



Synergies in Practice

Flanders → Leuven

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A university perspective on synergies: leveraging a climate of competition

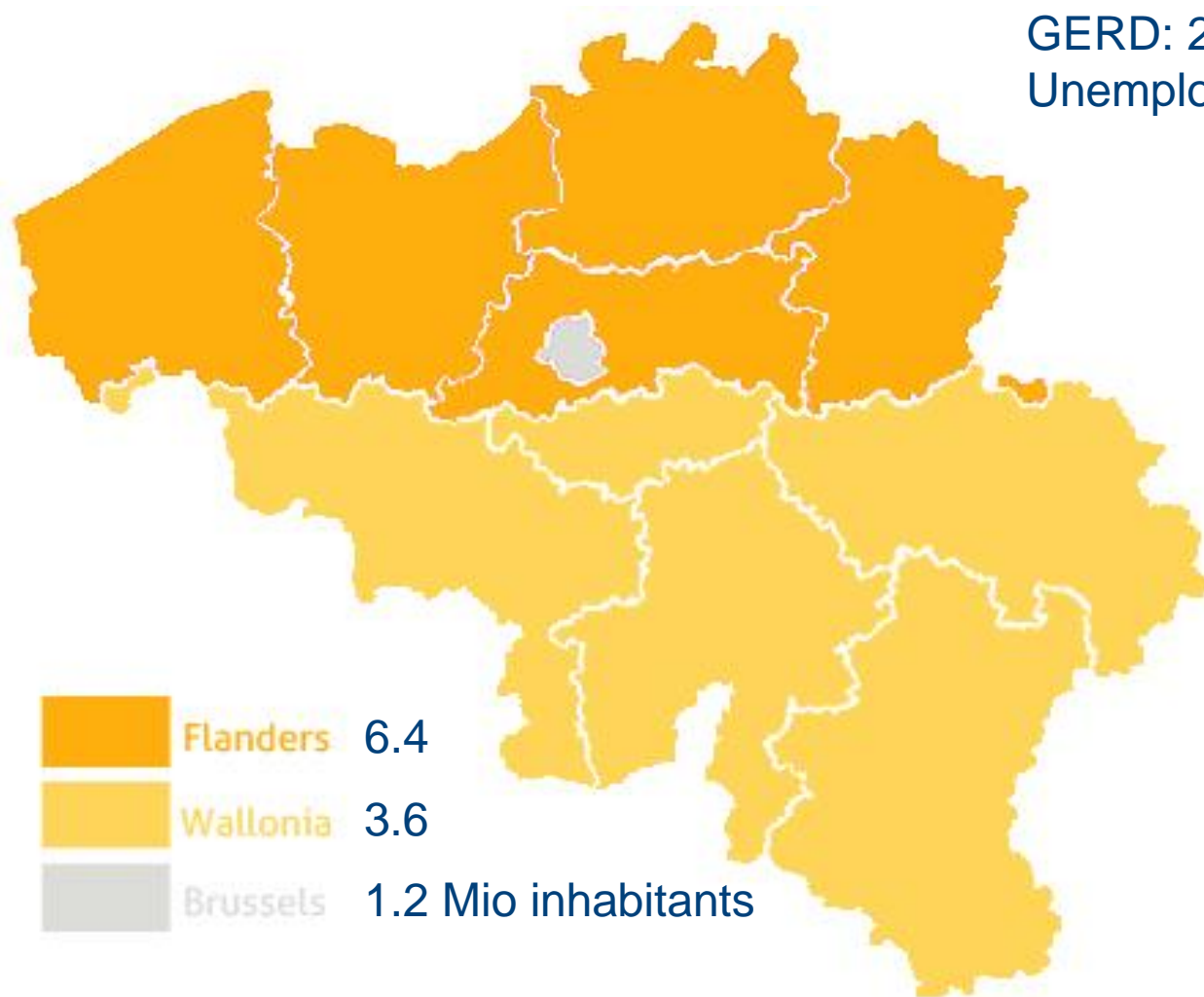
- Introduction: Flanders? KU Leuven?
- Creating synergies:
 - R&I funding landscape in Flanders
 - University R&I policy
- Outcome



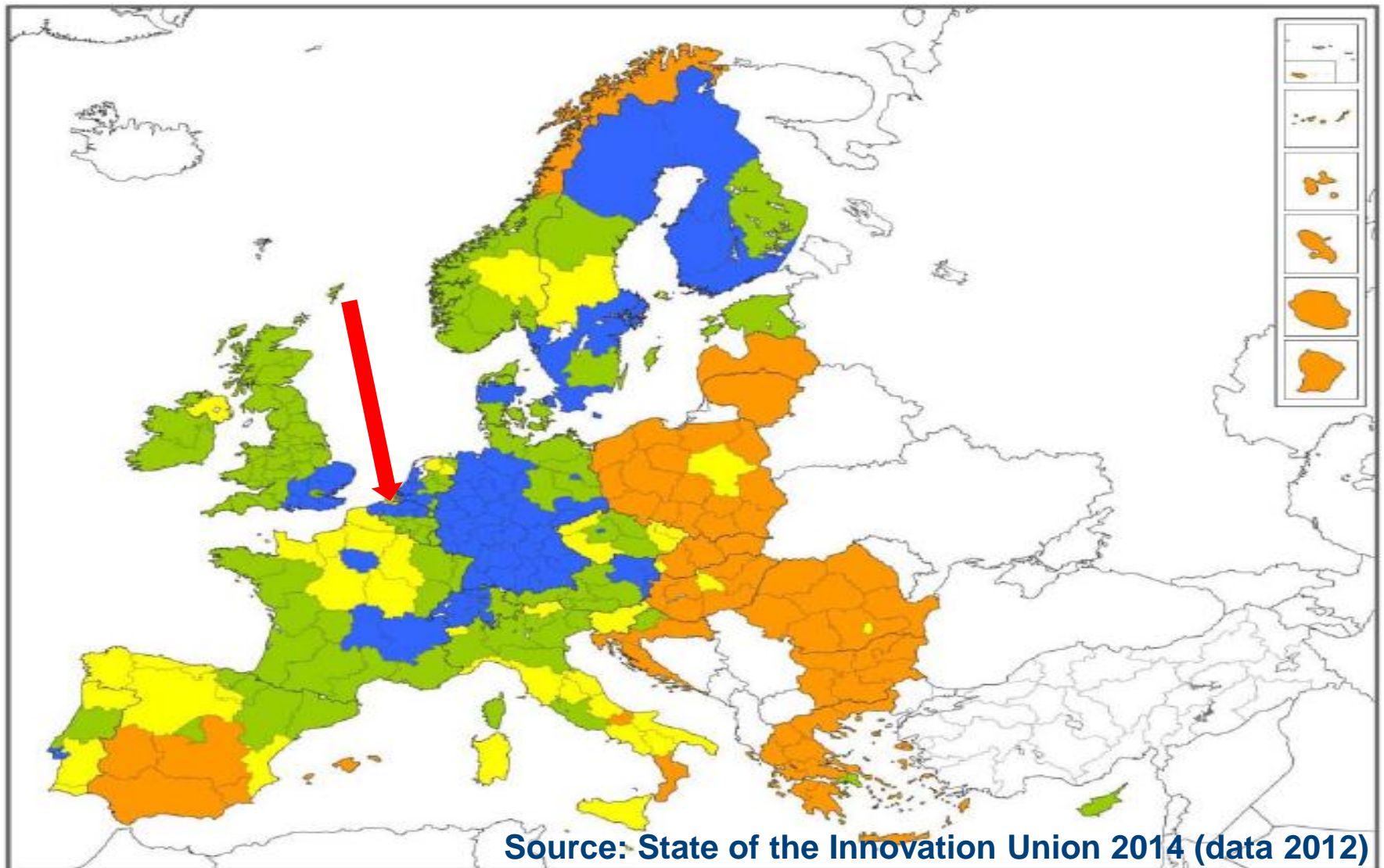
Introduction

Flanders ?

GDP: 203,552
57% of national GDP
GERD: 2.27%
Unemployment: 4.5%

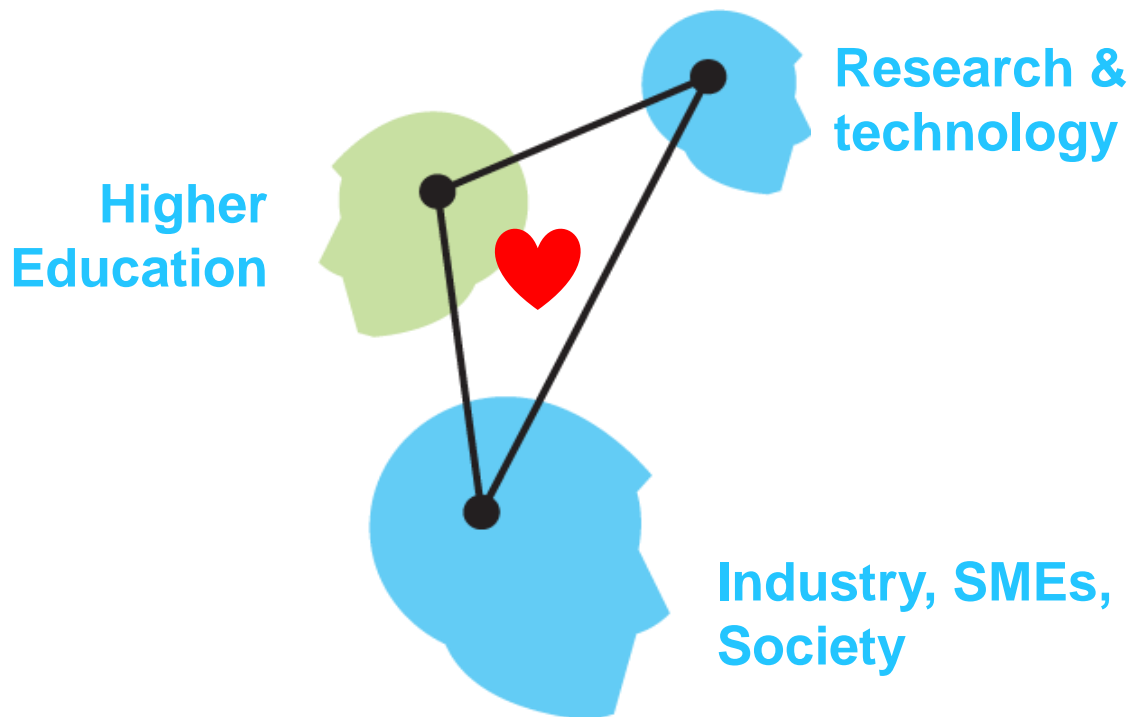


Flanders: innovation leader



Success factors for higher education institutions (HEI) in EU and society at large

KU Leuven's aim: to be (at) the heart of the knowledge triangle



- Recruit the best researchers
- Perform the best science
- Educate the best scientists & entrepreneurs
- *Create value & transfer knowledge*
- *Collaborate with society & industry*

KU Leuven ?

Comprehensive university		
Life Sciences & Medical Technologies	Materials Research	Advanced ICT Approaches
Human Diseases & Health Research	Engineering, Technologies & Processes	Economy & Society
Natural Resources (agro-food-biodiversity)	Exploring Fundamentals of Nature	Arts & Culture

Research expenses 2013: 418 M€

International funds 2013: 9% (84% FP7)

FP7 participation: 545 projects, 263 M€

H2020: 64 granted projects (March 2015)

License income in 2013: 72 M€

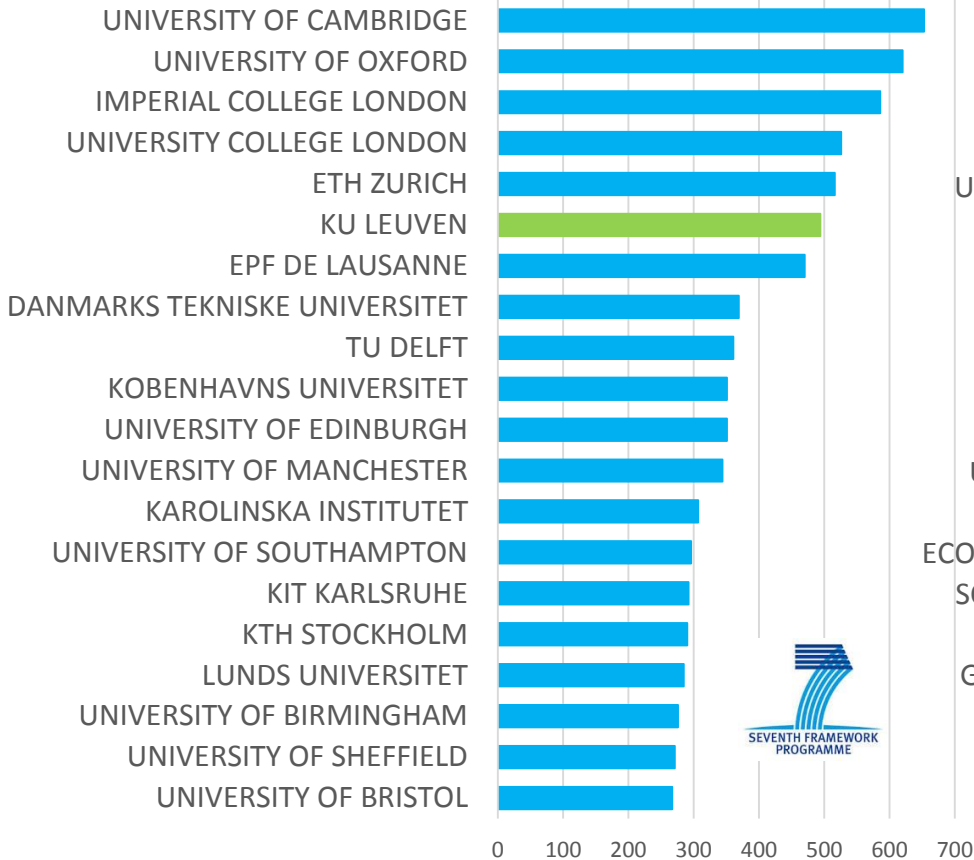


2014-2015	number	% international
students	56,659	17
professors	1,561	9
research staff	5,657	37
PhD degrees	625	40

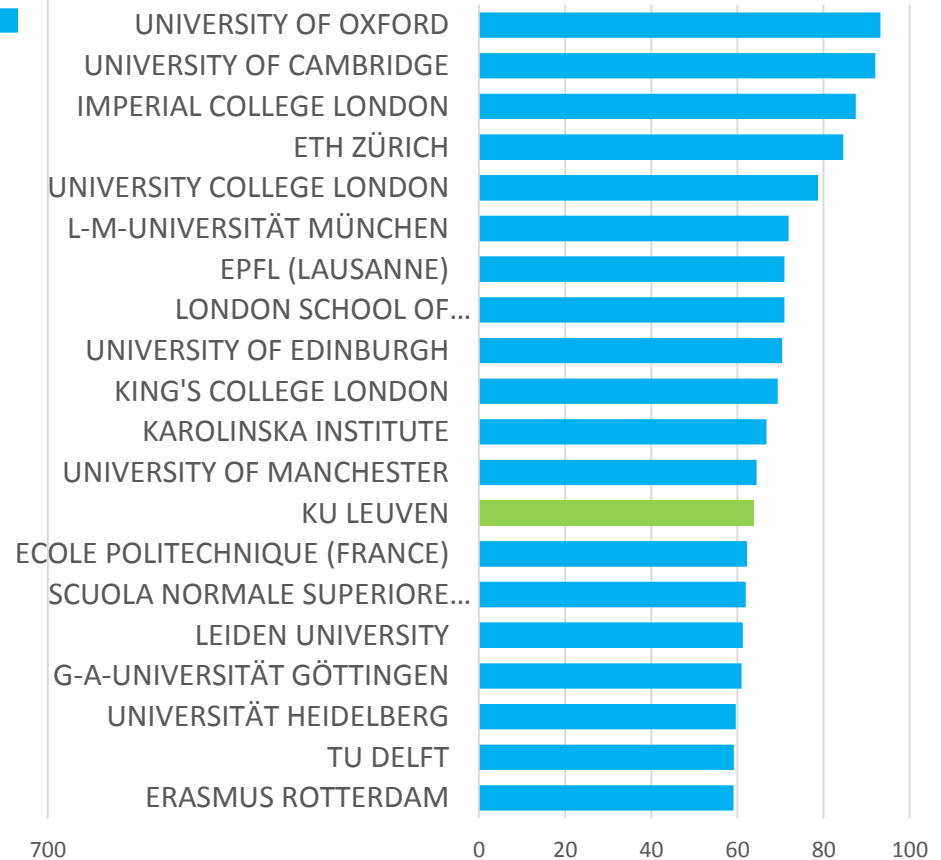
KU Leuven in the rankings

HES ranking, number of FP7 contracts

Prelim.data, **Nov. 2013**, 80% budget allocated. Source: dep. EWI



Times Higher Education university ranking 2014-2015 (Europe)



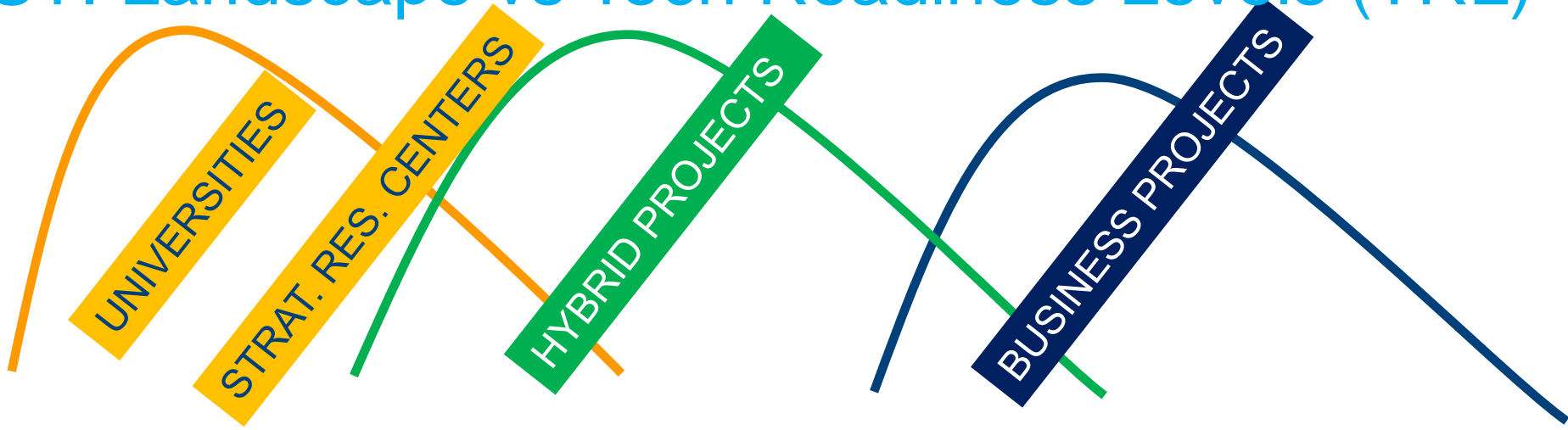


Creating synergies

Flemish R&I funding landscape

Creating synergies:

STI Landscape vs Tech Readiness Levels (TRL)



1	2	3	4	5	6	7	8	9
BASIC PRINCIPLES OBSERVED	TECHNOLOGY CONCEPT FORMULATED	EXPERIMENTAL PROOF OF CONCEPT	TECHNOLOGY VALIDATION IN LAB	TECH VALIDATED IN RELEVANT ENVIRONMENT	DEMONSTRATION IN RELEVANT ENVIRONMENT	DEMONSTRATION IN OPERATIONAL ENVIRONMENT	SYSTEM COMPLETE AND QAIFIED	SUCCESSFUL MISSION OPERATION

STI funding landscape Flanders

Bottom-up,
excellence

Parameters:

- Quality assessment
- **High degree of Autonomy**
- Leverage
- Reference level: international

Hybrid projects =

- Science + Innovation + Generic
- Univ/res. Center + private partner(s) + government agency
- Added value (in own region)

Specific support for the industry (starters, growth of SMEs, market development,...)

Enterprise Agency

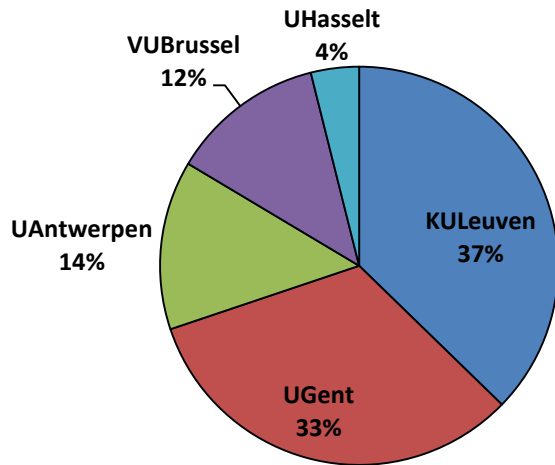
Agency for Innovation by Science & Technology

Bottom-up, "RIS3 check"

1	2	3	4	5	6	7	8	9
BASIC PRINCIPLES OBSERVED	TECHNOLOGY CONCEPT FORMULATED	EXPERIMENTAL PROOF OF CONCEPT	TECHNOLOGY VALIDATION IN LAB	TECH VALIDATED IN RELEVANT ENVIRONMENT	DEMONSTRATION IN RELEVANT ENVIRONMENT	DEMO IN OPERATIONAL ENVIRONMENT	SYSTEM COMPLETE AND QAIFIED	SUCCESSFUL MISSION OPERATION

Budget breakdown Flemish univs

Operational Subsidies

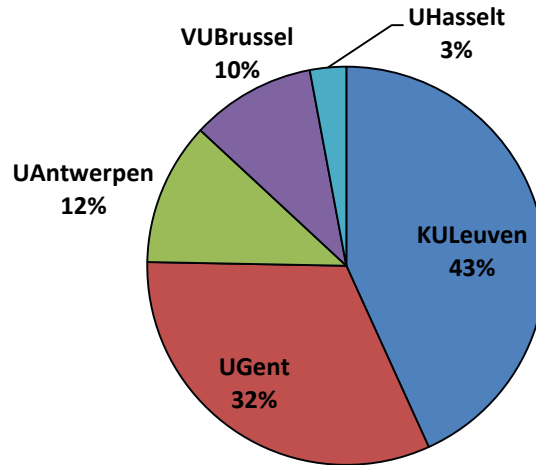


Parameters:

55% Education
 45% Science (capacity)
 (paying for salaries of permanent staff)

Policy area: Education and Training

Special Research Fund (BOF)

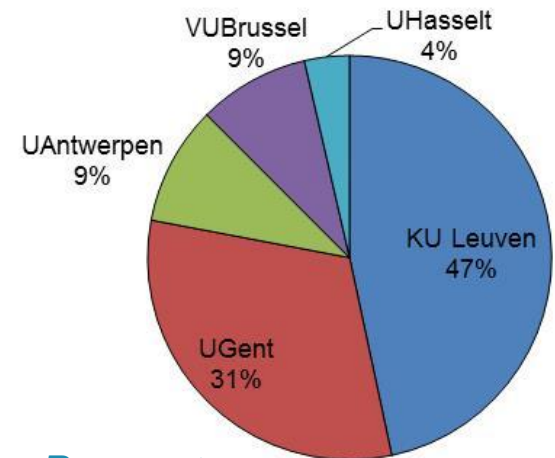


Parameters:

'Excellence' in Science
 (output-driven)
 - PhD degrees
 - Publications / Citations
 - Internationalisation and diversity

Policy area: Economy, Science and Innovation

Industrial Research Fund (IOF)



Parameters:

'Excellence' in Innovation
 (output-driven)
 - Patents, spin-offs
 - Industrial contracts
 - European R&I projects

Policy area: Economy, Science and Innovation



Creating synergies

Implementation by the university

Strategy: internal funds as leverage

KU Leuven research expenses in 2013: 418 M€

21% internal



79% external

Bottom-up, no thematic allocation
Competition, international peer-review

Categories of funding:

- C1: basic research
- C2: socio-econ impact on long-term
- C3: short-term socio-econ impact

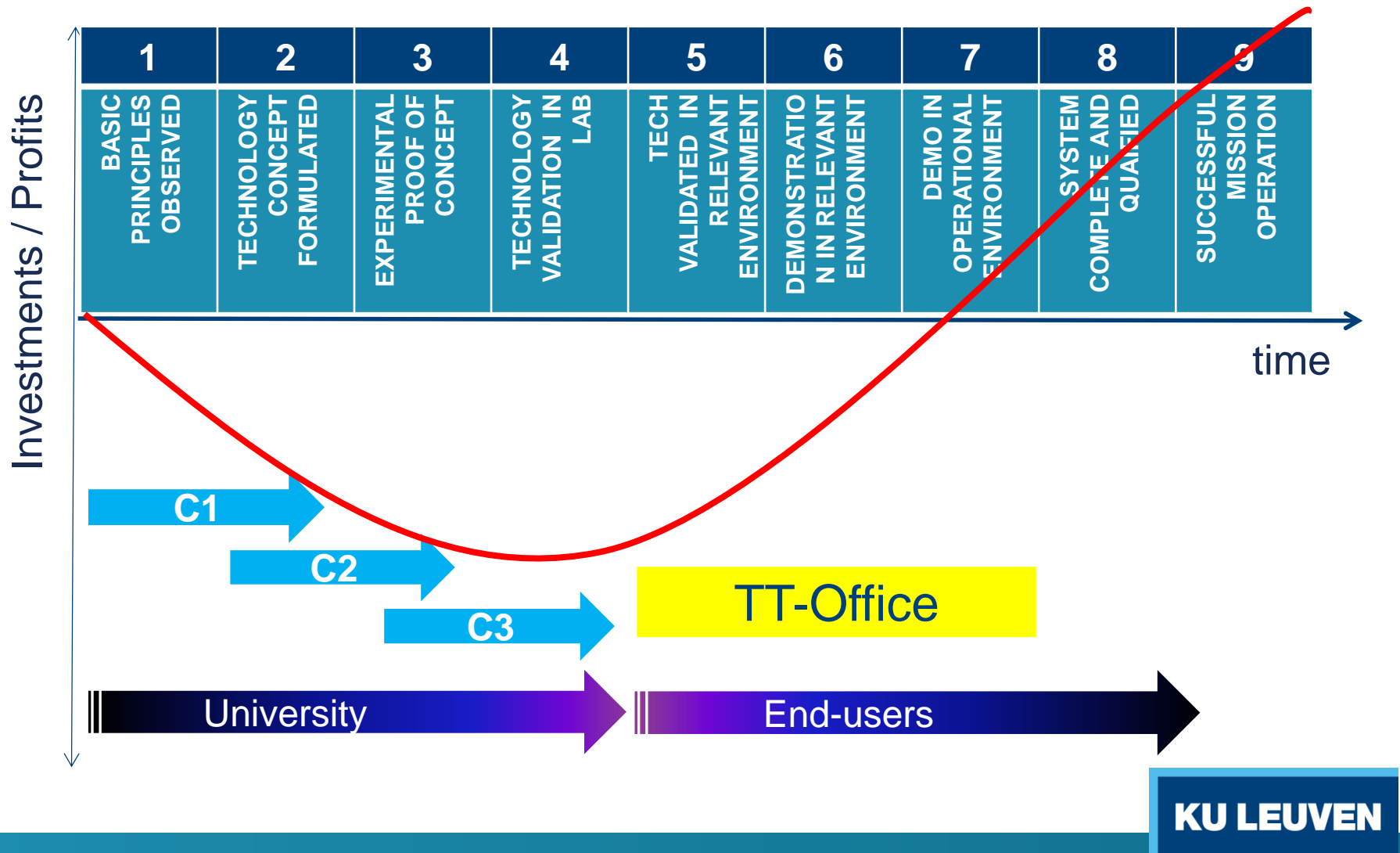
40% national

9% international (EU)

23% private sector

7% other

Innovation: university involvement in the innovation chain



Technology Transfer Office (TTO)

KU Leuven Research & Development (LRD) est. 1972

- Research collaboration with private sector
- Protection and exploitation of intellectual property
- Spin-off creation & regional development
- Networks for innovation and entrepreneurship (e.g. Leuven Innovation Networking Circle, EIT Health, EIT Materials, EIT Energy,...)

Staff: 80 FTE

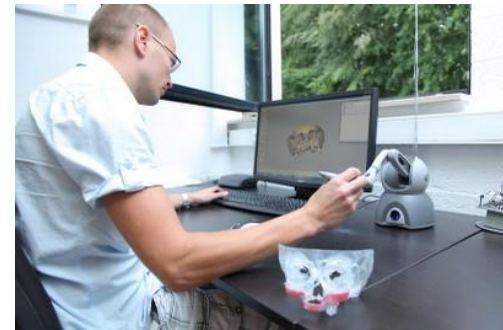
Currently targetting $\frac{3}{4}$ professors



KU LEUVEN
RESEARCH & DEVELOPMENT

+ army of knowledge brokers

- 30 permanent positions, funded by IOF
- Scientists, “business developers”, working de-centrally
- Focus on technology transfer
 - exploitation of research results
 - collaboration with private sector
 - attract new project funding
- Strong private sector network, technology platforms
- Leverage towards collaborative research (incl. EU)





Outcome

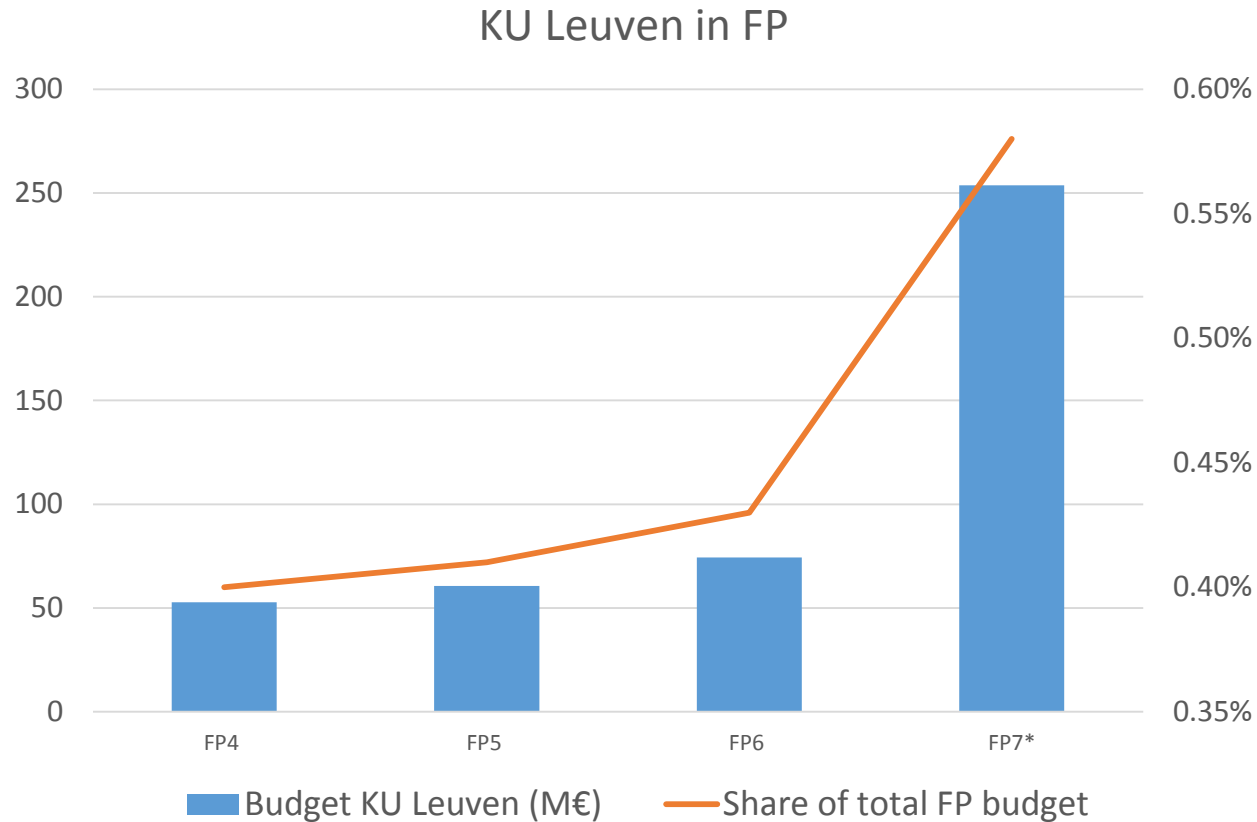
Results of the leverage policy

Impact of policy on University Ranking

<i>Times Higher Education</i>	Global	European
2010-2011	117	34
2011-2012	67	17
2012-2013	58	13
2013-2014	61	13
2014-2015	55	13

<http://www.timeshighereducation.co.uk/world-university-rankings>

Impact on FP participation 1994-2013



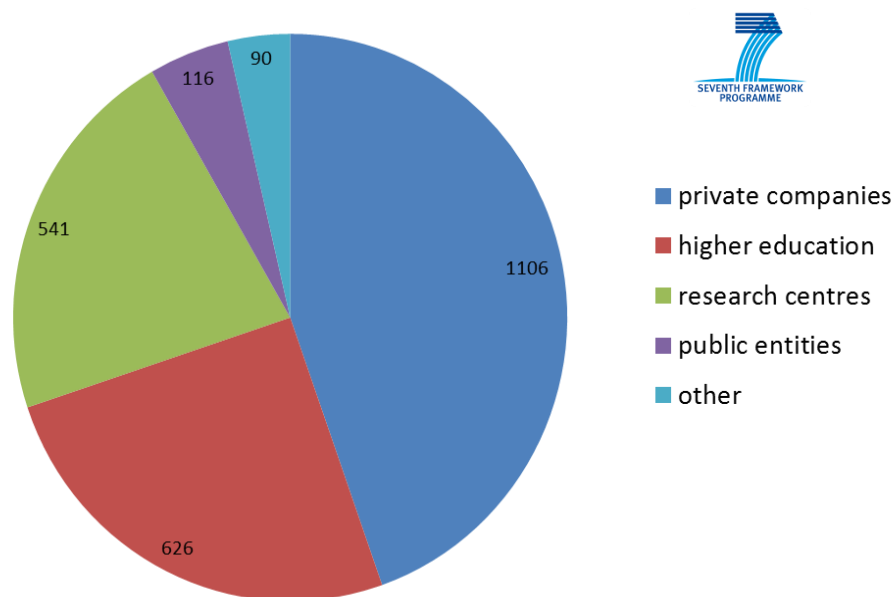
Source: European Commission, via Flemish dep. EWI
FP4, 1994-1998; FP5, 1998-2002; FP6, 2003-2006; FP7, 2007-2013

Collaboration with private sector in FP

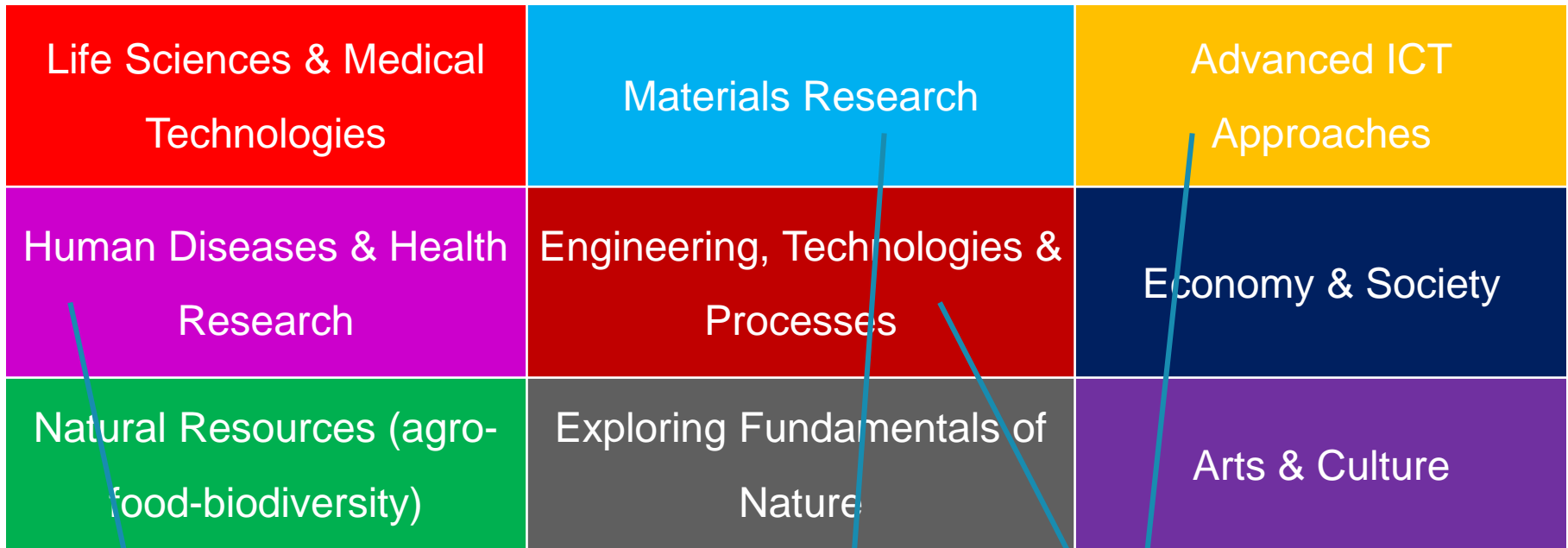
FP7: **44%** of partners in multipartner contracts

Horizon 2020: **40%** of partners in first grants

Type of partners in multipartner projects



Specialising smartly... (bottom up): Clusters for Excellence / *Innovation*



Leuven Institute for Neuroscience & Disease
(PF, ERC, Methusalem, VIB, hospital,...)

Materials Research Centre
(incl. recycling of rare earths)

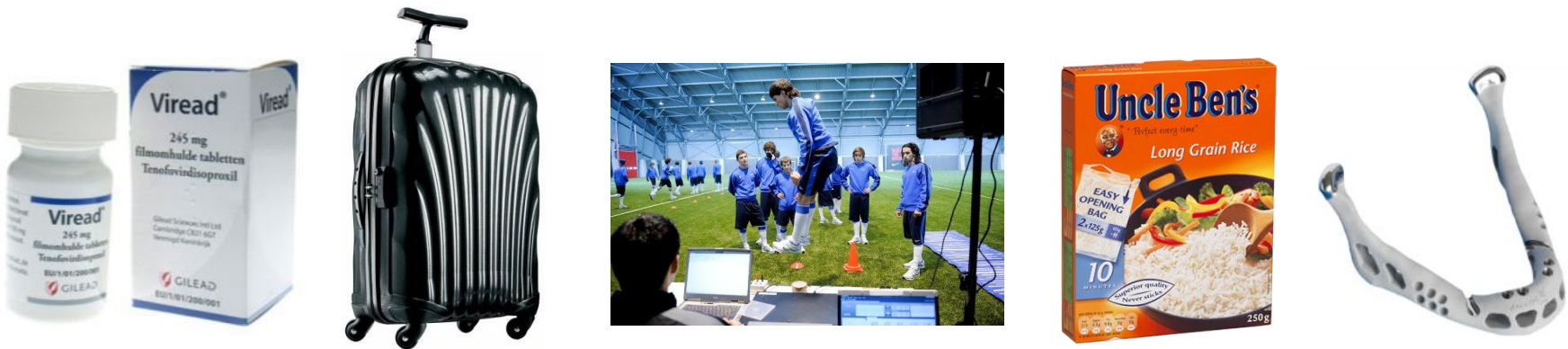
Circuit design for electronic
systems, micro- &
nanoelectronics (PF, ERC,...)

KU LEUVEN

Leuven: high-tech region

Output of KU Leuven Research & Development:

- 101 spin-offs (86 still exist)
- 150 invention disclosures / year
- 1300 new agreements for contract & collaborative research / year
- 2012 license income: 80 M\$



Thank you !

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