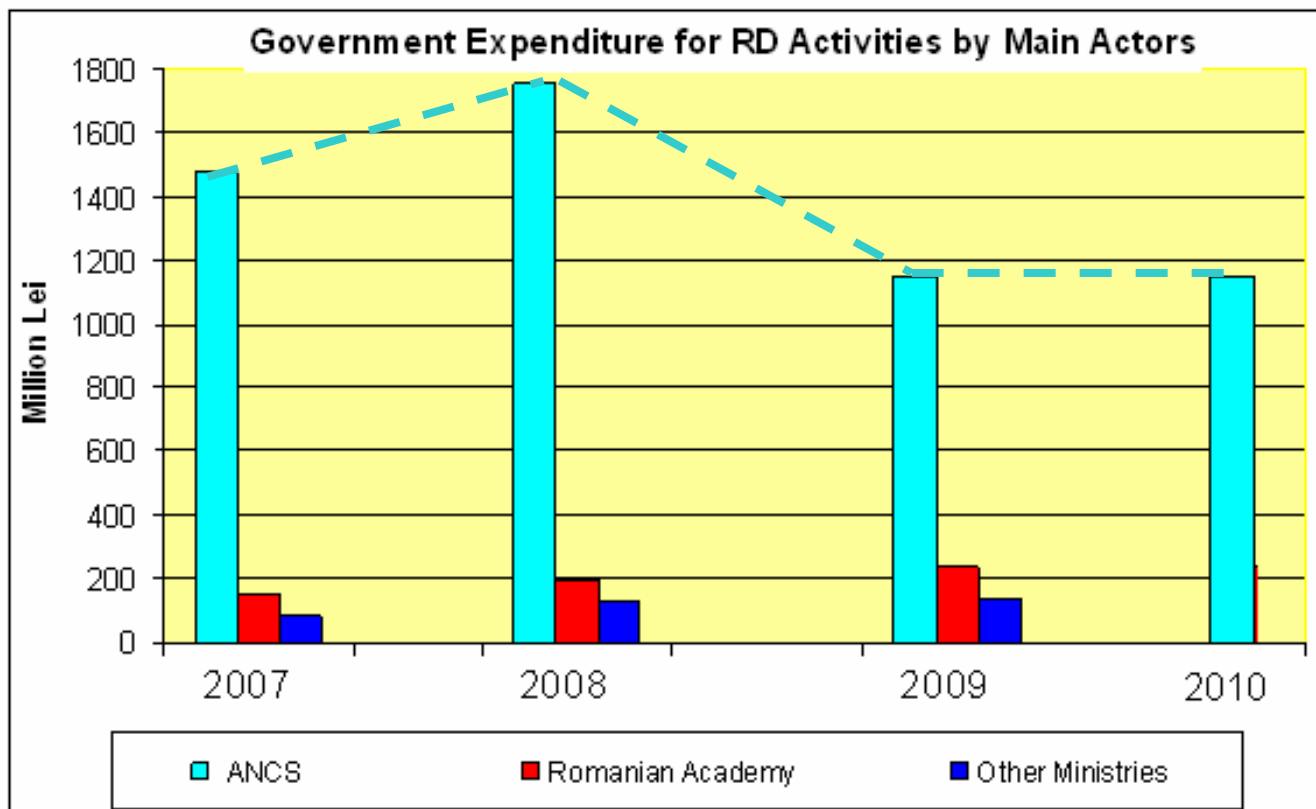


Challenges: public funding

Political decision
on diminishing the
share of ANCS in
public financing has
to be balanced by:



- Improving the **efficiency** of RD expenditure
- **Competing** for other financing sources: private, EU, Asian etc.
- Improving the **public acceptance** for research & innovation



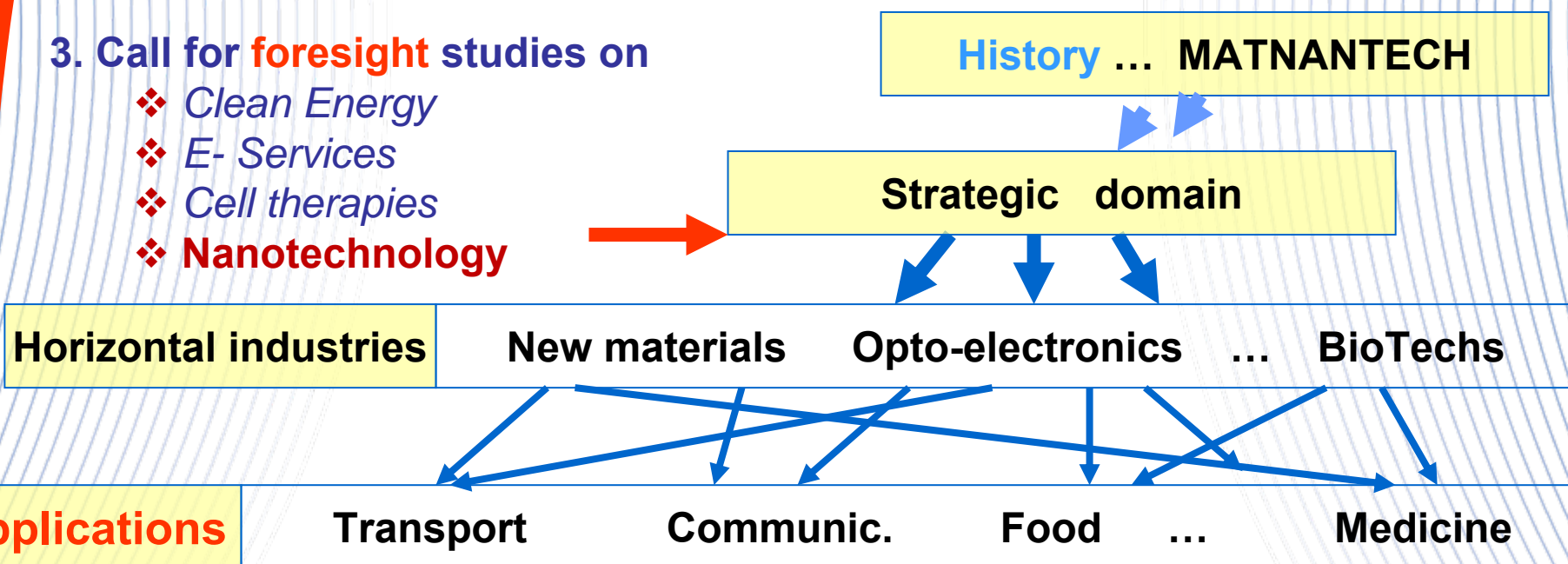


Running actions 2010

1. Fiscal incentives: **120%** deducibility for **R&D expenditure**
2. **Mid term evaluation** of the National Plan – provisioned consequences
 - Focus on **efficiency** of R&D investment
 - Domains oriented to those with **economic demand**
 - AND / OR**
 - with **existing RO competences** (critical mass, int. partnerships, etc.)
 - Appropriate **monitoring** (plan, programme, projects)

3. Call for **foresight** studies on

- ❖ *Clean Energy*
- ❖ *E- Services*
- ❖ *Cell therapies*
- ❖ **Nanotechnology**





Conclusion

Following the foresight study in nanotechnology we expect to find more on some evaluation criteria of the domain as:

- ❑ R&D performance & visibility:**
 - patents, scientific publications, international partnership

- ❑ Collaboration with industry:**
 - technology transfer, attracting private funds from the international market



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***Thank
you !***