

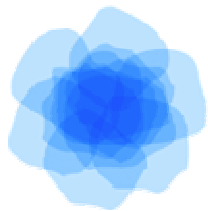
CREST Meeting, Azores, 20 July 2006

# A Commitment to Science for the Future of Portugal

Luis Magalhães

President of Knowledge Society Agency

Ministry of Science, Technology and Higher Education



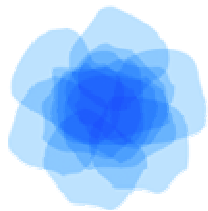
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# A Commitment to Science

Launched by Prime Minister in Parliament 29 Mar 2006

## Targets for 2009

- To reach 5.5 researchers (FTE) per thousand of active population (in 2003, 3.5 in Portugal and 5.5 in UE25)
- To raise to 1,500 the number of new doctorates per year, with a higher increase in S&E (1,000 in 2003)
- To increase by 50% the scientific publications recognised internationally (to reach 600 publications per million inhabitants each year from 400 in 2003)
- To multiply by three the number of patents registered in the EPO and in the USA PO

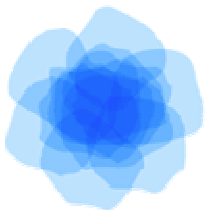


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# A Commitment to Science

To reach the preceding targets the following human and financial resources goals have to be achieved:

- To increase by 50% the number of Higher Education students graduating per year in science and engineering
- To double the public investment in scientific research to reach 1% of GNP (0.5% of GNP in 2003)
- To multiply by three the private investment in R&D (only 0.24% of GNP)



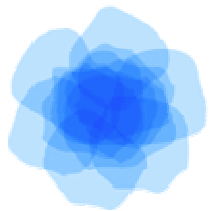
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## Orientations

To strengthen:

- Knowledge and scientific and technological competences measured at the highest international level
- Human resources and scientific and technological culture
- R&D institutions (public and private) reinforcing their responsibility, organization and network infrastructure
- Internationalisation, high performance and evaluation
- Obtaining economic value from research



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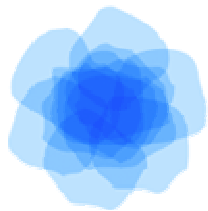
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## Measures

Call of proposals for program-contracts with R&D institutions for hiring of at least 1,000 researchers up to 2009 (500 up to end of 2007) through open competition and international evaluation (opened in April 2006)

Decision to increase by 60% number of PhD and Post-Doc fellowships publicly awarded each year

Legislative measures for supporting scientific and technical highly qualified immigrants, assuring competitive conditions of entry, settlement and family regrouping



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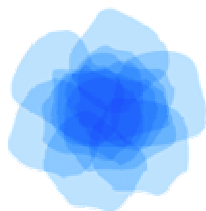
## Measures

Anticipation to Sep 2006 of the possible starting dates for fellowships of the 2006 call (previously scheduled for Jan 2007)

Creation of a new type of fellowships for integration of university students in R&D centers and institutes (beginning 2007/08 with 5.000 fellowships )

Creation of Invited Chairs Program (50 up to 2009)

Clinical Research PhD program (300 up to 2009)



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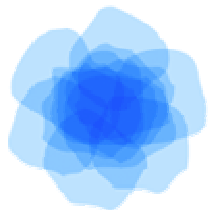
## Measures

Promotion of new research groups and attraction of researchers working abroad, **by competitively awarding R&D grants for 5 years**

Strengthening of the *Ciência Viva* Program, fostering the S&T culture of students and families

Creation of a program for R&D projects oriented to public policies **(natural and environmental risks, forest fires, epidemics, social transformations, ... )**

Promote the registry of international patents



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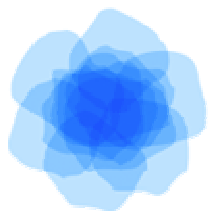
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## Measures

Strengthening the program of R&D projects in partnership between R&D institutions and enterprises

In the enterprises where the state is a share holder, assure that the R&D investment is in line with that observed internationally for the respective sectors, **on the average about 3%**

In large public investments, the involved companies will be required to apply between 0.5% and 1% of the total investment in R&D to be realized in Portugal





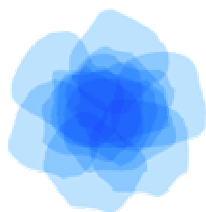
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## Measures

Reintroduction of ambitious tax benefits scheme for enterprise R&D (decided in 2005)

New Technological Enterprises Program (108 projects supported: 54% ICT, 12% Agrifood Biotech, 11% Health Biotech, 5% other Biotech, 8% others)

Technology and Knowledge Transfer Workshops Program (22 approved, including in all 14 public universities)



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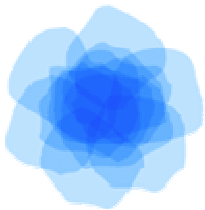
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## Measures

Networks of Competence Program (9 approved, involving enterprises, research centres, universities, industrial associations, public bodies:

- Telecommunication and Information Technologies
- Mobility
- Agro-forestry and Food
- Bio-Energy
- Health Care and Medicine
- Mould Micro-Machining
- Polymers
- Dematerialization of Transactions,
- Fashion)

They involve 158 entities, including 87 enterprises



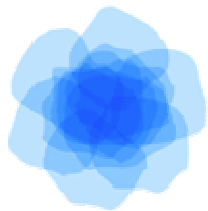
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## Measures

Program of Thematic Research Networks, aiming at the integration of capacities, advanced training, demonstration, diffusion and international cooperation, **in topics such as:**

- Energy
- Transportation and logistics
- Production, specially automobile, aerospace and mold industries
- Telecommunication and information networks
- Software engineering
- Robotics and critical infrastructure networks
- Digital contents and multimedia
- Biosciences, biotechnology and biomedicine



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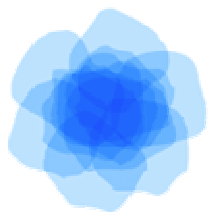
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## Measures

Reform of National Laboratories (5 extinguished or integrated in other institutions, 2 created, 4 Lab partnerships created: BIO, NPhys, RISKS, Ocean)

Decision to create an International Vulcanology Lab in Azores

Decision to create a Natural Risks Research Lab



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## Partnerships for the Future

### Building Ambitious International Knowledge Networks

#### Examples:

#### MIT – Portugal Programme (11 Oct 2006)

Engineering Design and Advanced Manufacturing, Energy Systems, Transportation Systems, Bioengineering Systems.

Also with *Sloan School of Management*: International MBA and *Lisbon-Sloan Seminar Series in Management Science*.

Involves 6 universities, 6 Associate Labs, 1 National Lab, VW-Autoeuropa, EADS-CASA and 10 Portuguese companies mostly SMEs



#### CMU – Portugal Programme (27 Oct 2006)

Software Engineering, Information Networking, Information Security, Critical Infrastructures and Risk Assessment, Language Technology, Technical Change and Innovation, Mathematics.

Includes the creation of an international virtual institute: the *Information and Communication Technologies Institute (ICTI)* operating first with two nodes, *ICTI@Portugal* and *ICTI@CMU*.

Involves 11 universities, 4 Associate Labs, Portugal Telecom, Siemens Networks Portugal, Novabase SA and 16 SMEs



# A Commitment to Science

## Partnerships for the Future

### Building Ambitious International Knowledge Networks

#### Further examples:

##### **UT Austin – Portugal Programme** (2 Mar 2007)

Digital Media, Advanced Computing, Mathematics.

Includes the creation of an international virtual institute: the *International Collaboratory for Emerging Technologies (CoLab)* operating first with two nodes, *CoLab@Portugal* and *CLab@UTAustin*.

Involves 15 universities, 3 Associate Labs, 4 Science and Technology Parks, 9 SMEs.



##### **Harvard – Portugal Programme** (16 Apr 2007)

Biomedicine and Health Care Content. Signed MoU for assessment phase with

Harvard Medical School. Will involve Universities, Associate Labs, large and SMEs.

##### **Fraunhofer – Portugal Programme** (18 Apr 2007)

ICT, Biotechnology, Nanotechnology, Advanced Manufacturing Engineering, Logistics.

Signed MoU for assessment phase with *Fraunhofer Gesellschaft*.

One objective is the creation in Portugal of the 1<sup>st</sup> Fraunhofer Institute outside Germany (on *Technology, Applications and Services for Ambient Assisted Living*).

Will involve Universities, Associate Labs, large and SMEs.

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## Partnerships for the Future

### Building Ambitious International Knowledge Networks

#### Further example:

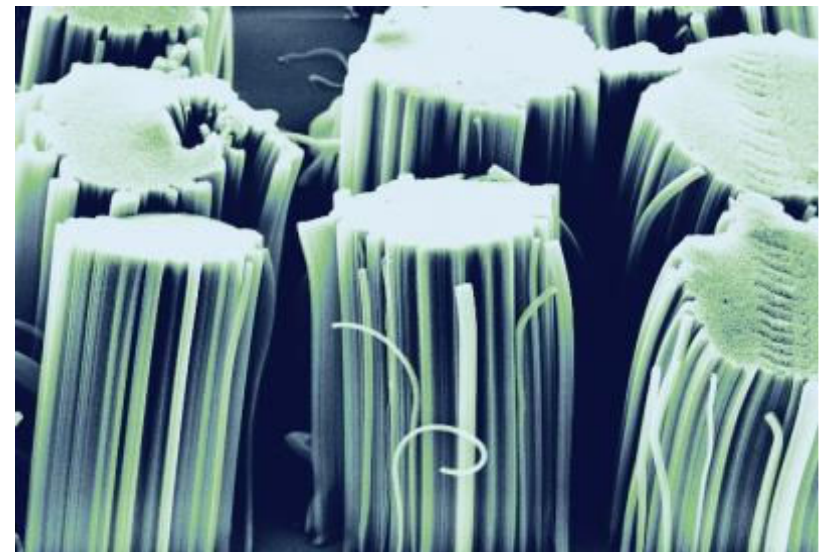
#### **International Iberian Nanotechnology Laboratory** (19 Nov 2005)

Nanomedicine (drug delivery, nanotechnology for diagnostics), Environmental Applications, Food Quality Applications, Electronic Devices. 200 researchers.

International research organization of multilateral character whose joint creation was decided by Spain and Portugal governments at the Spain-Portugal Summit of 2005. Convention signed in Summit 2006 (25 Nov 2006).

*“The ambition of both countries is to create a research site of world scale relevance, capable of attracting scientists and technicians from all points of the world”*

*José Mariano Gago, Minister of Science, Technology and Higher Education, Portugal*



*Figure: Carbon nanotubes*

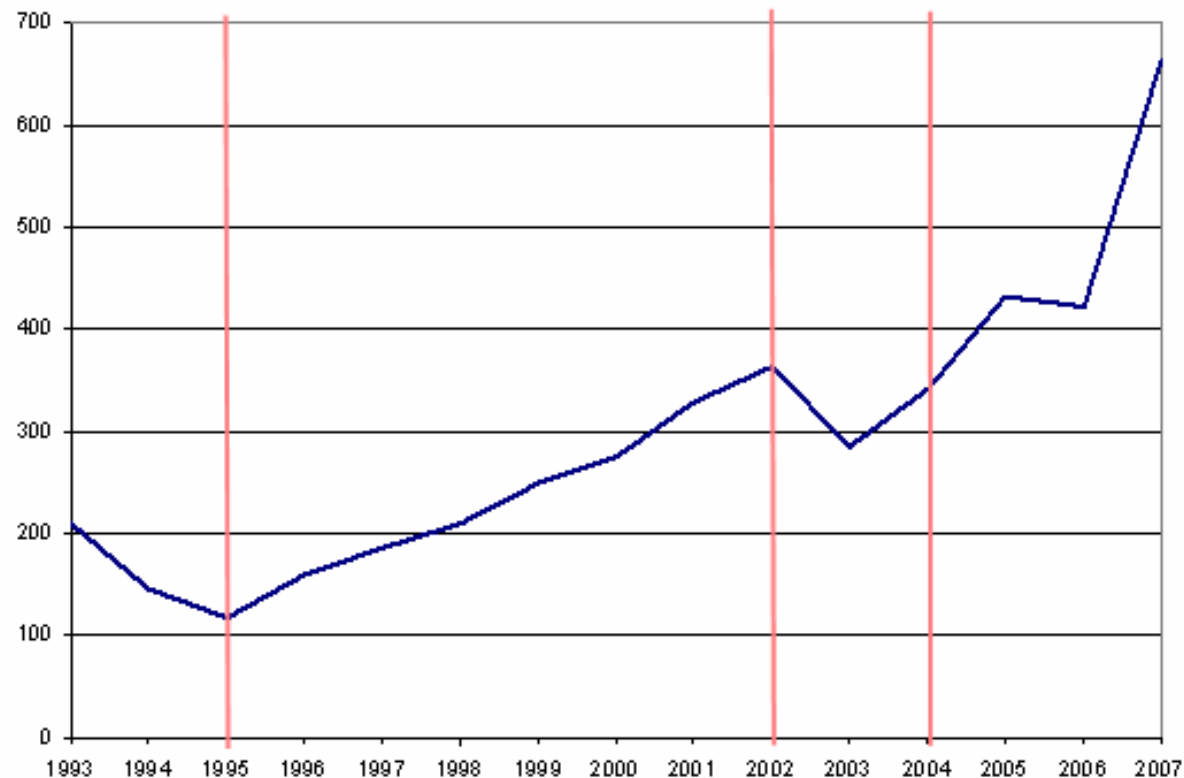
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## Measures

Reinforcement of the S&T budget for 2007 with 250 M€  
(app. 62% increase from 2006 to 2007)

Increase of 15% from 2007 to 2008

Budget of Competitive Public R&D Funding Agencies (M€ of 2007)  
(JNICT/FCT+ICCTI+GRICES+UMIC)

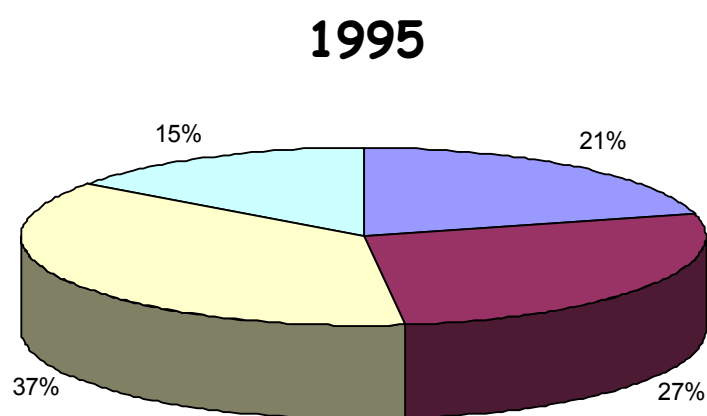




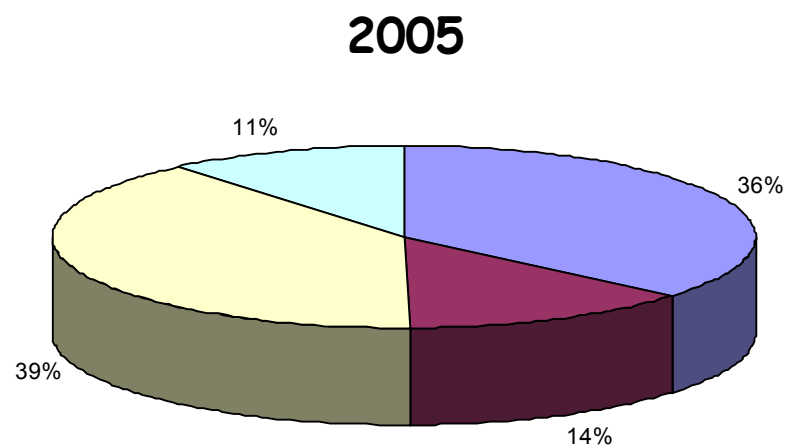
# Radically Shifting Share of the GERD from the State to Enterprises

**Enterprises share in GERD grew 71% from 1995 to 2005,**  
a structural reform of the GERD allocation of a magnitude unique in EU

Share of GERD by Enterprises, State, Higher Education, NonProfit Inst.

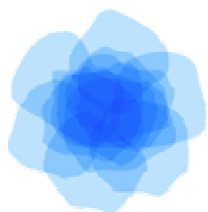


■ Empresas ■ Estado ■ Ensino Superior ■ IPSFL



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Source: Eurostat



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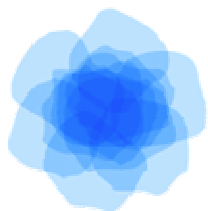
# Presentations in The Future of Science and Technology in Europe High Level Conference

Lisbon, 8-9-10 October 2007

Internet site of Ministry of Science, Technology and Higher Education

<http://www.mctes.pt/index.php>

Including Conference Overview by Peter Tindemans of EuroScience



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