



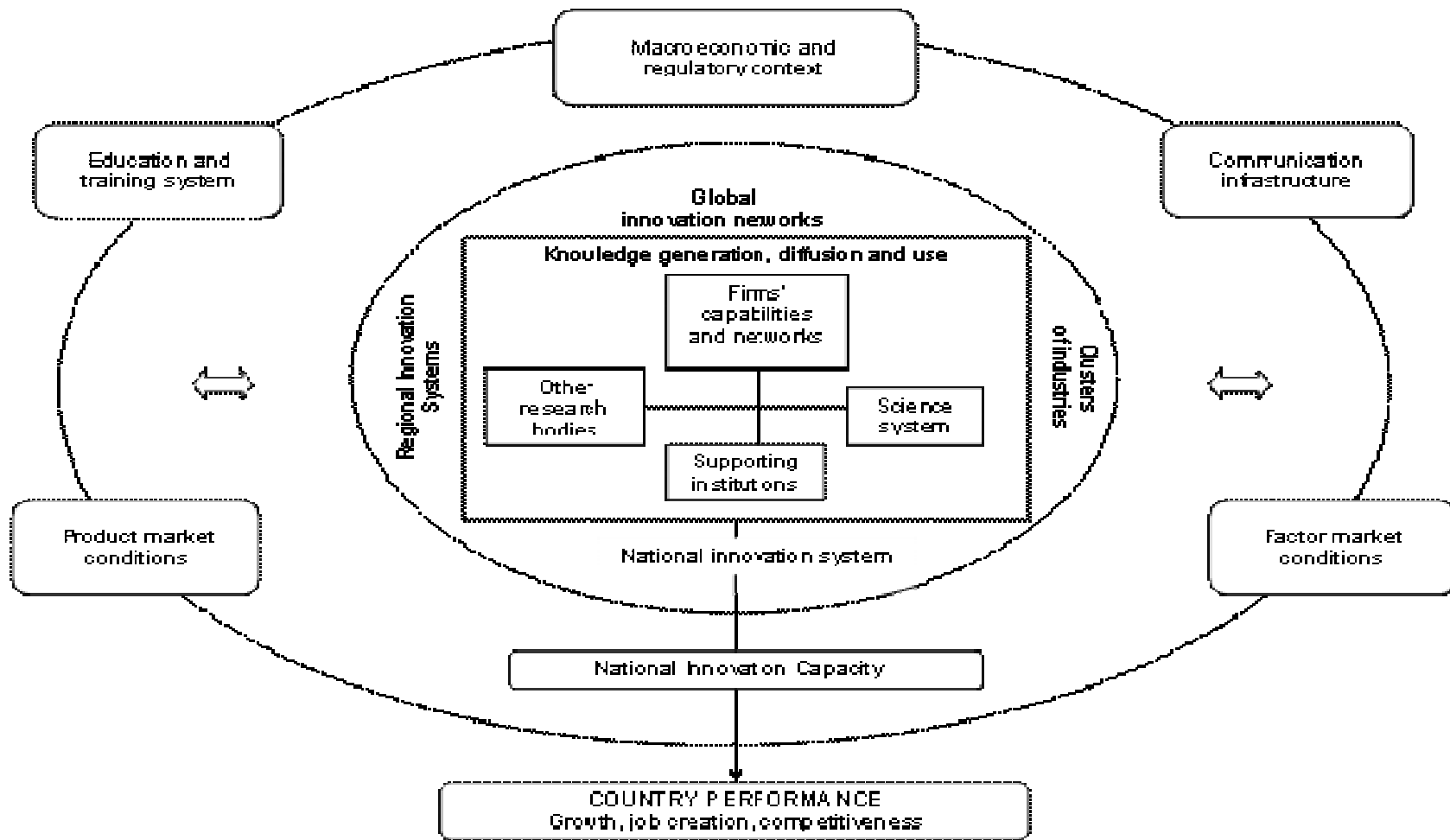
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# Regions as catalysts for open innovation

**Koenraad Debackere**  
**K.U.Leuven**

Wednesday, June 17, 2009

# Actors and stakeholders in the innovation space ...

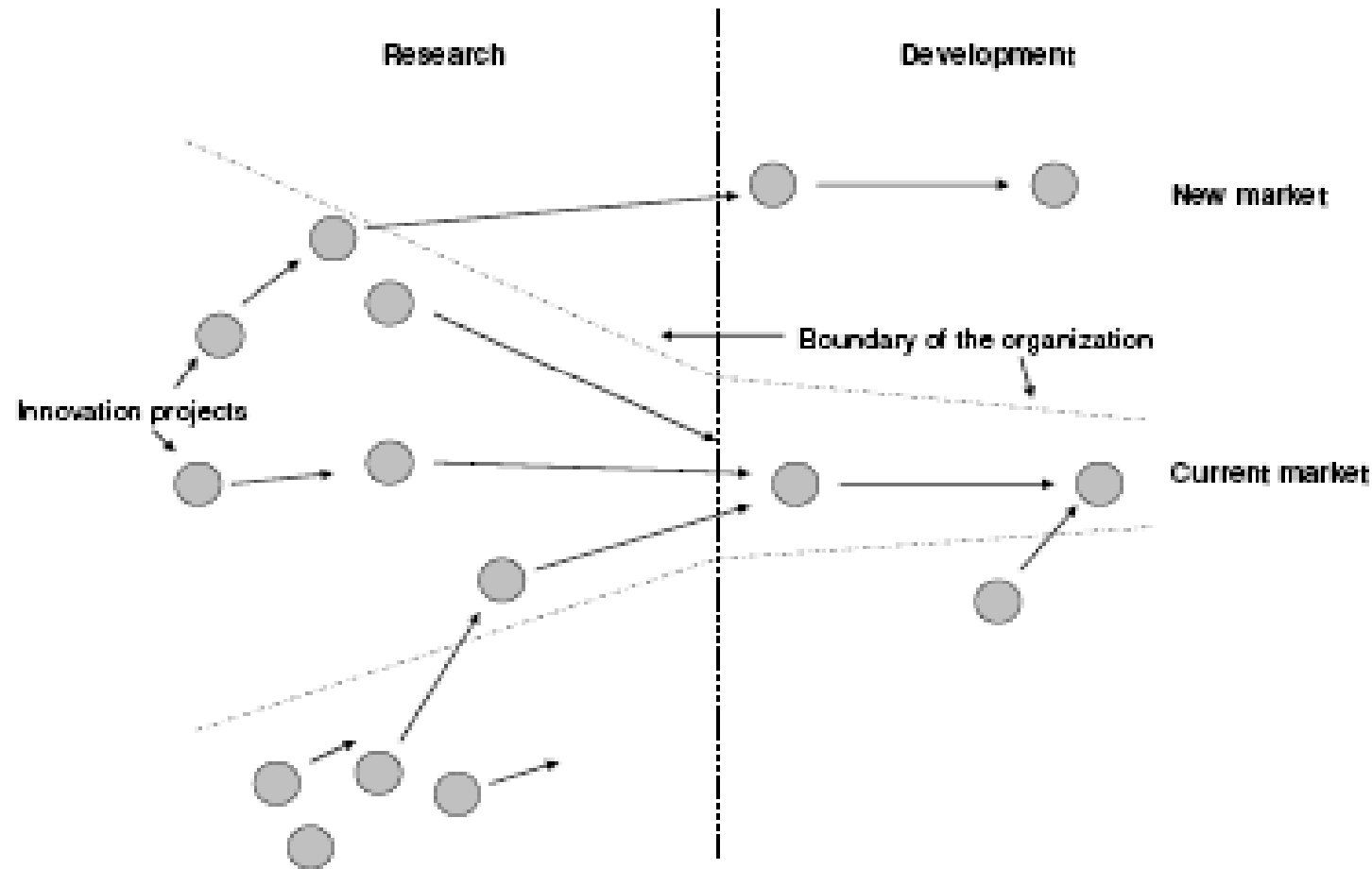


# Challenges in the innovation space require collaboration and openness ...



PERIOD	FOCUS	WHO ?	LEVEL
60-70	Technological Innovation (DoD, Nasa ...)	“the technologist”  “the lab”	technology
80-90	Product Innovation (Automobile, PC, ...)	“innovative staff”  “the organisation”	marketing
Today	Business Model Innovation (Senseo, Adobe ...)	“management & partners”  “innovation-ecosystem”	boardroom

# Open innovation: a mode of competition & cooperation ...



Source: Chesbrough (2003, p. xxv).

# The variety of policy views in the innovation space ...

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- ◆ **Fostering curiosity-driven research --- stimulating demand-driven research**
- ◆ **Policies geared towards individuals --- institutions --- networks**
- ◆ **Policies driven towards larger infrastructures & technology integration --- smaller, creativity driven projects**
- ◆ **Need for complementarity and additionality between and within instruments**
- ◆ **... European universities occupy a focal role in these (emerging) processes ...**

# The role of the university in the (regional) innovation ecosystem ...

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# *The changing role of “ISLs” ...*

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## ◆ Understanding the need for industry – science links:

### ❖ Various modes of “formal” research collaboration:

- ◆ Collaborative research, i.e. defining and conducting R&D projects jointly by enterprises and science institutions, either on a bi-lateral basis or on a consortium basis;
- ◆ Emergent collaborative platforms, virtual organizations, cluster consortia;
- ◆ Contract research and know-how based consulting by science commissioned by industry;
- ◆ Hybrid “public – private partnership”-like endeavors and settings.



# ***The changing role of “ISLs” ...***

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## **◆ Understanding the need for industry – science links:**

### **❖ Entering people & mobility into the equation:**

- ◆ Co-operation in graduate education such as temporary practical studies at enterprises or the joint supervision of thesis projects;**
- ◆ Advanced training for employees, i.e. further education for enterprise staff in research and innovation related topics;**
- ◆ Systematic exchange of research staff between companies and research institutes via internship programs and leave-of-absence assignments.**
- ◆ U-I joint Ph.D. programs & platforms both at national level (e.g. Baekeland fellowships) and at EU-level (e.g. IMI-educational efforts).**



# *The changing role of “ISLs” ...*

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## ◆ Understanding the need for industry – science links:

### ❖ **Generating companies:**

- ◆ Spin-off creation;
- ◆ Evolving towards more innovative mix of spin-outs & spin-ins;
- ◆ Linking academic spin-out processes to corporate spin-out processes.



# ***The changing role of “ISLs” ...***

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## **◆ Understanding the need for industry – science links:**

### **❖ And of course ... IP:**

- ◆ Development of Intellectual Property Rights (IPRs) by science both as a tool signaling their technology competence as well as serving as a base for licensing technologies to enterprises. IPRs are not limited to the establishment of patent portfolios, but also include the protection of design typologies, the establishment of frameworks for Material Transfer Agreements (MTAs), the protection of databases, the property rights on tissue banks, etc. → companies increasingly demand properly protected academic research results;**
- ◆ In this context *IP is and will* remain important → one of the big misinterpretations of “open innovation” is that IP is superfluous, a nuisance, at odds with cooperation ...**
- ◆ IP will have to be dealt with in a more sophisticated & complex way than before;**



# ***The changing role of “ISLs” ...***

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## **◆ Understanding the need for industry – science links:**

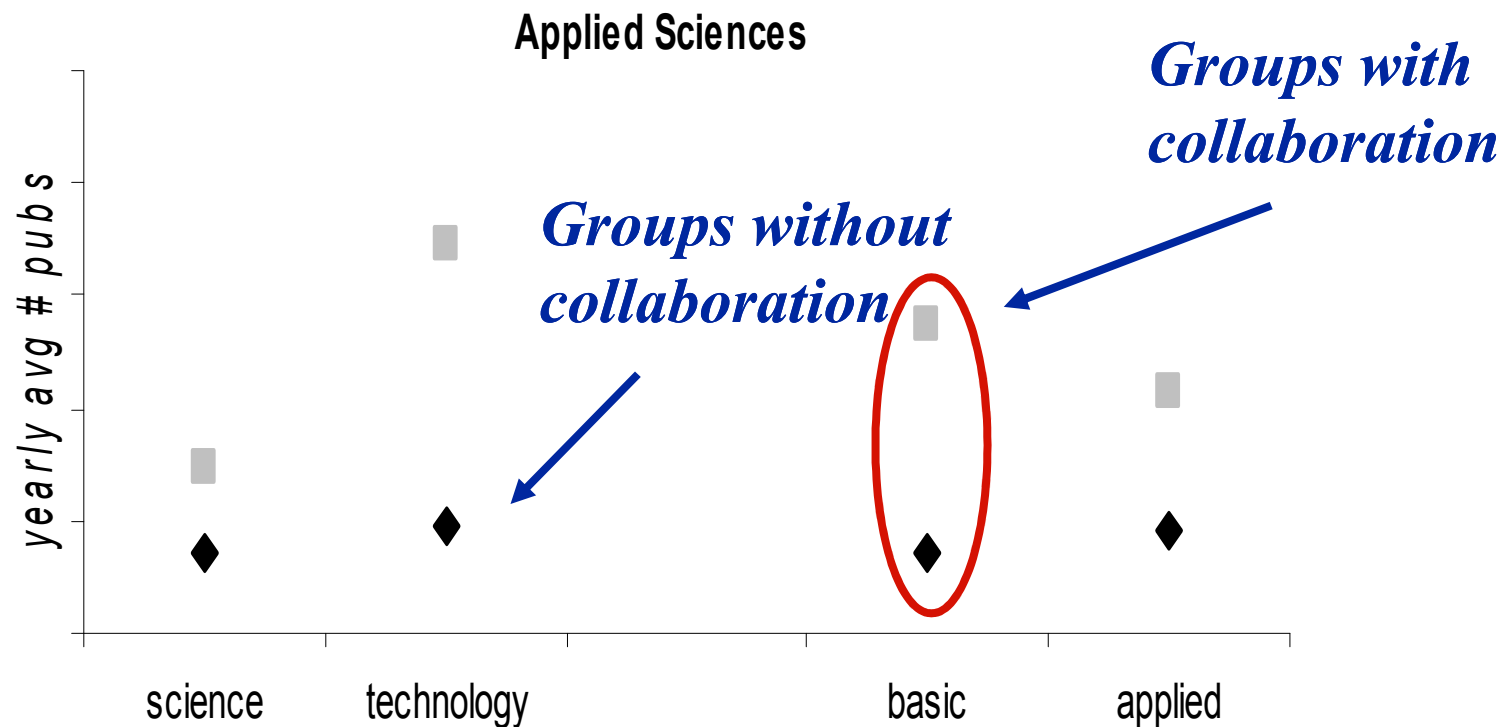
### **❖ And of course ... IP:**

- ◆ Hence, the emergence of innovative *joint* science & technology platforms to foster clustering of competencies & resources (at various levels, e.g. IMI-initiative EC, CD3-EIF/LRD, SIM, CTBI, ...) to enhance exploitation potential & likelihood, joining forces on IPRs;**
- ◆ Moving from IP transfer to the joint generation & exploitation of IP, including the creation of joint financial returns. Thereby stressing the need for industry to respect academic rights & the need for scientists to understand industry imperatives;**
- ◆ Given the increasing shift in emphasis by public authorities from non-directed R&D funding to strategic basic research & innovation, they also further push the frontier in the direction of joint IP generation & exploitation.**



# Collaboration: a positive effect ...

- ◆ Groups involved in technology transfer also publish more basic scientific work (data based on ISI-SCIE):



*Source: Van Looy, Debackere et al., Research Policy, 2004*

# The additionality of R&D policy

(Source: Steunpunt O&O Indicatoren, Leuven) . . .



Table 11: OLS and IV regressions on R&D expenditure – Full sample

	OLS	IV	OLS	IV
	Dependent variable:			
	RD	RD	ln(RD)	ln(RD)
<i>AMT</i>	10.922 ***	11.747 ***		
	0.819	0.519		
ln( <i>AMT</i> )			0.579 ***	1.340 ***
			0.078	0.427
ln( <i>EMP</i> )	0.611 ***	0.600 ***	1.153 ***	0.977 ***
	0.107	0.106	0.125	0.158
<i>PSTOCK/EMP</i>	0.188	0.172	0.243 ***	0.115
	0.122	0.134	0.078	0.139
<i>GROUP</i>	-0.125	-0.116	0.611 **	0.628 *
	0.136	0.135	0.310	0.321
<i>FOREIGN</i>	-0.042	-0.044	-0.577 *	-0.395
	0.228	0.229	0.340	0.370
<i>EXPORT</i>	-0.026	-0.036	2.027 ***	1.662 ***
	0.215	0.214	0.426	0.472
<i>CASHFLOW/EMP</i>	1.505	1.276	3.577	2.880
	1.634	1.583	2.232	2.456
<i>DEBT/TOTAL ASSETS</i>	-0.150	-0.153	0.225	0.216
	0.139	0.141	0.225	0.243
<i>KAPINT</i>	0.236	0.229	0.190	0.186
	0.172	0.170	0.587	0.582
Intercept	-2.261 ***	-2.211 ***	-7.491 ***	-1.613
	0.485	0.481	0.958	3.337
Test on joint significance of industry dummies	F(11, 753) = 1.63*	F(11, 753) = 1.59*	F(11, 753) = 3.74***	F(11, 753) = 2.34***
Number of obs.	774	774	774	774
Pseudo R <sup>2</sup>	0.475	0.474	0.341	0.297

\*\*\* (\*\*, \*) indicate a significance level of 1% (5, 10%). The regression includes 11 industry dummies.

IV regressions: Instrumental variable is the amount of subsidies received up to 1997.

# ***Case: Creating entrepreneurial clusters around universities ...***

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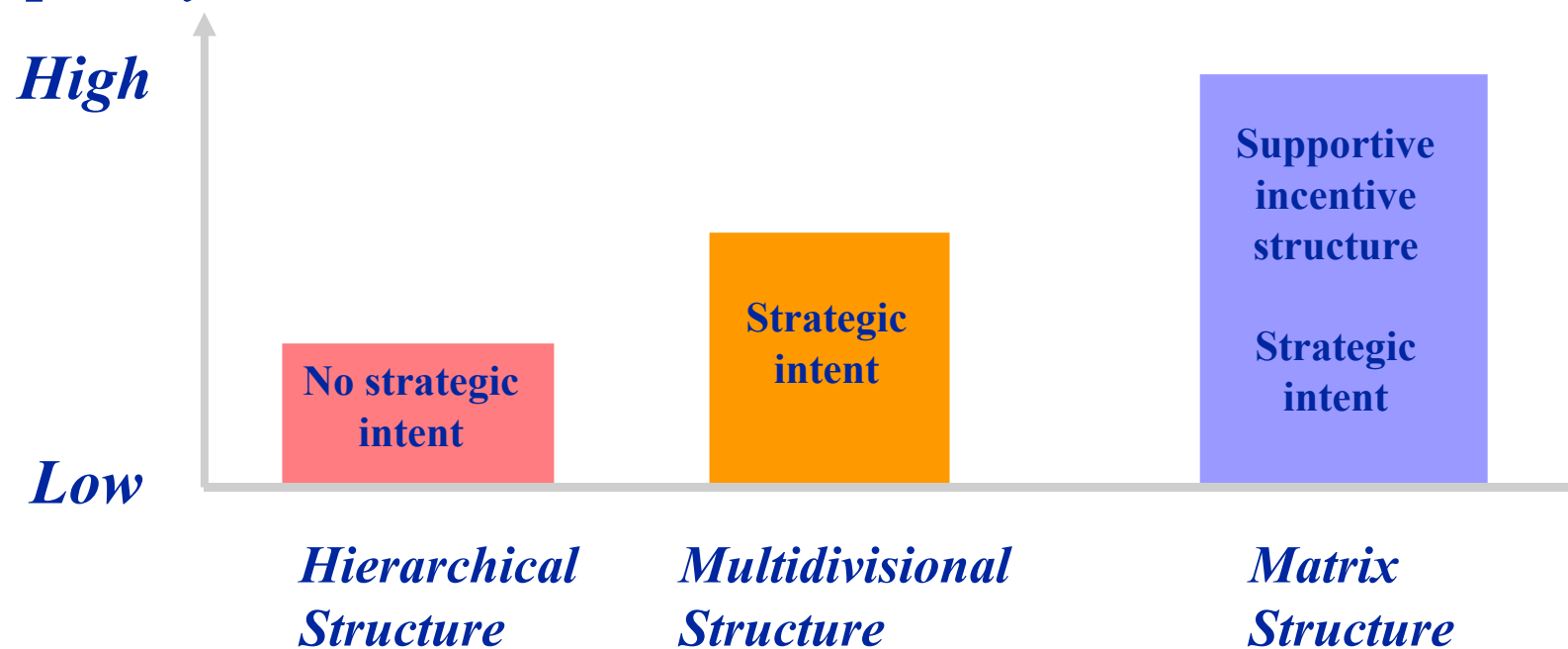


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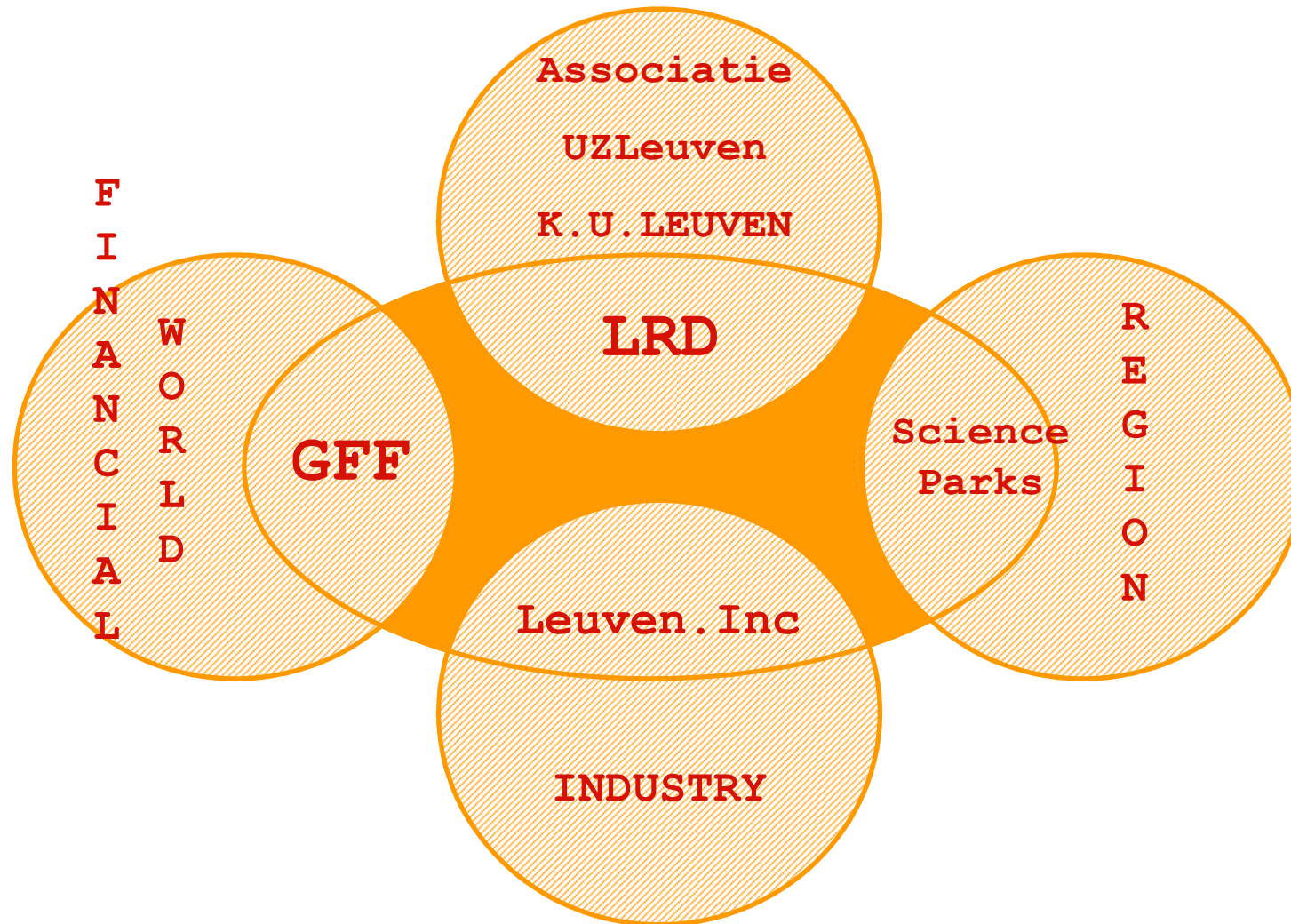


# From vision to structure

*Propensity to commercialise*



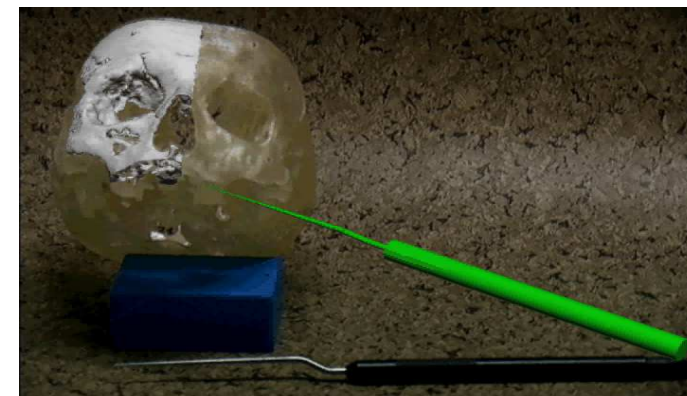
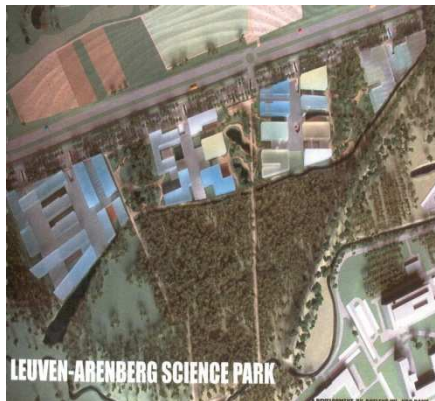
# Creating a networked incubator around the university ...



# Stimulating entrepreneurship in Leuven ... more than 120 spin-offs ...



The screenshot shows the website for Leuven Innovation Networking Circle. The header includes the logo and the text 'LEUVEN.INC LEUVEN INNOVATION NETWORKING CIRCLE'. Below the header, there is a search bar and a news section. The news section contains several articles, including one about Deroose Plants investing in expansion and another about HitsIntoMetrics. The sidebar on the right contains links for 'About Leuven.Inc', 'Membership', and 'Login'.



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# Providing seed capital ... through a partnership with the financial sector



Recently, K.U.Leuven has taken several additional initiatives to live up to its responsibilities. These include an inter-faculty course 'Introduction to Entrepreneurship', and the formation of the Gemma Frisius Fund (together with the 'Generale Bank' Group and the 'Almanij-KBC' Group) to provide venture capital. The first few years of activity have clearly demonstrated that these initiatives are really serving a need.

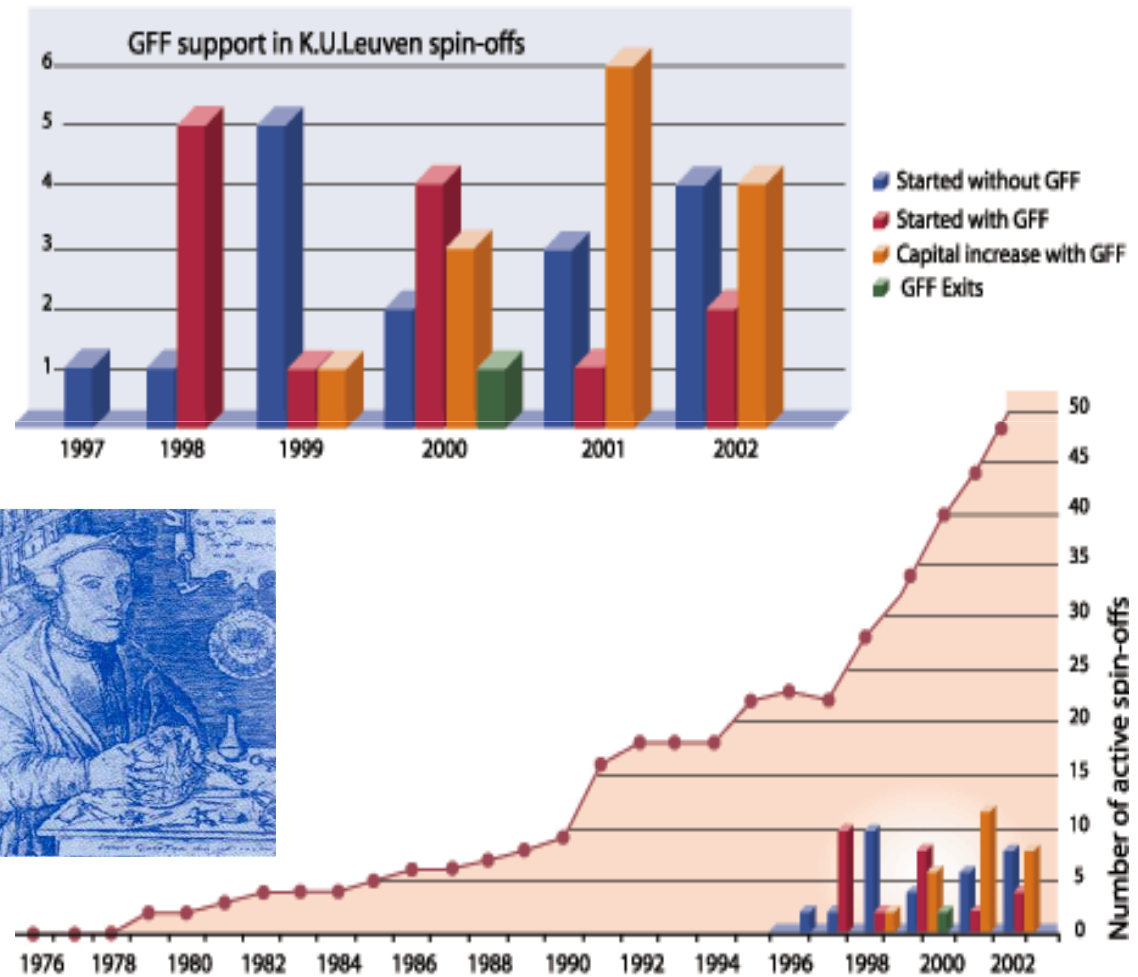
Research and education will always be the prime objectives of any university, rather than the creation of spin-offs. As a matter of fact, spin-offs can only thrive if research quality is given due importance. Without attaining international research quality standards, the results cannot be exploited at all. If, however, a high level of quality is reached, starting spin-offs is self-evident.

We hope this brochure will convince its readers of the diversity, originality and professional approach of K.U.Leuven's spin-offs, and that it even functions as a source of inspiration for future initiatives. As for the companies themselves, we wish them a safe journey on stormy industrial seas.

Prof. K. Debackere  
Managing Director  
K.U.Leuven R & D

Prof. R. De Bondt  
Chairman  
K.U.Leuven R&D

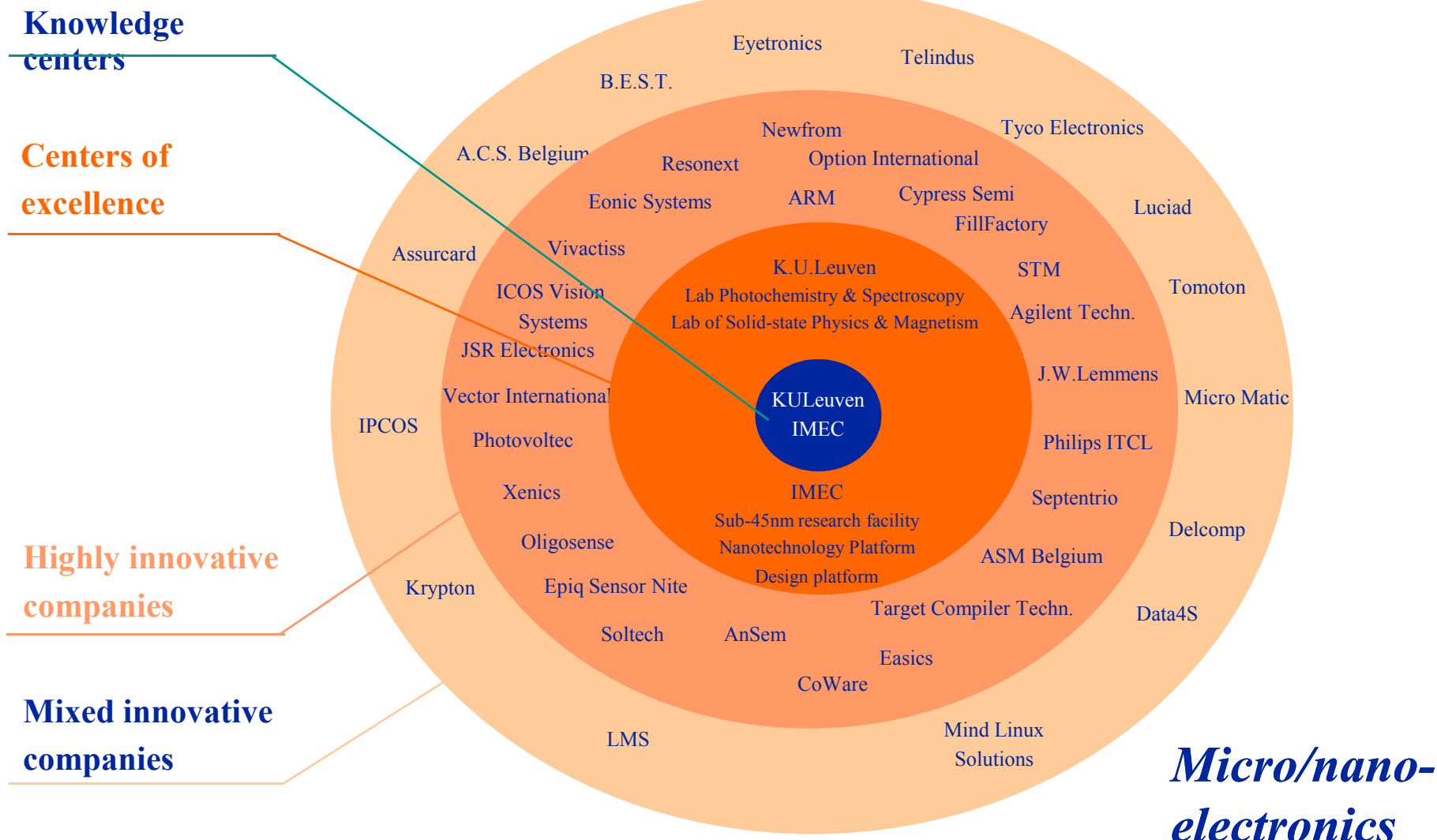
Prof. A. Oosterlinck  
Rector  
K.U.Leuven



**68 companies end 2005**

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# Leading to highly innovative regional clusters of entrepreneurial activity ...



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# Networking opportunities in Leuven:



## ◆ Horizontal Network: Leuven.Inc



- ◆ Network organisation stimulating contacts between university, IMEC, high-tech start-ups, innovation actors, support activities such as consulting agencies and venture capitalists, and established companies in the Leuven area.

## ◆ Vertical Networks: technology clusters

### ❖ DSP Valley

- ◆ Focusing on the design of hardware and software technology for digital signal processing systems.



### ❖ L-SEC (Leuven Security Excellence Consortium)

- ◆ International, non-profit network organisation dedicated to promote the use and advance of e-security.



# Moving beyond borders, opening up innovation ...



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# Moving beyond borders, opening up innovation ...



K.U.Leuven is involved in the ELAt-interreg project with the following partners:



**But...ELAt is a lot more:**

- ... starting new research centres such as the Holst Centre (IMEC & TNO)
- ... extending existing technology cluster networks such as DSP-Valley
- ... extending partnerships & collaborations with companies & universities within the ELAt region

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# What breeds this success?

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**Basis = a critical mass of high quality, internationally competitive research;**

**Integrated approach towards research exploitation: multidisciplinary team & “high value added” services via LRD team + Gemma Frisius Fund seed capital partnership (with Fortis Private Equity & KBC Investco);**

**Clear incentives and policies to encourage, individuals research groups and departments to actively pursue spin-off opportunities;**

**Creation and acceptance of entrepreneurial climate in a university context;**

**Flemish legal context that is highly positive with respect to the exploitation of academic research and IP.**