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Slovenian Presidency of the EU 2008
La Présidence slovène de l'UE 2008



Republic of Slovenia
Ministry of Higher Education, Science and Technology

RESEARCH CENTRES OF EXCELLENCE IN SLOVENIA:

A new instrument of science and technology policy, established in the context of EU Structural Funds – synergies between national and EU policies

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Research in Support of Policies, Joint Research Centre Information Day in the Republic of Slovenia, EU – JRC and MHST, Ljubljana, 26 May 2008

Structure of presentation

- 1. Basis for activities of Centres of Excellence in EU Structural Funds**
- 1. Research Centres of Excellence and their results up-to-date**
- 2. Present and future developments**

Basis for activities of Centres of Excellence: Situation at the beginning of Slovenian participation in EU Structural Funds

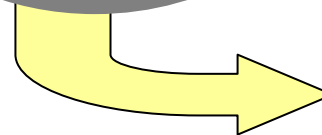
Main reasons for lagging behind of competitiveness of Slovenian economy:

- relatively low private investments in R&D and innovation
- feeble cooperation between companies and knowledge institutions (transfer of knowledge)
- weak networking and clustering, underdeveloped institutional environment for innovation and competitiveness

Other weaknesses in the field of R&D:

- insufficient investment in applied and development research
- lagging behind in excellence of publications
- **DISPERSED FINANCING (NO PRIORITIES)**
- small research groups, not enough integration in the sphere of R&D
- unsatisfactory educational structure of researchers in the business sector
- lagging behind in research infrastructure (national budget: 4 mio eur per year)
- unsatisfactory system of assessment and evaluation
- weak response to Centres of Excellence in FP 5

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Basis for activities of Centres of Excellence in EU Structural Funds - II

GOALS:

- more effective transfer of knowledge:
 - ☺ new products, services and processes with high value added;
 - ☺ new dynamic high-tech companies
- improved co-operation between knowledge institutions and business companies
- increased investment in applied research in priority RTD areas:
 - top-down* & *bottom-up approach*
 - 5 areas: ICT, new materials, biotech & pharm, process manag., sustain. dev. (environm.)
 - quality of partnership (30% of total score) and of project proposal
 - mandatory co-financing by private comp.



RESEARCH CENTRES OF EXCELLENCE:
new, innovative instrument of S&T policy

CoE = a high quality multidisciplinary group of researchers both from academic and business spheres, combining a critical mass of knowledge and adequate research infrastructure for potential breakthrough of this centre onto the top of world science or into international networks of excellence.

Basis for activities of Centres of Excellence in EU Structural Funds - III

Technology Mapping study (IER; Ministry of the Economy & MoESS, 2002 - 2003) aimed at identifying priority RTD areas: »Analysis of key technologies and possibilities of developing technological networks in Slovenia«. Proposal of 5 priority areas: biotechnology and pharmacy, new materials, environmental technologies, information and communication technologies, processes management technologies.

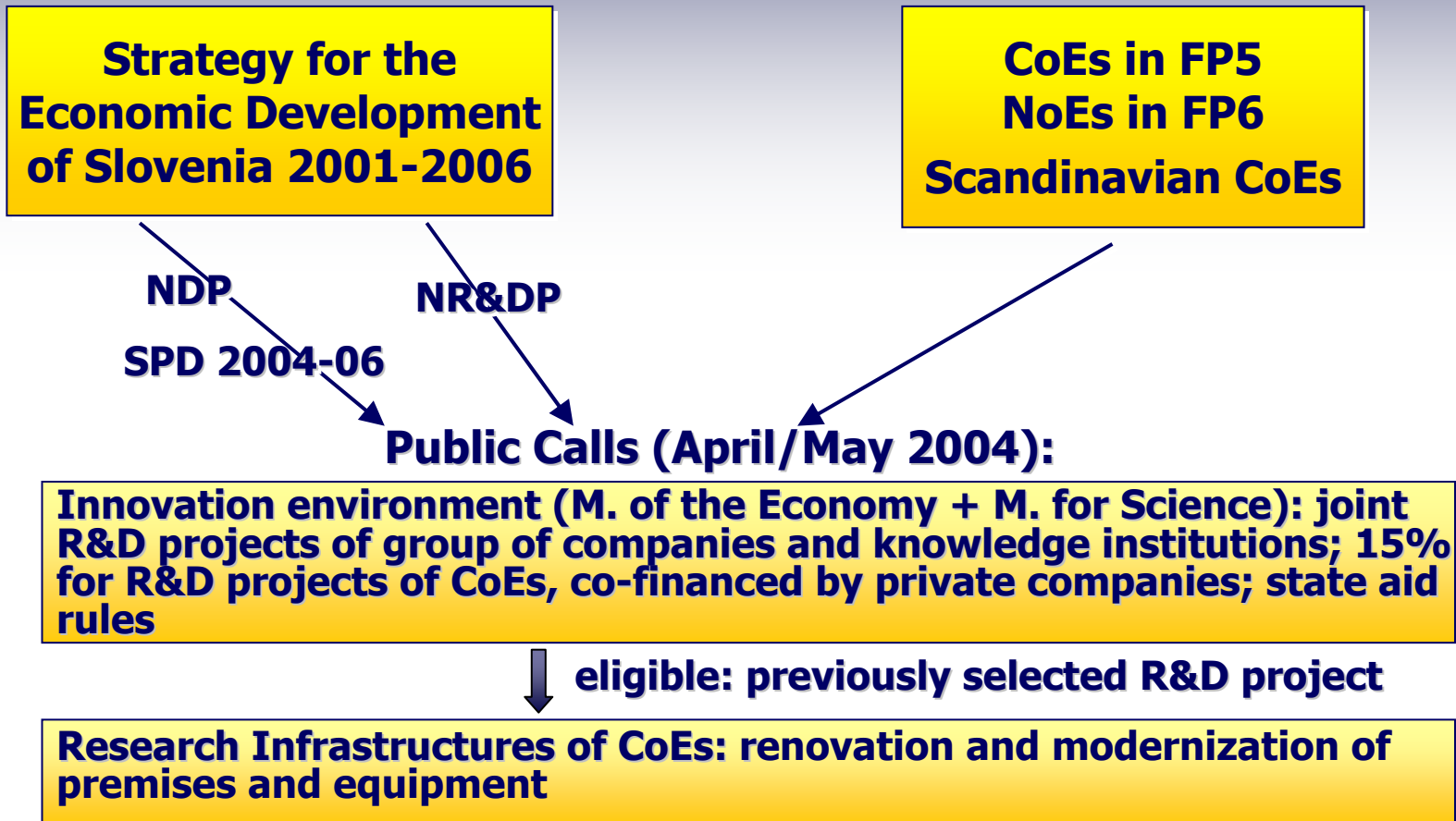
Establishment of Technology Networks (Ministry of the Economy) in 2003, in the following areas:

- **biotechnology and pharmacy,**
- **new materials and ecology,**
- **information and communication technologies,**
- **processes management technologies.**

Technology network is a new institution that brings together the most influential actors from academia and industry. They are focused on core technologies that have high potential impact for the growth of the economy; moreover, they are important for well being of whole population.

2003 - 2004: preparation of strategic documents for TN's, definition of priorities at micro level.

Basis for activities of Centres of Excellence in EU Structural Funds – IV



DEVELOPMENT OF THE CONCEPT AND ITS IMPLEMENTATION:
2003-2004: Dr. Darja Piciga
Dr. Zoran Stančič

2005-2008: Dr. Darja Piciga
Office for Dev.Pol. & SF (MHST)
Sistem for SF (Slovenia)

List of Centres of Excellence (with funds from ERDF)

CENTER OF EXCELLENCE (started to operate 2004-2006)	No. of R&D projects	R&D projects (in 1000 EUR)	RI (in 1000 EUR)	Total (in 1000 EUR)
MATERIALS FOR ELECTRONICS OF NEXT GENERATION AND OTHER EMERGING TECHNOLOGIES (ME)	5	906	1.422	2.328
NANOSCIENCES AND NANOTECHNOLOGIES (N&N)	6	1.106	1.461	2.566
STUDIES OF STRUCTURE AND INTERACTIONS IN BIOTEHNOLOGY AND PHARMACY (NMR CoE)	1	334	1.461	1.794
SUPERCRITICAL FLUIDS (SCF)	1	335	793	1.128
ENVIRONMENTAL TECHNOLOGIES (ET)	3	876	793	1.669
INFORMATION AND COMMUNICATION TECHNOLOGIES (ICT)	6	668	626	1.294
ADVANCED CONTROL TECHNOLOGIES (ACT)	6	341	569	911
BIOTECHNOLOGY WITH PHARMACY (BP)	2	563	741	1.305
ADVANCED METALLIC MATERIALS (AMM)	2	791	720	1.511
F.A.B.R.I.C.A.	1	334	0	334
TOTAL	33	6.253	8.585	14.839

Centres of Excellence: RESULTS

- **Upgrading existing co-operation (knowledge institutions - business companies; intrasectorial)**
- **New partnerships (particularly ET, N&N)**
- **50 companies as active partners, another 100 co-operating**
- **Hundreds of top-level researchers**

- **Scientific excellence**
- **International dimension strengthened**
- **Contributions to higher education**

- **Contributed to >200 innovations and patents**
- **New technologies, products, services**
- **New workplaces created**

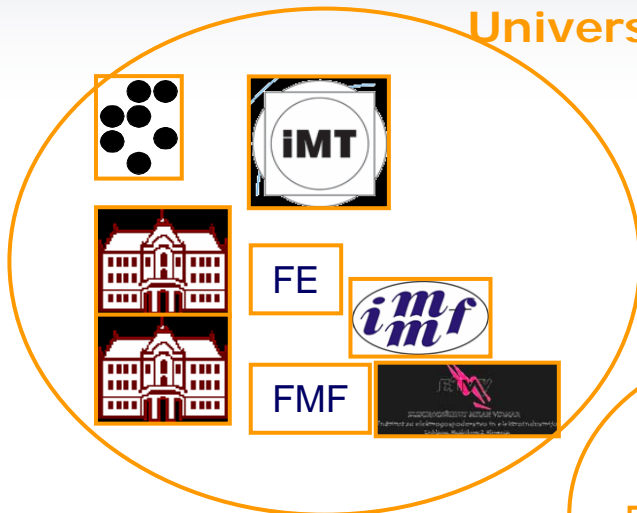
INCREASED: S&T COMPETITIVENESS
ECONOMIC COMPETITIVENESS



TOP-LEVEL RESEARCH INFRASTRUCTURES

Center of Excellence
“MATERIALS FOR THE ELECTRONICS OF THE NEXT GENERATION AND OTHER EMERGING TECHNOLOGIES”
Prof. Dr. Marija Kosec, JSI

Research Institutes and Universities



Interfaces



Large companies



SMEs



CoE ET – Consortium Partners

Center of Excellence
Environmental technologies

Biological methods
for purification of
waste waters

U Lj BF
U Lj MF
U Lj FCEG
U NG Politehnika
National Institute of Chemistry
National Institut for Biology
Esotech d.d.
Limnos d.o.o.
KP Velenje d.o.o.
JP Okolje Piran d.o.o.
Helios Domžale d.o.o.
Lek d.d.
Euroinvest d.o.o.
Cinkarna Celje d.d.
Inštitut za vodarstvo d.o.o.
RACI d.o.o.
Salonit Anhovo d.d.
Fructal d.d.

Recycling and re-
use of waste

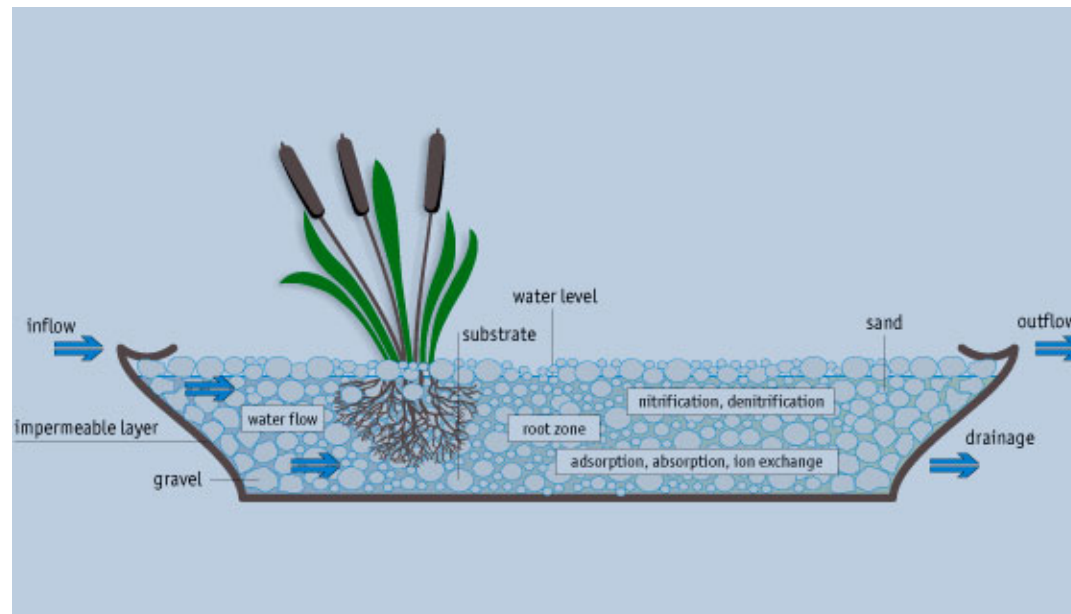
U Mb, FKKT
National Institute of Chemistry
National Institut for Biology
Esotech d.d.

Eco-remediation
technologies

Slovenian Forestry Institute Lj
Limnos d.o.o.
Erico
Central Municipal Wastewater Purification Plant
Domžale d.o.o.
NEK d.o.o.
Aquasystems d.o.o.
KP Velenje d.o.o.
JKP d.o.o.
Vrhovšek s.p.
PV Invest d.o.o.
Omorika d.o.o.

CoE ET - Results

- Biological method for purification of waste water



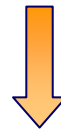
CoE Biotechnology with Pharmacy

RESULTS 2004-07

- **Building and establishment of the Centre for Functional Genomics and Biochips - CFGBC**
- **Purchase of partial equipment for genomics, proteomics, metabolomics and cell biology**
- **Contribution to establishment of Novartis R&D Biopharmacy Centre**
- **First Slovenian biological drugs – biopharmaceuticals**
- **First Slovenian DNA microarrays (bio-chips)**
- **First transgenic mouse in Slovenian research**
- **480 peer-reviewed papers in international journals**
- **30 international patents**

Lessons learned

- ❖ **CoE activities: too complex (R&D projects!)**
- ❖ **Permanent changes in the system of management and control of SF; too complex**

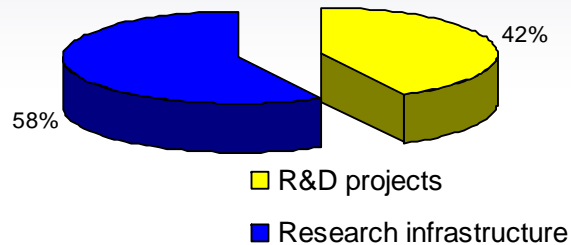


- ❖ **Simplification of procedures for selection of projects, management and control:**
 - ☺ **less complex Application Form and Instructions**
 - ☺ **not State aid**
 - ☺ **maximum 2 R&D projects per CoE**
 - ☺ **minimum eligible cost**
 - ☺ **smaller share of funds for R&D projects**

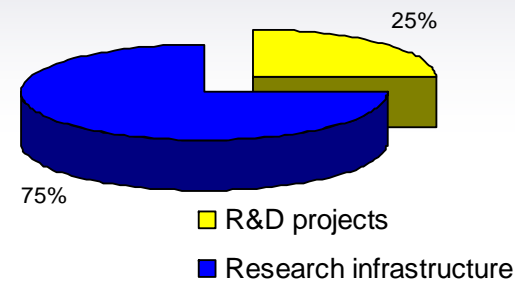
Distribution of funds

Distribution by type of activity

2004 – 2006
14.8 mio EUR

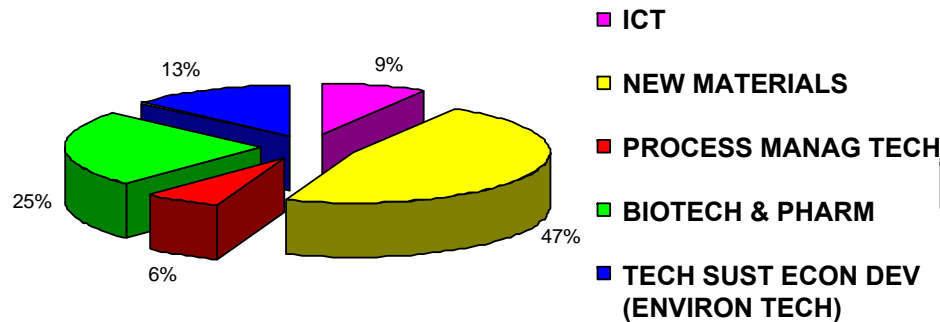


2007-2013 (planned)
84.3 mio EUR

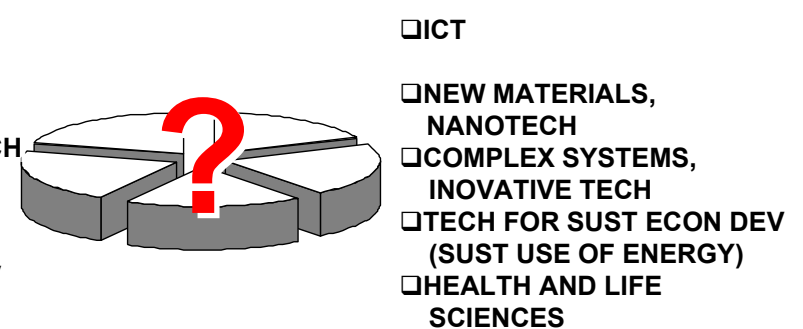


Distribution by priority field - Competitiveness Council?

2004 – 2006



2007 – 2013






Present and future developments ...

(2007 – 2008) 2008 →

- **Final payments, claims for reimbursement**
- **Final reporting for the CoEs**
- **Preparation of new programmes for 2007-2013 period**
- **International evaluation of final reports and programmes (new methodology)**
- **Public Calls for R&D projects and RIs**

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-  **3 - 4 new Centres of Excellence; CoE for sustainable use of energy**
-  **Time for daring ideas, ambitious plans !!!**
-  **Technologies for 3rd industrial revolution ???**

Thank you for your attention !