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# Challenges to the stimulation of technology transfer in Portugal

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Workshop “Stimulating Knowledge Transfer: Challenges and Policy Responses”  
Lisboa, November 7<sup>th</sup>, 2017

## 1) INCENTIVE SCHEMES TO FOSTER INDUSTRY-LED COLLABORATIVE R&D

- FINANCIAL INCENTIVES: DEMAND-BASED DYNAMICS
- CONSORTIA COMPLEXITY
- NEWCOMERS AND START-UPS

## 2) NEW INSTRUMENTS TO ACT ON KNOWLEDGE TRANSFER: THE ROLE OF INTERFACE ENTITIES

## 3) PEOPLE: MOBILITY AND RETENTION OF QUALIFIED HUMAN RESOURCES

## 4) CONCLUSIONS

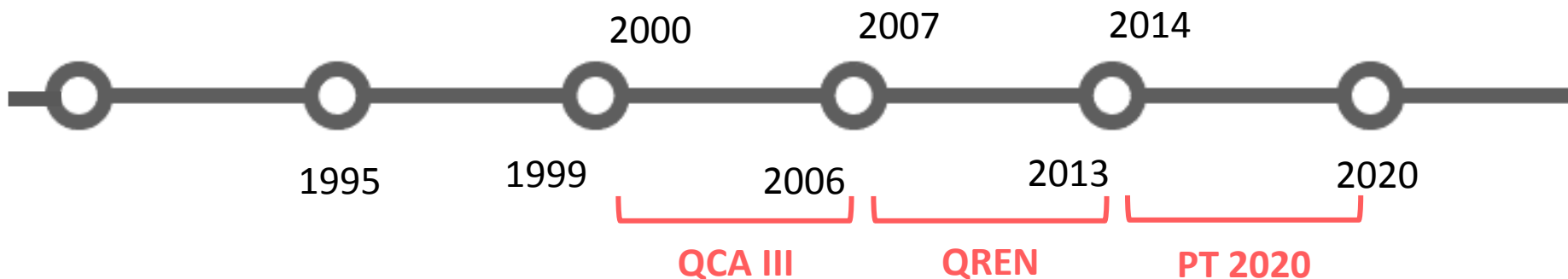


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# Working on Knowledge Transfer: Incentives to Industry-led collaborative R&D

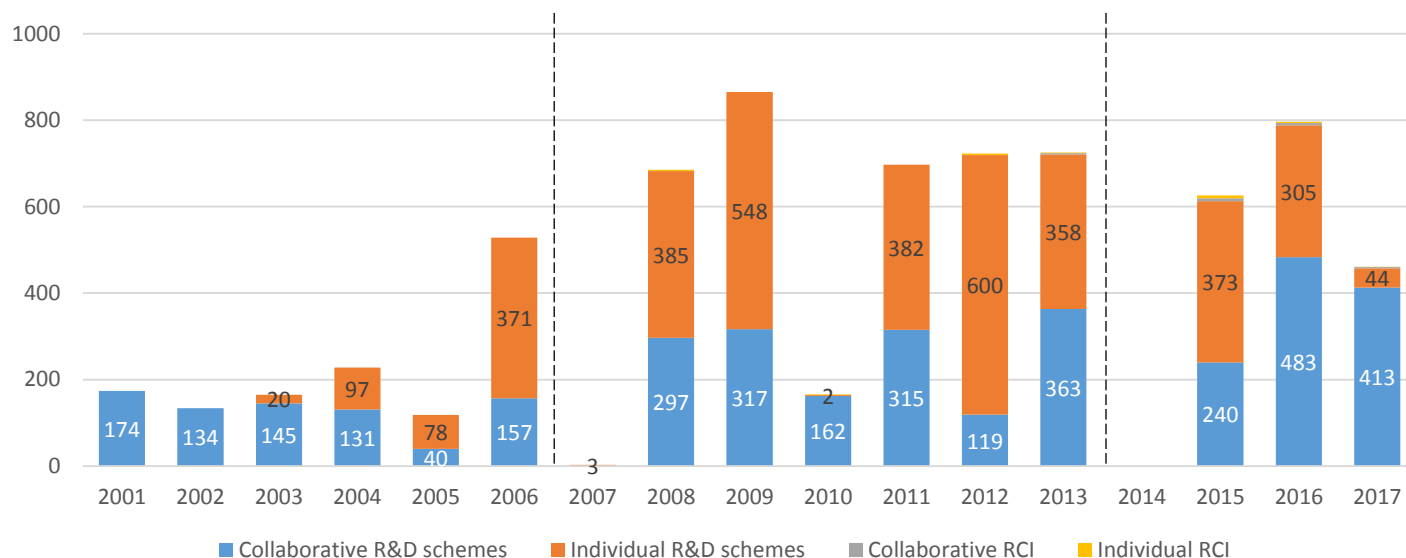
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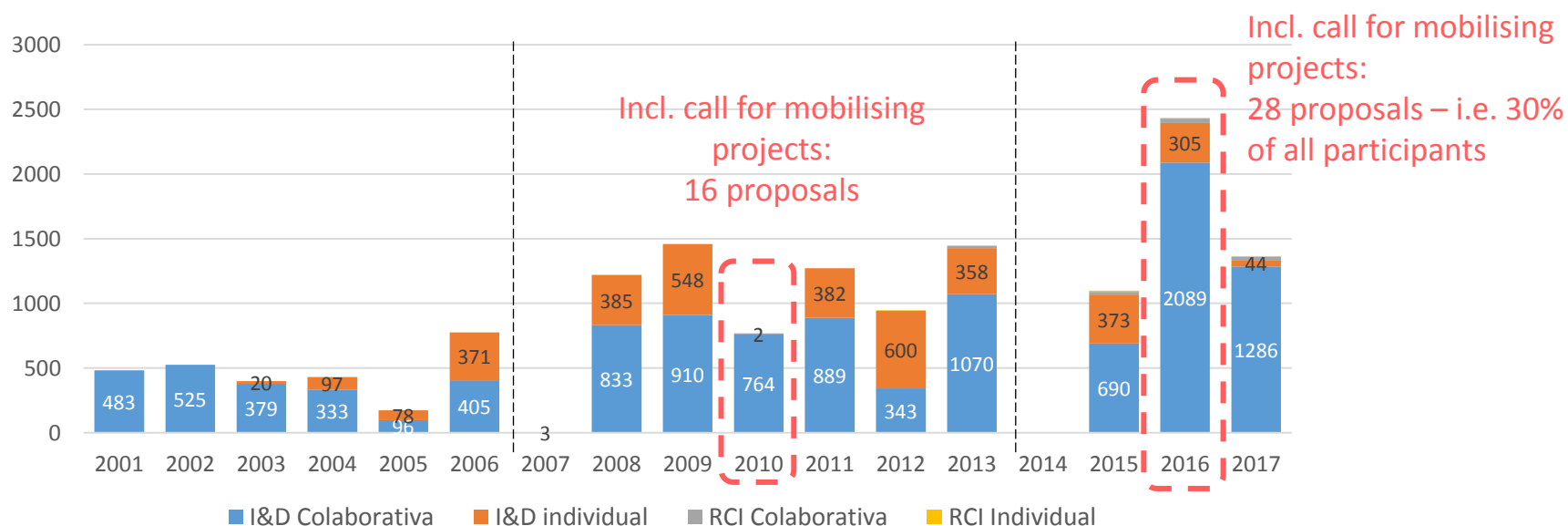
	Financial incentive scheme	Management agency (at present)
<b>Collaborative schemes</b>	Collaborative R&D projects	ANI
	Mobilizing R&D projects	
	Demonstration projects and pilot lines (collaborative and individual)	
	Integration of R&D teams in companies (collaborative)	
<b>Individual schemes</b>	Individual R&D projects	IAPMEI
	Integration of R&D teams in companies (individual)	
<b>“Investment Contract Scheme” (RCI)</b>	RCI R&D projects (collaborative and individual)	AICEP Portugal Global

## Submitted proposals to collaborative and individual R&D financial incentives over time



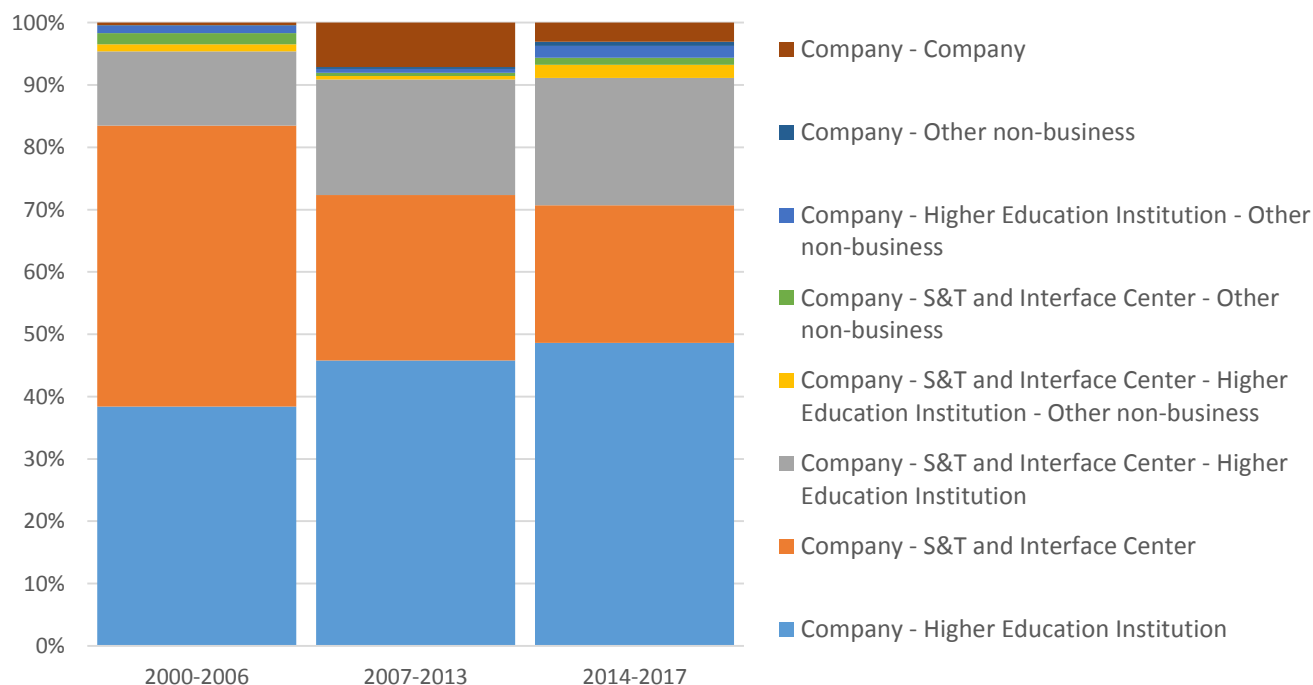
- Demand for collaborative funding schemes has increased from QREN to PT2020
- Demand for individual funding schemes has decreased from QREN to PT2020 (and ~80% of current individual projects involve subcontracting entities)
- Proposals to collaborative R&D during the 4-year period of PT2020 reached 72% of the submitted proposals to collaborative R&D for the whole QREN period (from 2015 to 2016 the demand for collaborative schemes has more than doubled)

## Number of participating entities in proposals submitted to collaborative and individual R&D financial incentives



- Number of entities engaged in proposals submitted to **collaborative funding schemes** in average: 2,8/proposal (QCA III) < 3,1/proposal (QREN) < 3,6/proposal (PT2020, until 2017)
- PT2020 has attracted collaborative projects of a higher scale – growing capacity of the National Innovation System to cooperate around common goals

## Share of different consortia compositions in proposals submitted to all financial incentives to collaborative R&D



Increasingly enlarged and diversified consortia

## MOBILIZING PROJECTS

- QCA III (2001, 2002): 10 funded projects
- QREN (2010): 14 funded projects
- PT2020 (2016): 14 funded projects

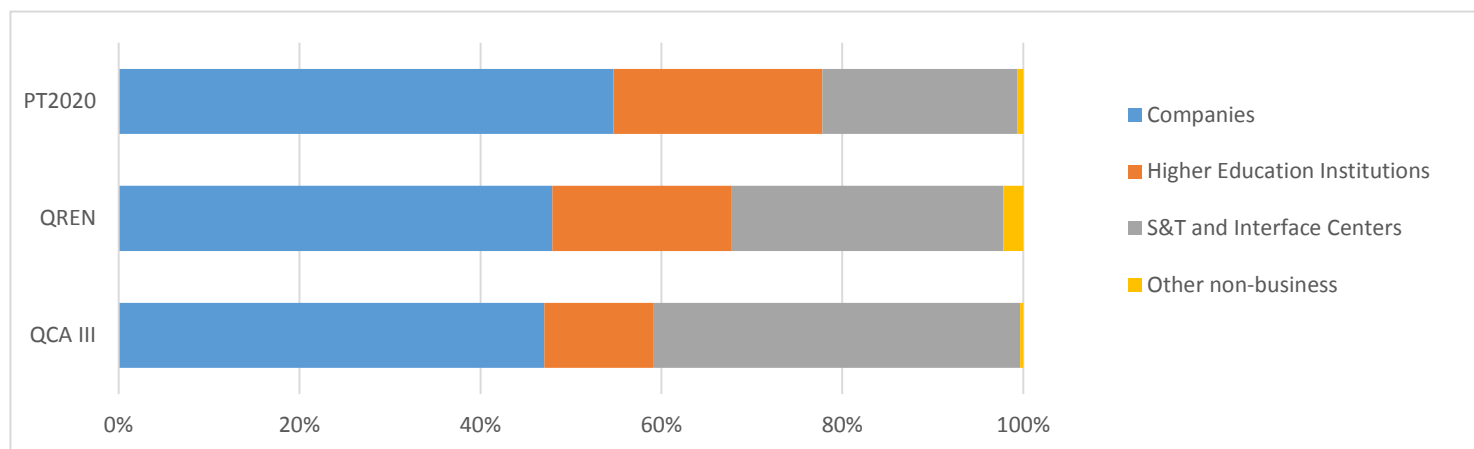


Total investment: 121 MEUR  
Public funding: 84 MEUR



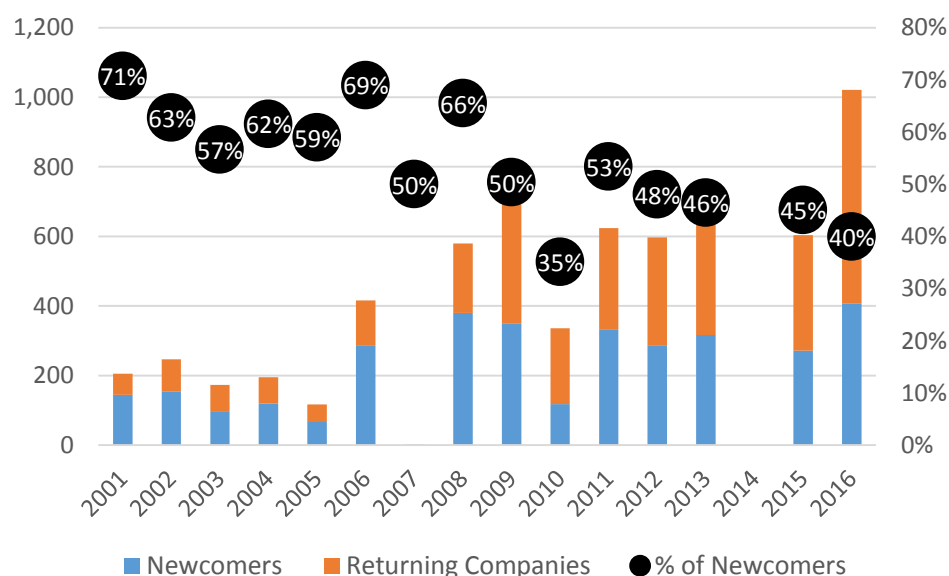
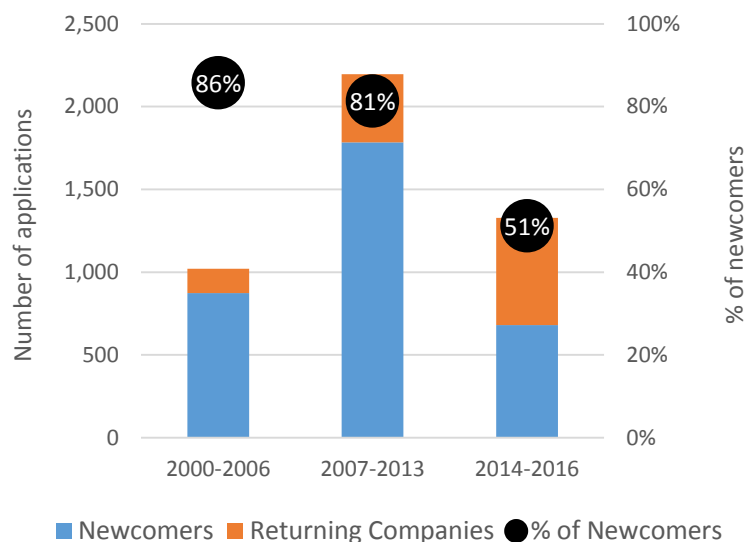
Total investment: 107 MEUR  
Public funding: 71 MEUR

Approved funding to mobilizing programs by type of participant



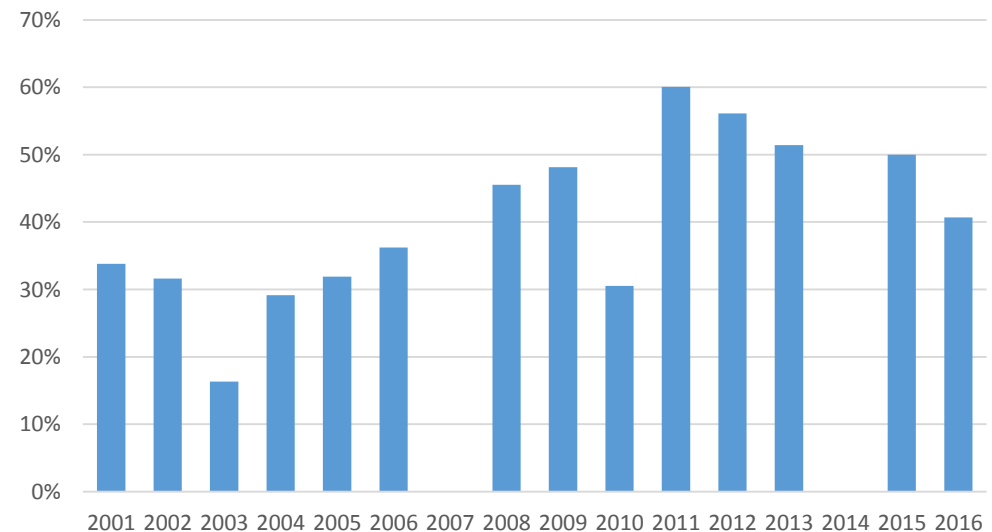
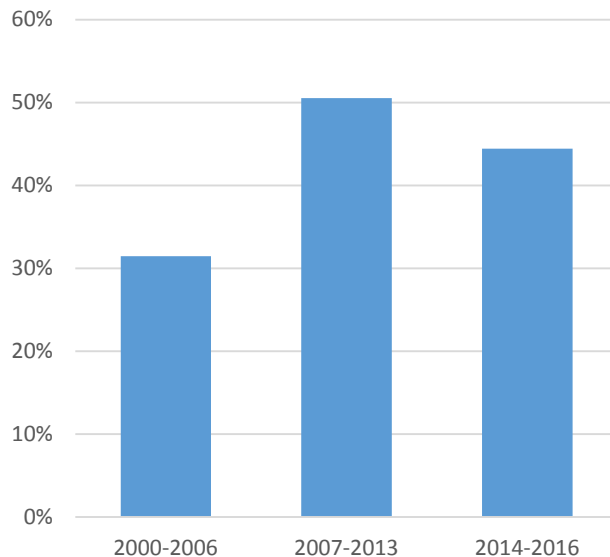


## Newcomers and returning companies in proposals under all financial incentives to business R&D



- 2000-2013: Enlargement of the companies covered by the programme (2 framework programmes)
- 2008-2016: 300 new companies/year (48% per year) in average
- PT2020 (2014-2016): a less intensive expansion but a higher consortia complexity – consolidation stage?

**% Newcomers with < 5 years of existence – proposals to all financial incentives:  
the attractiveness of the programme to start-ups**



- QREN (2007-2013): 50% of the new companies at the programme were less than 5 years old
- PT2020 (2014-2016): More than 40% of the new companies were less than 5 years old
- Since 2008, 40% to 60% of the new companies at the programme each year were less than 5 years old

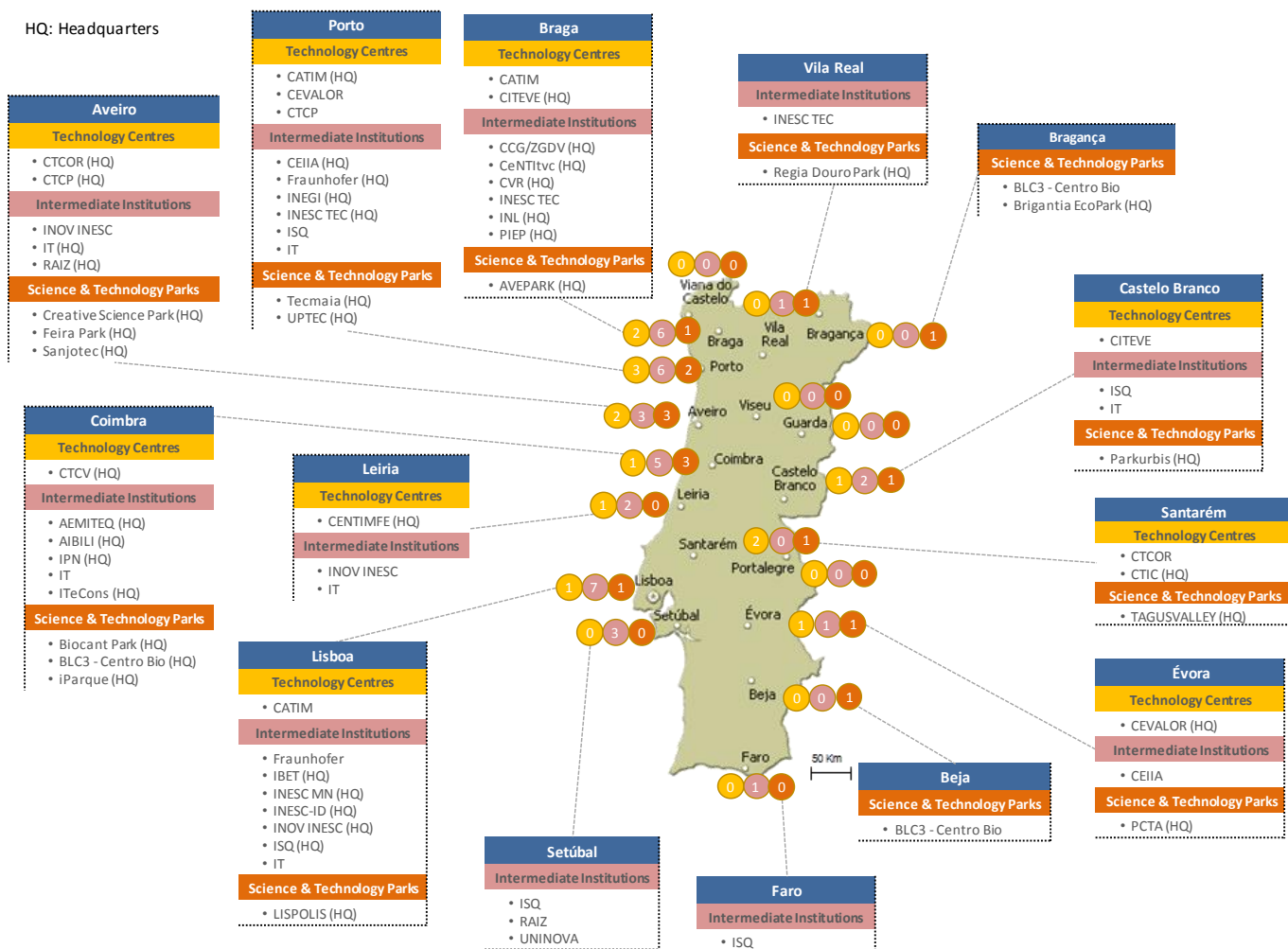
# New instruments: the role of INTERFACE entities

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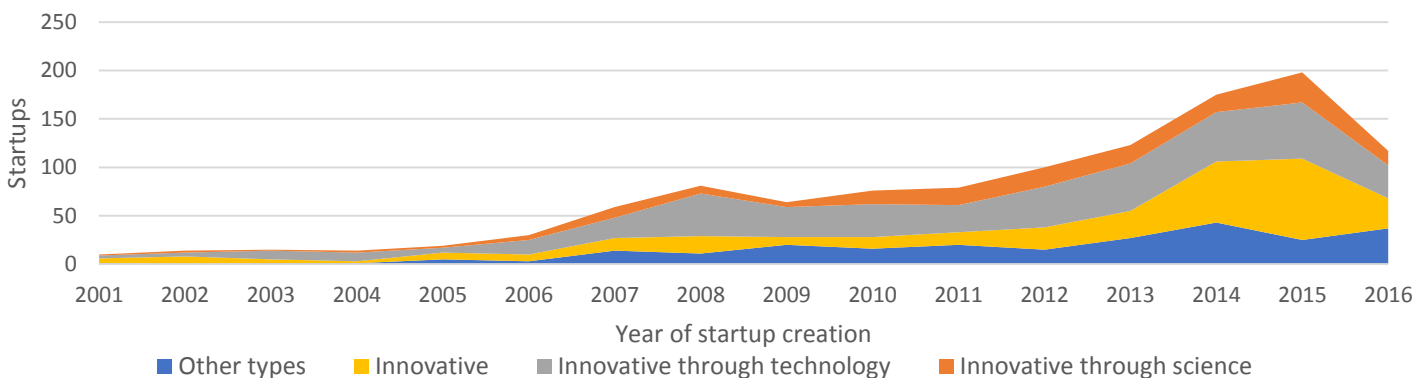


# TECHNOLOGY INFRASTRUCTURES: MAPPING BASED ON PUBLIC CONSULTATION (2016)

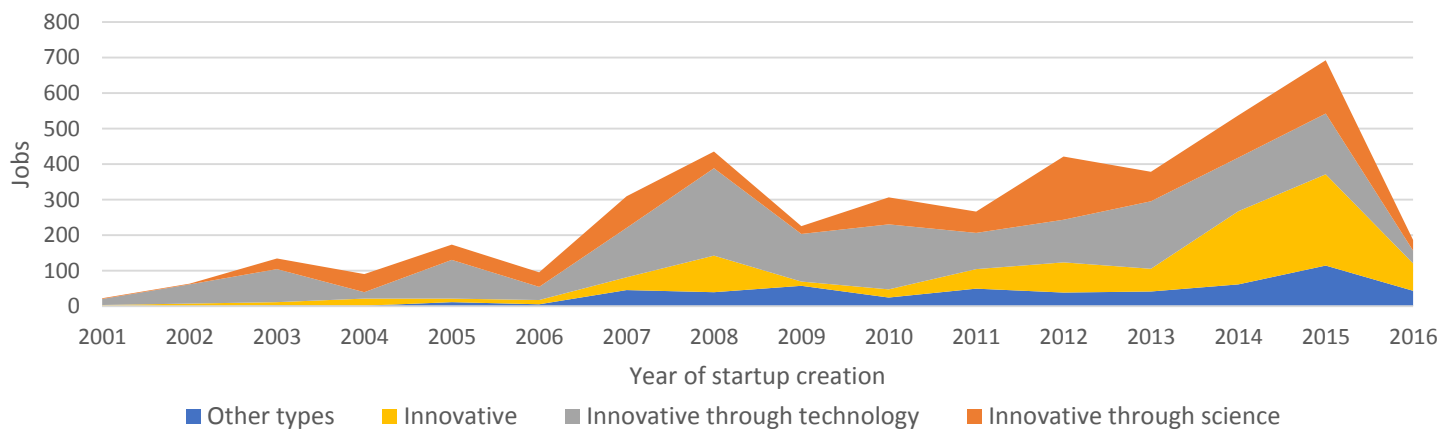
## Technological Infrastructures by district location (headquarters and other facilities)



## 1200 start-ups were declared by 40 national incubators



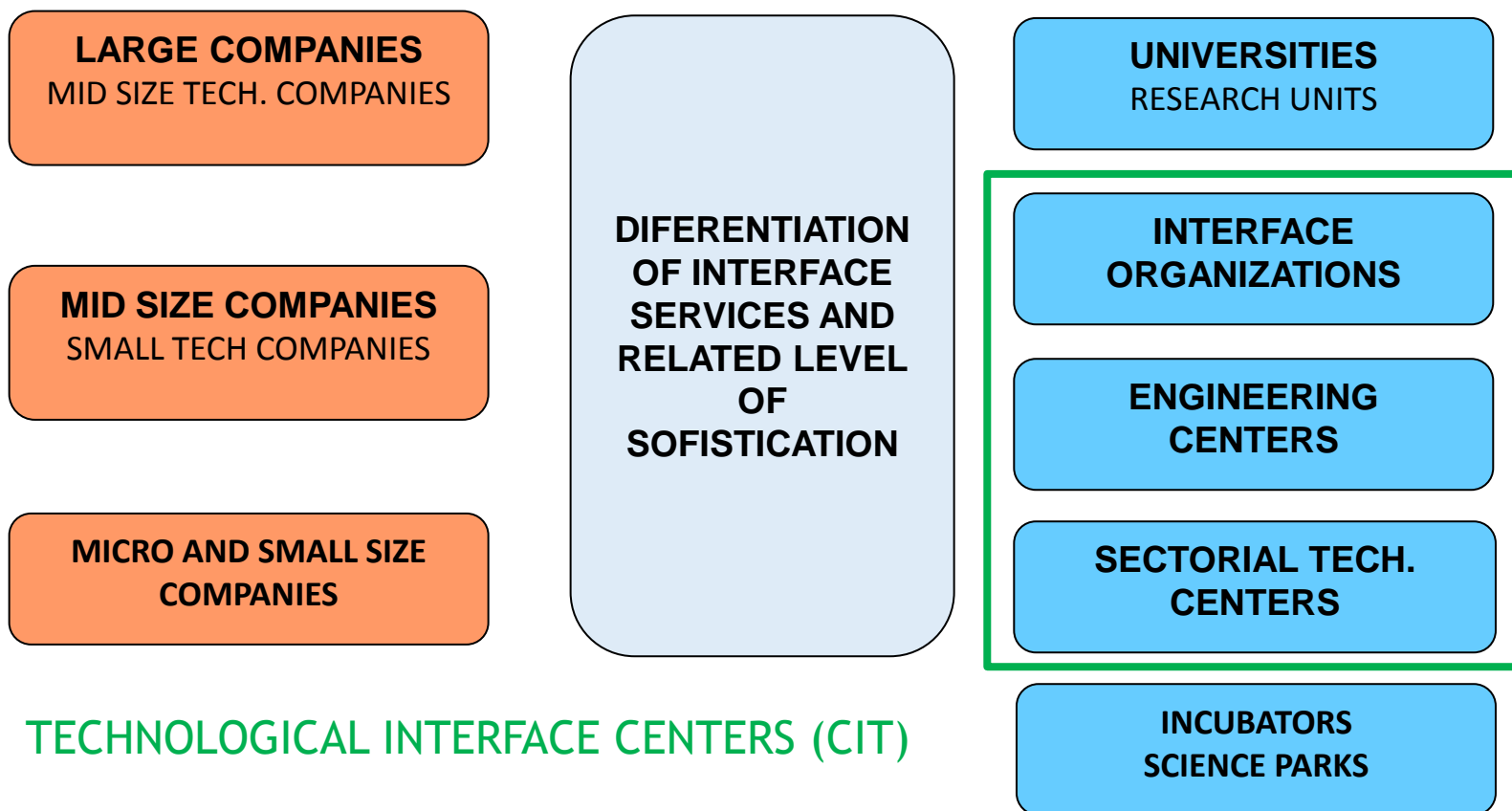
## 4300 jobs were created in the start-ups as declared by the national incubators



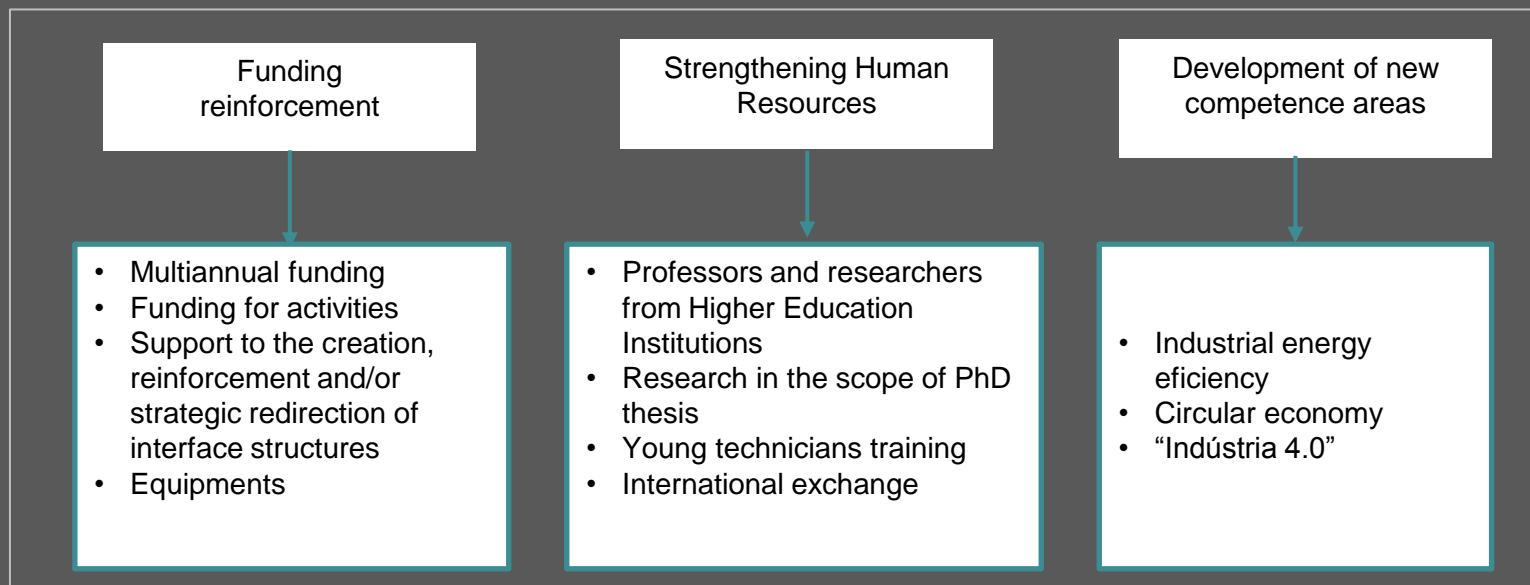
## Designing new funding instruments...



- Technology interface centers
- Competitiveness clusters
- Collaborative Labs
- “Suppliers’ club”



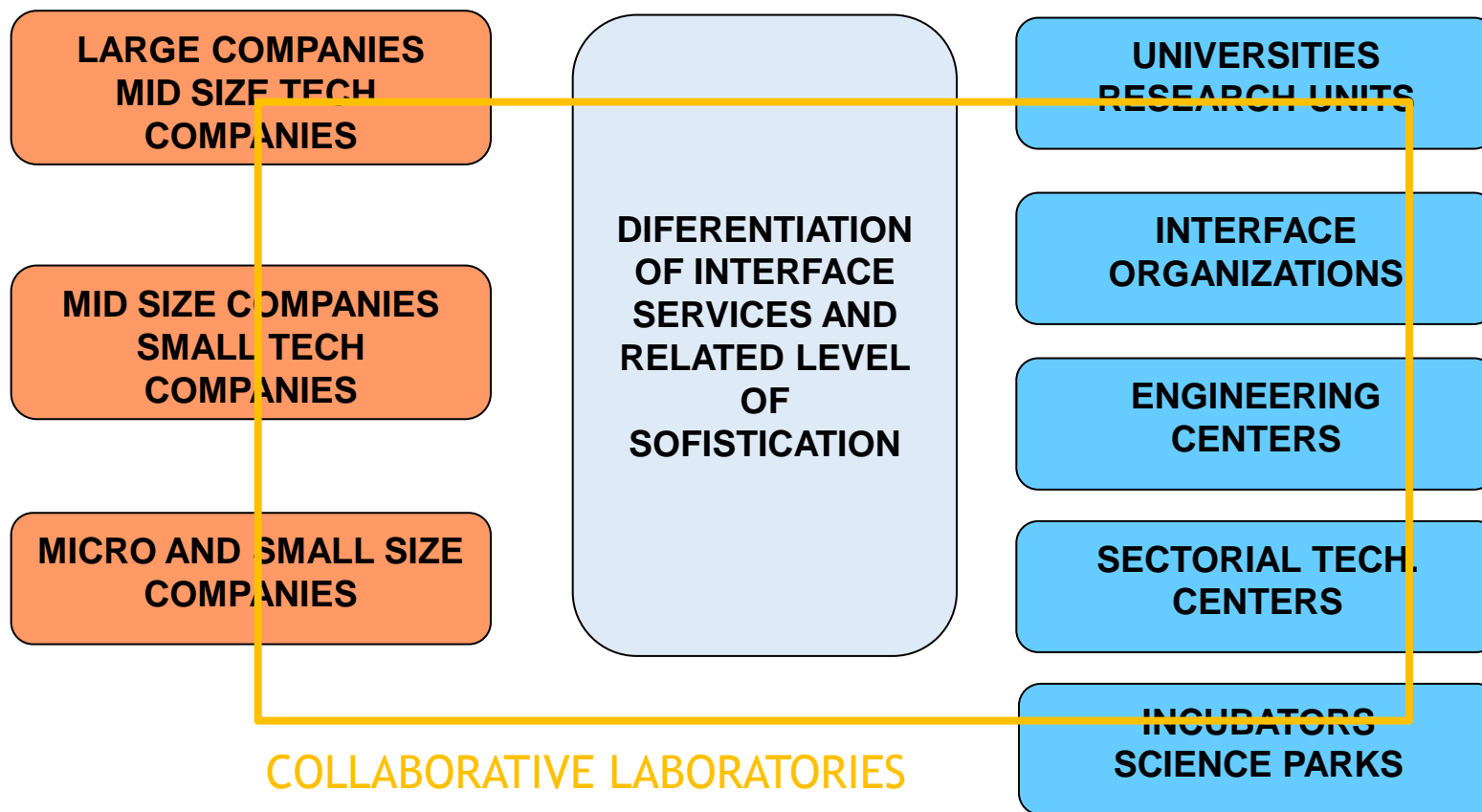
## Technology Interface Centers: acting domains and measures



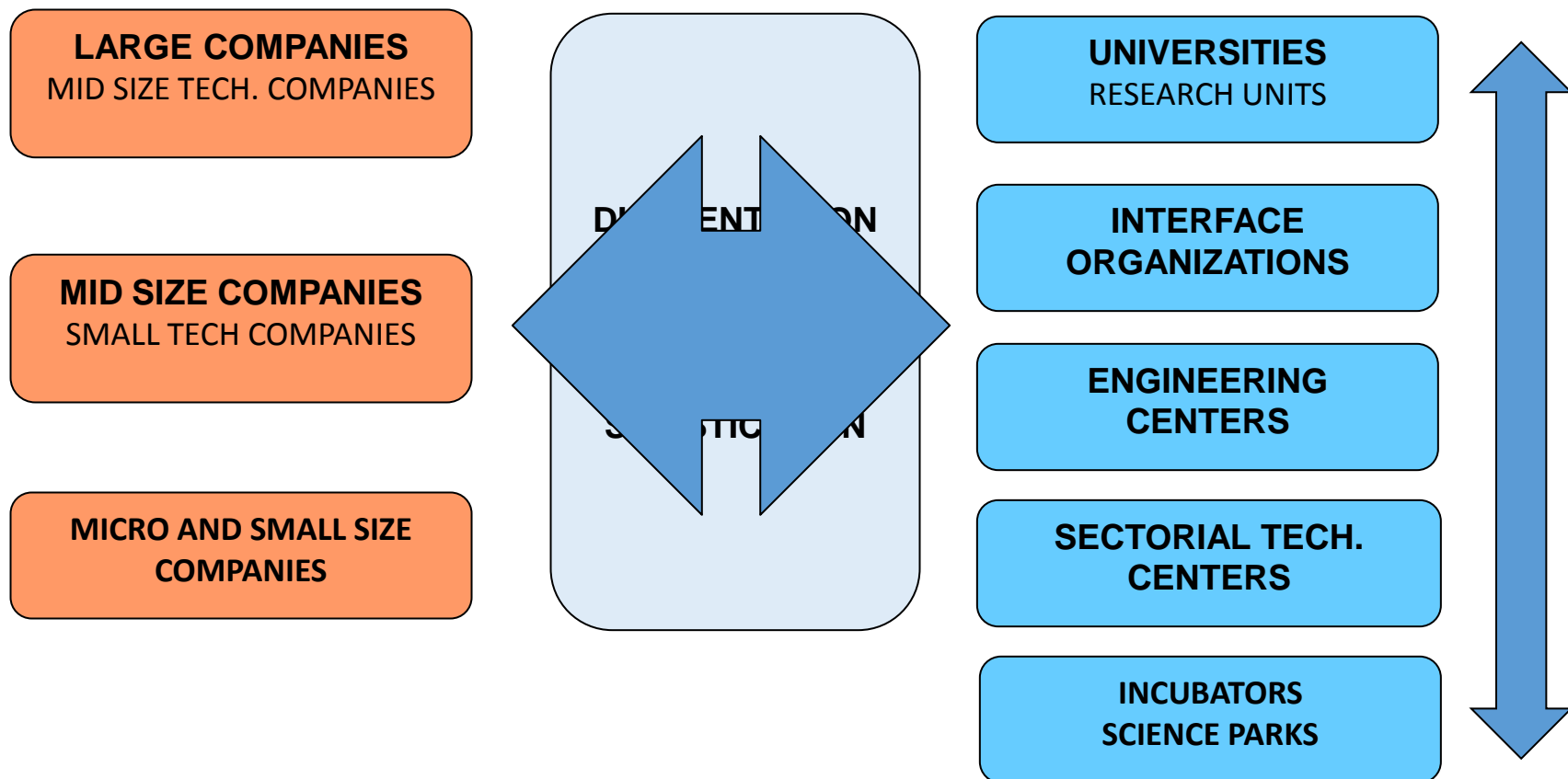
### Fontes de Financiamento que suportam as medidas do programa de apoio aos Centros de Interface Tecnológico

Fonte de financiamento	Financiamento Plurianual	Financiamento a projetos	Reforço dos Recursos Humanos	Equipamento	Empresas
FITTEC	4-measures calls for proposals under preparation		✓		
Fundos Europeus Estruturais e de investimento	Call for proposals for capacity building under preparation with the Regional Operational programmes				





## PEOPLE AND KNOWLEDGE CIRCULATION





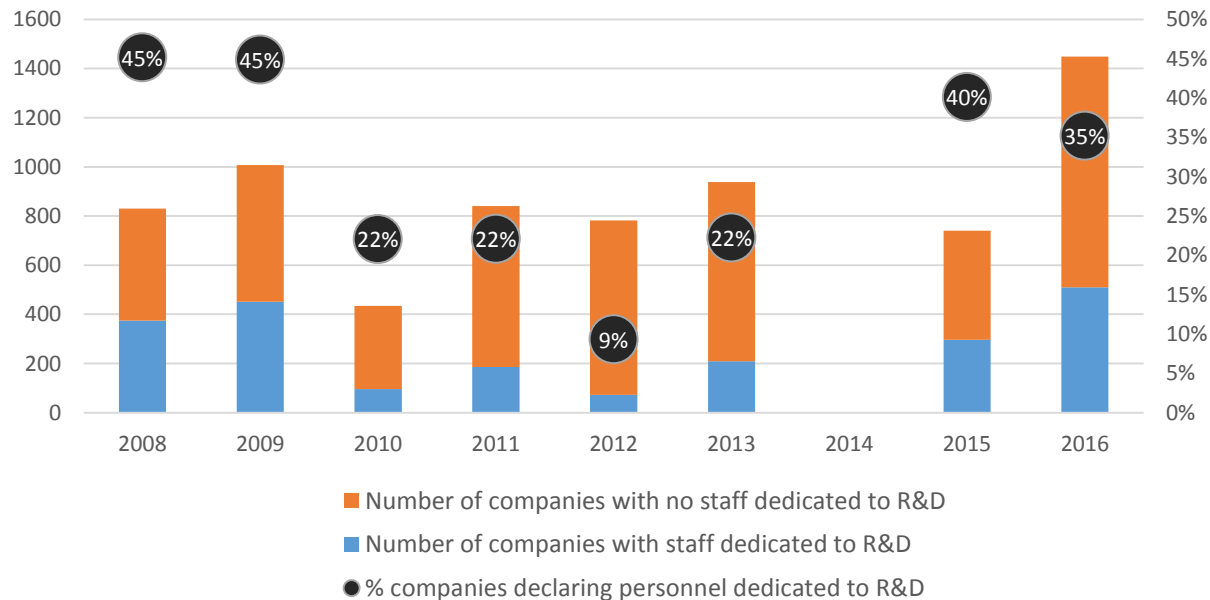
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## People: mobility and retention of qualified Human Resources

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## Staff dedicated to R&D as declared by companies engaged in proposals submitted to financial schemes to collaborative R&D managed by ANI

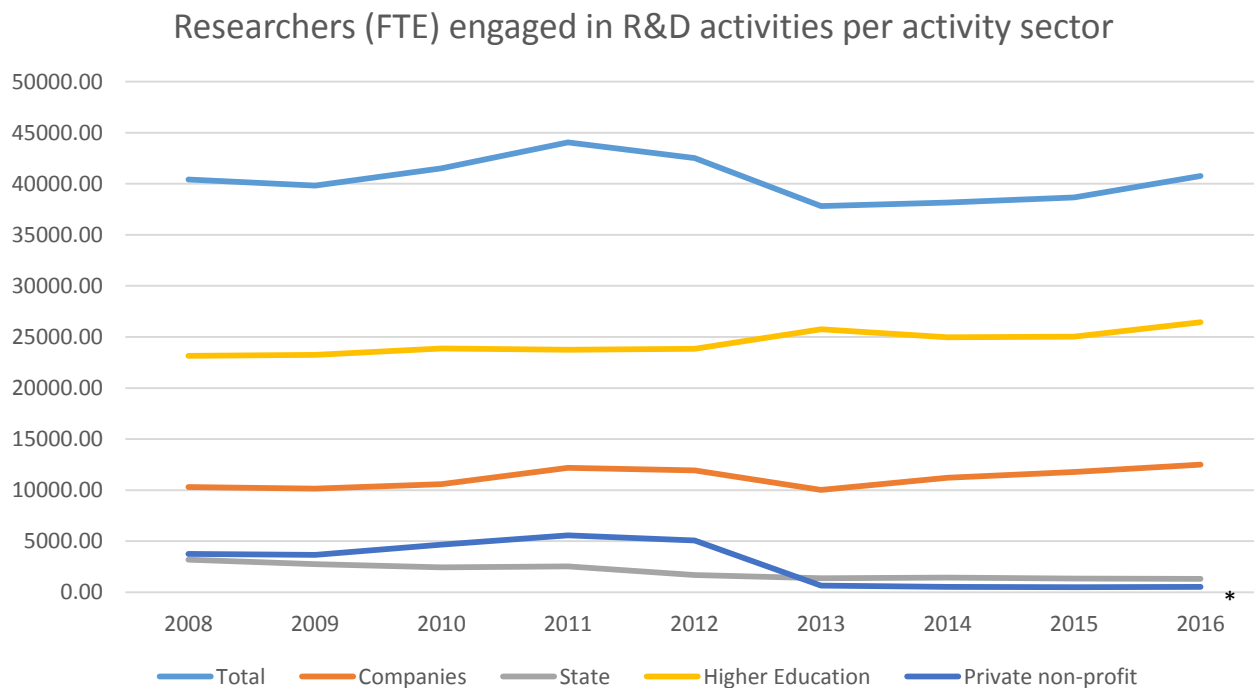


The majority of companies engaged in the proposals submitted to financial incentives to industry-led R&D does not employ R&D staff



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## EVOLUTION OF THE R&D PERSONNEL PER ACTIVITY SECTOR



\* Provisional values

Source: DGEEC/MCTES – IPCTN

## Conclusions

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## Main conclusions:

- The system seeks collaborative actions – a success story needing a governance model more aligned with an open innovation approach
- But still, incentives are needed to foster the linkages of the Portuguese Innovation system: enable the companies to cooperate at a more extensive level (catching-up with more innovative economies)
- Attraction and retention of highly qualified R&D people in business sector must be a priority
- The role of interface and collaborative entities – competence and knowledge circulation structures