

Is the EIT a model for realizing the knowledge triangle?

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About discovery, invention, translation innovation &

DEFINING THE TERMS

- **Discovery:** finding something existing before
 - **Invention:** creating or designing something not existing before
 - **Translation:** processing discoveries and/or invention into innovations
 - **Innovation:** making changes with societal impact, based on discoveries and/or invention
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***Science & Research are necessary,
but not sufficient for innovation***

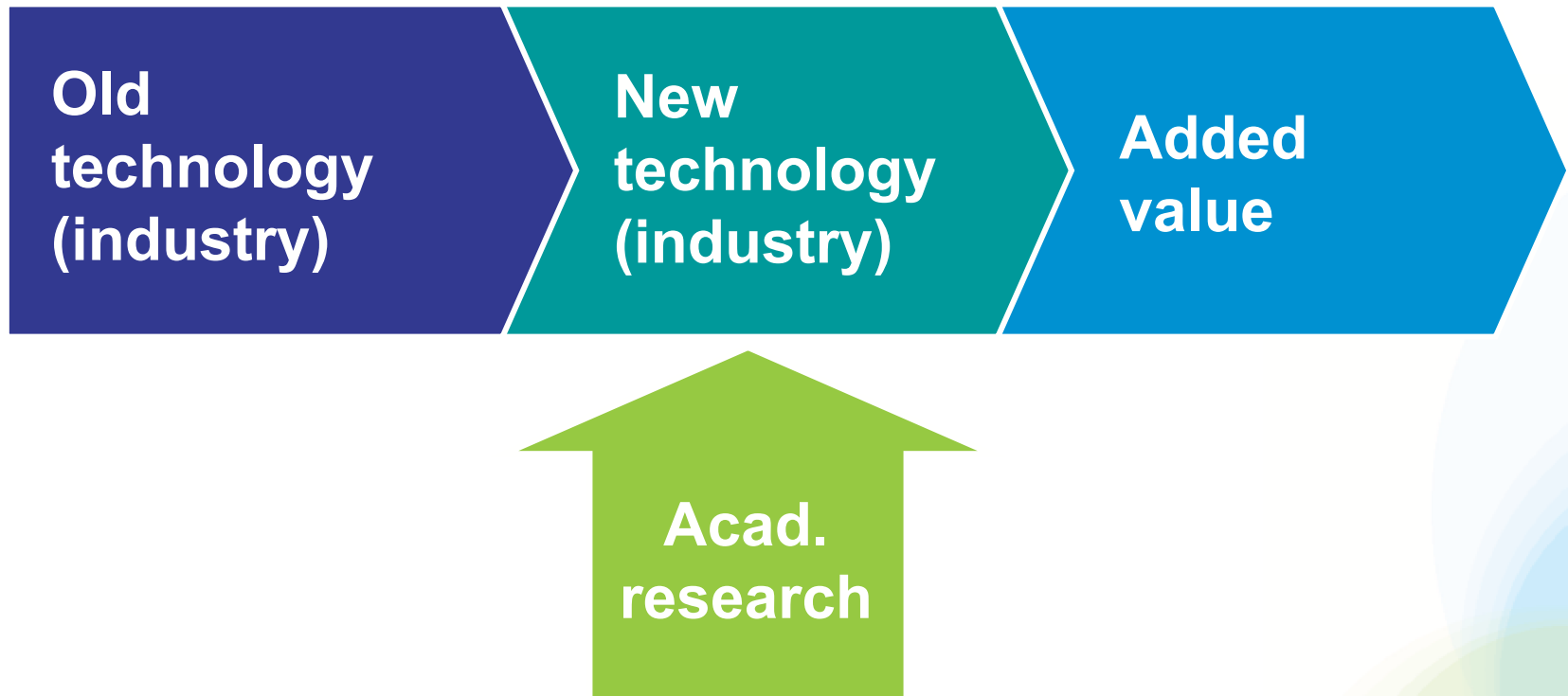
Academia, innovation & industry – traditional model (Francis Bacon; 1561 – 1626)

LINEAR TECHNOLOGY EVOLUTION



Academia, innovation & industry - Californian model (Adam Smith; 1723 – 1790)

BRANCHED TECHNOLOGY EVOLUTION MODEL



* Leary et al
2002

More than half of economic growth during 1945 – 2002 is attributed to innovation within the high-technology sector*

Biotech example: EU has strong assets to support a strong innovation-driven industry

HOW TO CAPITALIZE ON THE ASSETS?

- High level of education
- Solid academic base
- Top science at many historical power houses of research: EMBO, Pasteur, Karolinska, Cambridge, Oxford, Max Planck, VBC etc..
- Increasing number of Centers of Excellence
- Long tradition of pharmaceutical development and industry
- Excellent clinical institutions with the potential to carry out studies
- Growing interaction between the national bio-medical scenes
- Scientific output in biotech is even larger than in the USA

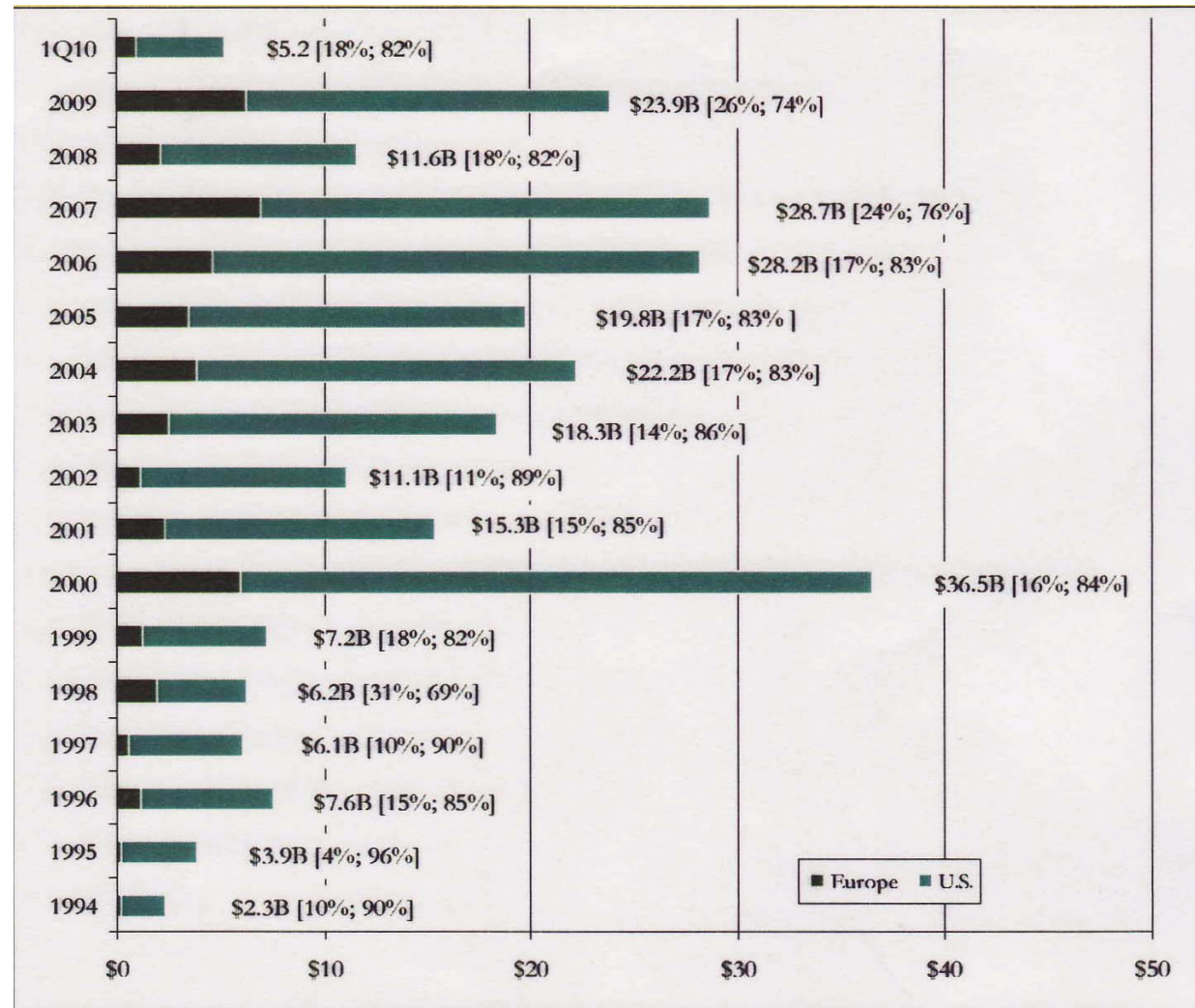
Biotech example: However, does European biotech exploit its chances?

CREATING VALUE - CREATING JOBS

	Europe	USA
No. of employees	63,000	172,000
Average Investment per year	EUR 6 bn	EUR 18 bn
Public listed	<10%	>30%
Origin of patents from commercial enterprises	~ 28%	~ 52%
Total value of companies	EUR ~30 bn	EUR ~300 bn

The fuel of innovation is venture capital from private and public markets

EXAMPLE BIOTECH FUND RAISING: USA VERSUS EUROPE



Source:

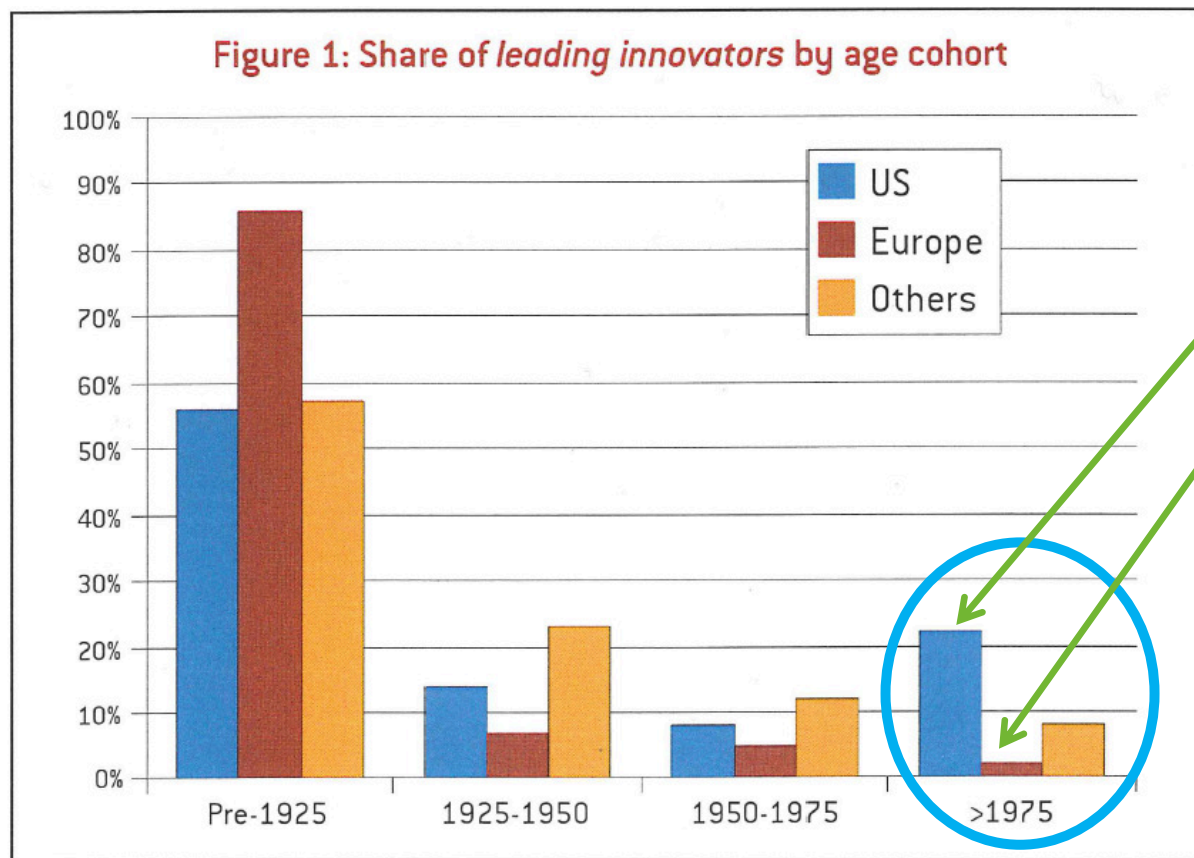
Biocentury, May 2010

So what's wrong with Europe?

**Why do we underperform in
innovation?**

**Why do we miss to
recruit venture capital leading to
innovation?**

Age distribution of companies' contribution to innovation: Europe v. US and others



US: approx. **21%**
EU: approx. **2%**

Source: author's calculations. Note: Figure based on a sample of 226 companies, obtained from matching firms in the FT Global 500 from 2007 with the 2007 EC-IPTS Top 1000 EU and non-EU R&D scoreboard companies. Leading innovators are thus defined both by their market capitalisation and R&D expenditures. The US has 80 companies in this sample, Europe 86 and other countries 60.

Major road blocks counteracting innovative entrepreneurs in Europe

- prevailing averse public mindset towards entrepreneurship, ownership and risk taking,
- lack of light towers of entrepreneurial “role models”, like Gates (Microsoft) and Boyer (Genentech)
- lack of a supportive attitude by academic teachers towards colleagues and trainees, seeking an entrepreneurial path in their life, and
- lack of incentive structures and risk capital; which is ironically counteracted by a surplus of red tape thwarting the set up of innovative businesses.

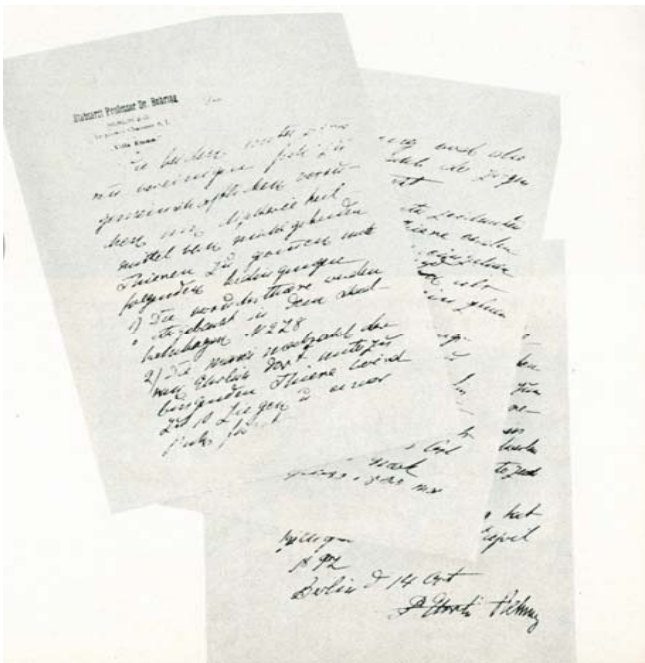
→ **Opportunity windows are missed**

Innovation driven by entrepreneurs, an accepted paradigm in Europe of 1900

e.g.: BEHRING'S & EHRLICH'S SERUM BIOTECH COMPANY



Homed in an arch of a suburban railway in Berlin - 1894



Contract between the Founders - 1894

1 cow, 7 goats and 10 employees

Behring, Nobel, Citroen, Siemens, Reuter European history, but Boyer, Gates and Zuckerberg – US reality!

HOW TO MOTIVATE KIDS TO SET UP GARAGE COMPANIES IN EUROPE?



One definition of entrepreneurial innovation: “A Grapefruit is a lemon who took a chance”

Changing the mindset: the first step towards innovative entrepreneurship

OUR HORIZON NEEDS TO BE RESHAPED

– Joseph Schumpeter:

The entrepreneur uses the invention, new idea and transforms it into a product and thereby brings the innovation to the market

– Academic success is not enough:

"Dear Alex, he (Bill Gates) and I were in the same class at university - but he was smarter and didn't graduate. Cheers Rich" (Richard Hudson, former editor of Nature)

– Career goals need to be redefined:

When graduates from India and Europe are asked for their future plans, 25% of the Indian students want to become entrepreneurs, but only 2% of the European students

The core of innovation is the Knowledge Triangle driven by entrepreneurship

Actors in the knowledge triangle are at the core of the **innovation web**



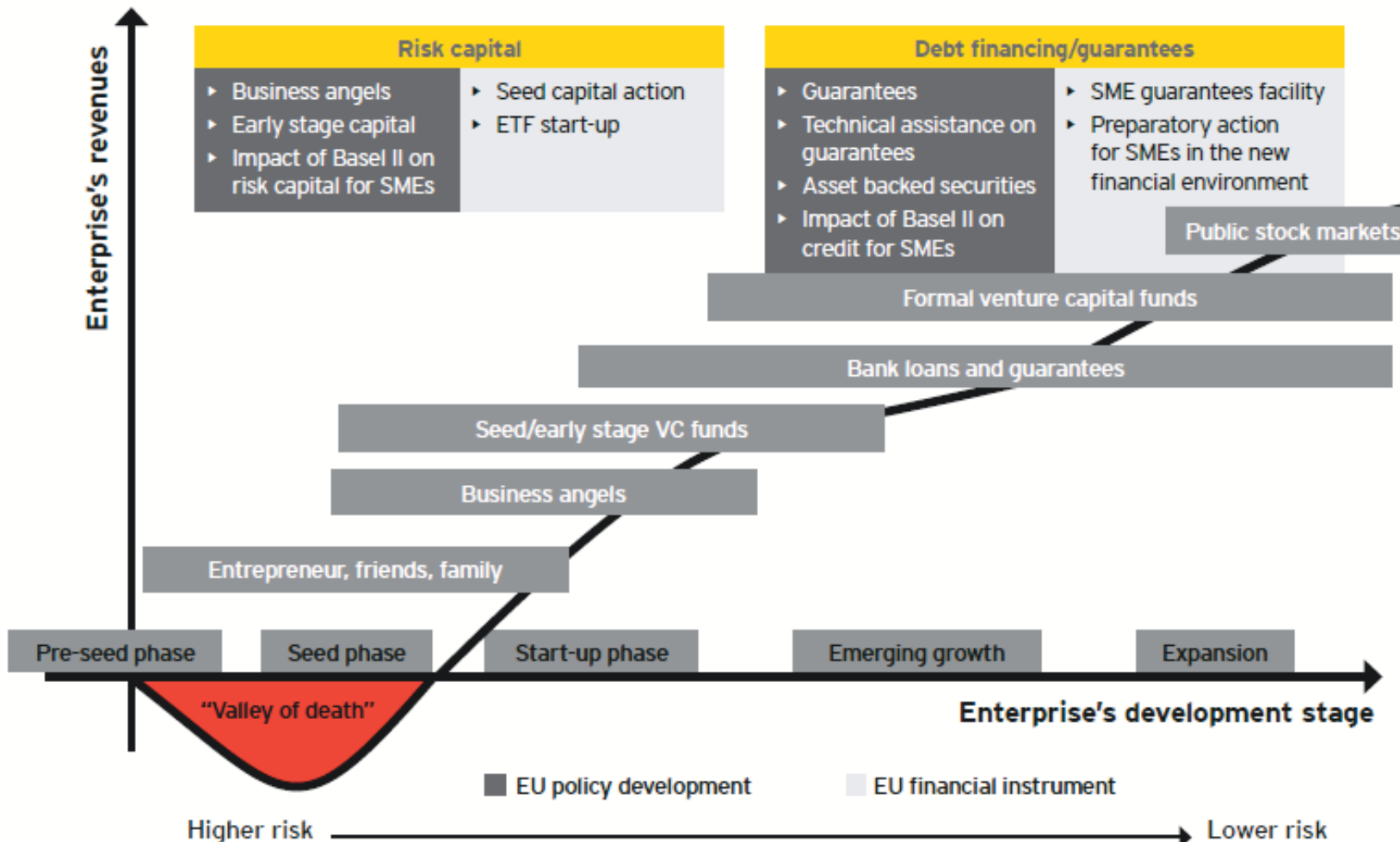
EIT - an Innovation Impact Investment Institute

- The EIT is an EU Institute that **encourages, seeds** (25%) and **enables** existing European education, research and business **hotspots** to form entrepreneurial and excellence driven innovation clusters - its **KICs**
- The KICs are driven by **entrepreneurship** to provide **higher innovation impact**

Where the EIT comes in: Seeding entrepreneurship

SME development and funding instruments

Source: Renda et al. (2006)

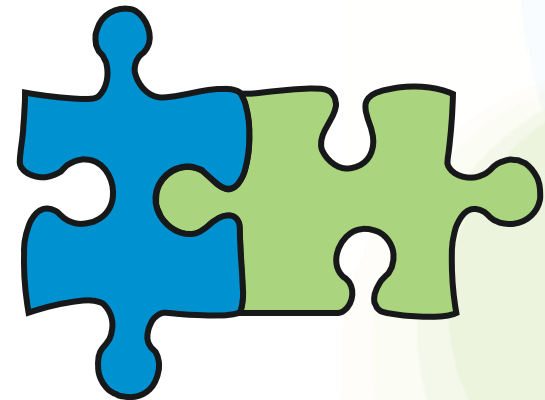


European Institute of Innovation and Technology (EIT)

1. The EIT, established in September 2008, is the first initiative of the European Union bringing together **all the three sides** of the knowledge triangle.
2. It is an EU institute with unprecedented **autonomy** and HQ in Budapest.
3. Its **Mission** is “to be the catalyst for a step change in the European Union’s *innovation capacity* and *impact*”

EIT operates via Knowledge and Innovation Communities (KICs)

- **KICs =**
highly integrated, creative and excellence-driven autonomous partnerships; internationally distributed but thematically convergent partners
- **KIC partners =**
key actors from the knowledge triangle: research, higher education and business



KICs Co-Location & Culture

- **Co-location hotspots**

- The KICs' innovative "webs of excellence" consist of four to six innovation hotspots where all the elements of the Knowledge Triangle are co-located.
- Additional Regional Innovation and Implementation Centres (RICs) help address geographical coverage and cohesion through Europe.

- **Culture**

- KICs are shaped by strong **entrepreneurial mindsets** and cultures and driven by common visions and goals/impact expressed in a **business plan**, led by a **CEO**.

KICs' specificities

- **Smart funding**

- EIT funding or seeding of the KICs accounts for only 25% of the total KIC budget.
- Remaining 75% reflects the commitment of the KIC partners , but also from regional, national or European funding attracted by the partners.

- **Legal and financial entity**

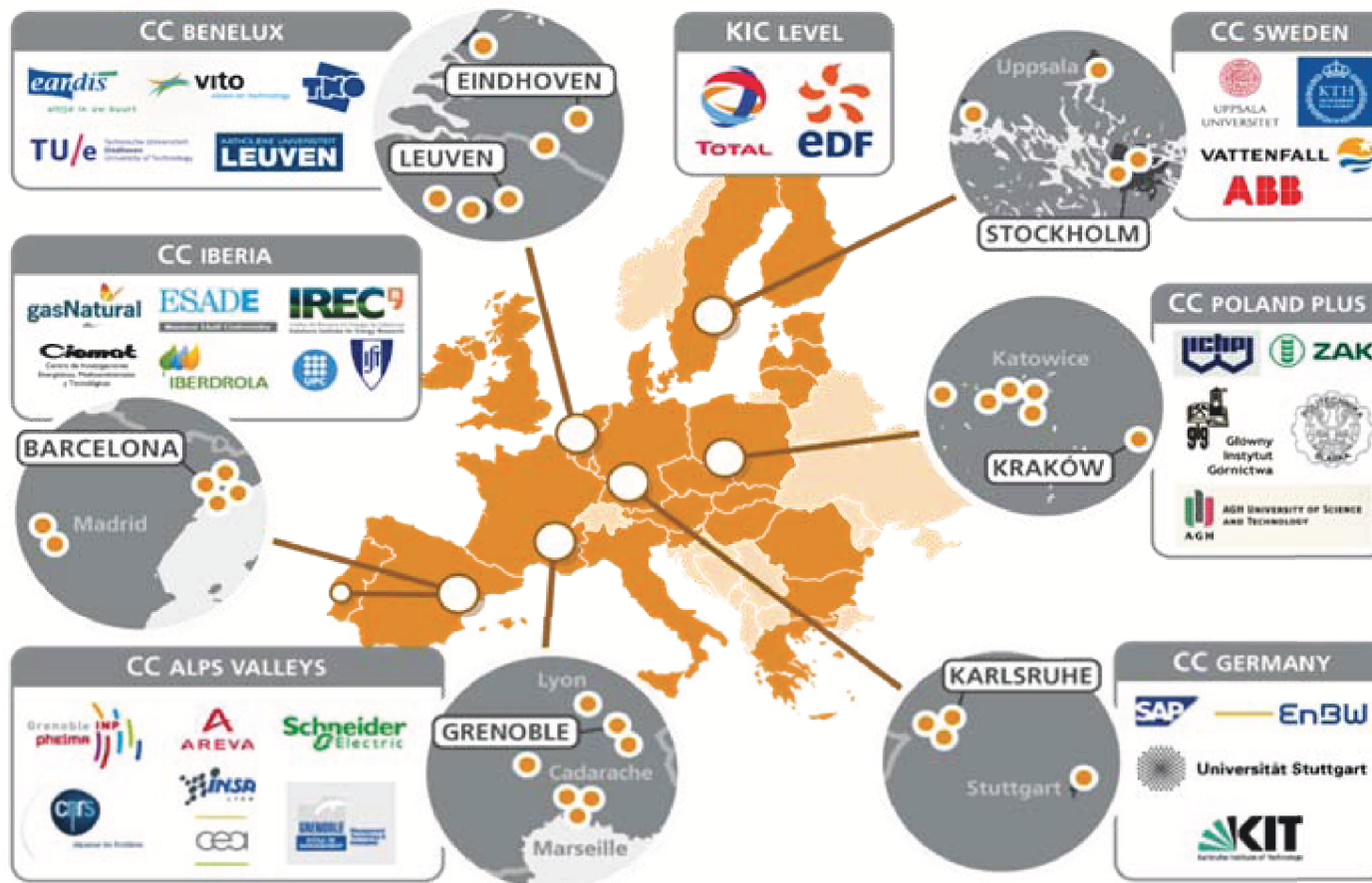
- Core partners have formed **legal entity**
- Led by a **CEO** under a **supervisory board**
- **Business plans** as a moving target controlled by **project management** and **milestones**

EIT strategic work streams

Next steps:

1. Building up of the EIT and the KICs by further development of the EIT HQ and of all KIC co-location centres as a hotspot driving innovation;
2. Further development of **entrepreneurship education** within KICs sealed and branded by an EIT label;
3. Continued focus on new **business creation** within KICs based on **entrepreneurship** leading to
 - i. new products and services for existing industry,
 - ii. new businesses and SMEs and
 - iii. better entrepreneurially minded and trained people.

Example KIC InnoEnergy A world class alliance of top European players with a proven track record



- 13 companies, 10 research institutes, 13 universities
- ~50% industry partners (incl. associated partners)
- >50% of key research players in Europe
- Covering the whole energy mix
- Knowledge triangle balanced along all dimensions
- Strong connection with VCs and local governments

EIT Added Value: implementation of the first three KICs with 23 centres and associates

Climate-KIC:

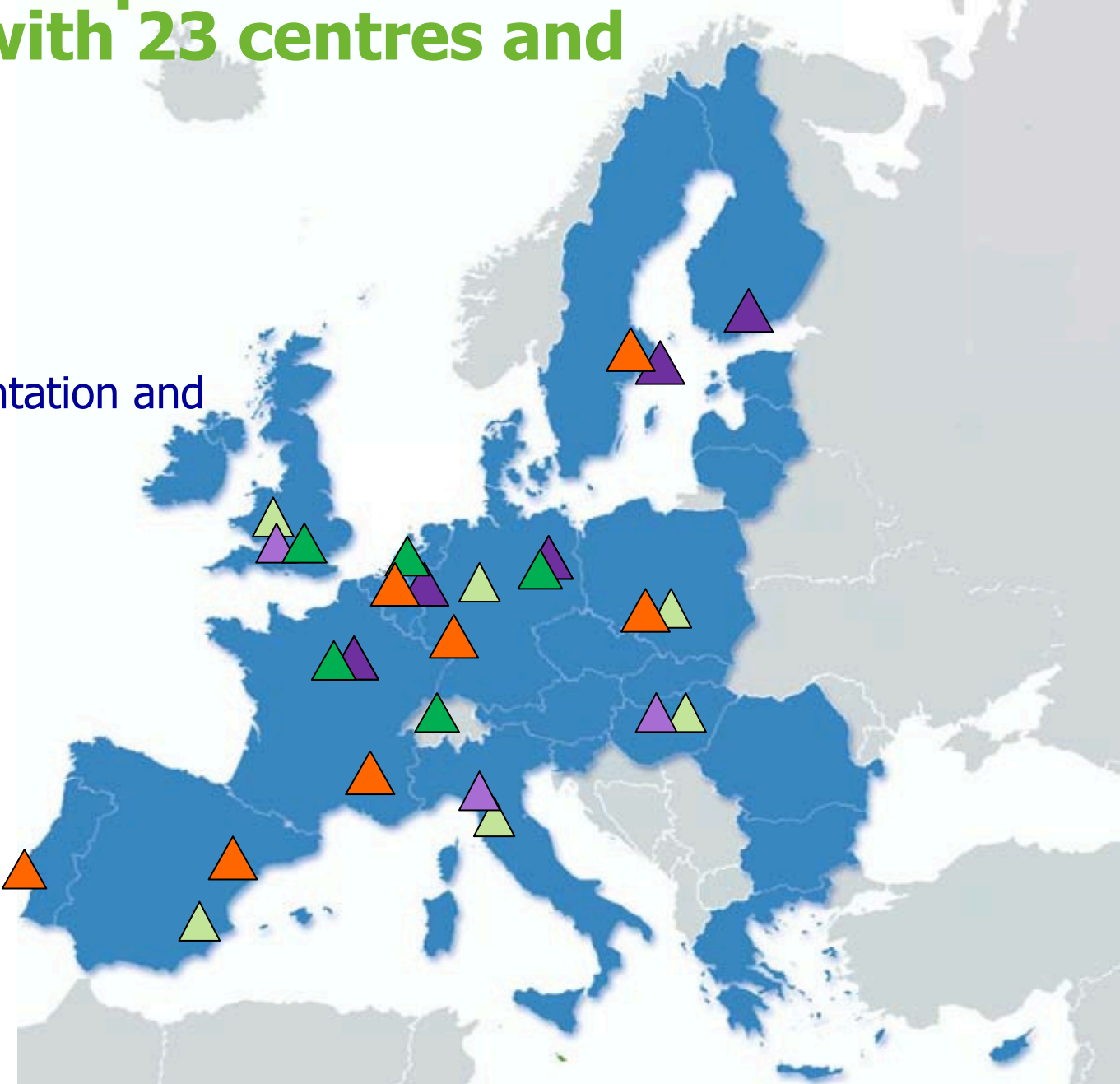
- ▲ Co-location centre
- ▲ RIC (Regional Implementation and Innovation Centre)

EIT ICT Labs:

- ▲ Co-location centre
- ▲ Associate Partner

KIC InnoEnergy

- ▲ Co-location centre



Some early results from the KICs ..

- Climate KIC: As a result of a business plan competition, two Climate KIC projects have been awarded seed funding. One group, DeCo! won the international SEED award 2010



- EIT ICT Labs: One project has received 5.8 million € funding from the French national research agency (ANR) to develop new internet technology

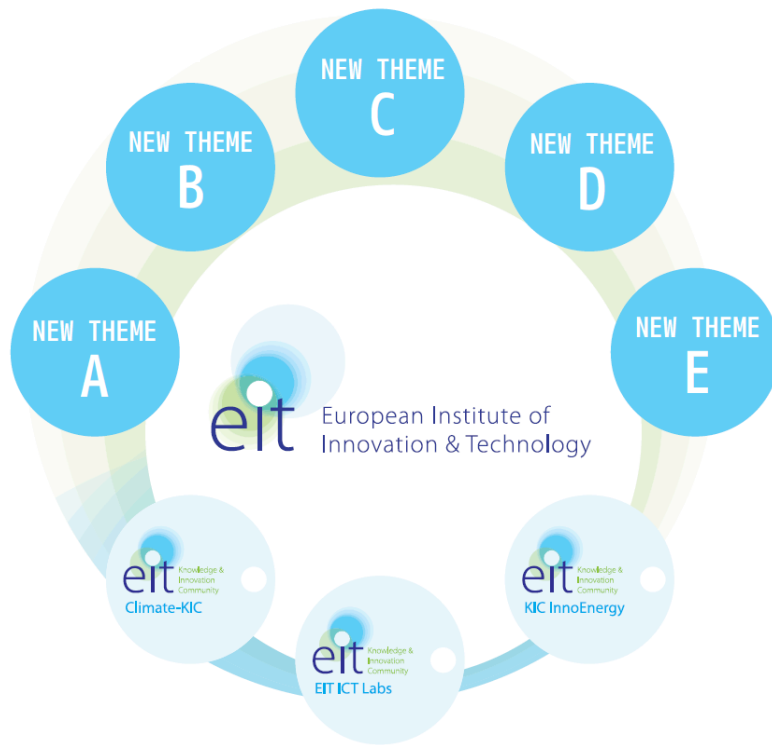


- KIC InnoEnergy: Its postgraduate degree programmes are hugely popular already in their first year: 850 students applied for 220 available places

The role of the EIT - an Innovation Impact Investment Institute

- The EIT encourages, seeds and enables existing European education, research and business hotspots to form KICs
- The EIT will accompany KICs in their learning curve and monitor their success, but also gather information, how to build KICs and make it available to others
- The EIT is proposing to set up 7 - 10 further KICs until 2020, as outlined in the SIA
- Innovation is risk, thus the EIT also expects KICs to fail, as a venture fund does seeding high tech companies

The EIT's Vision for the Future: Strategic Innovation Agenda (SIA)



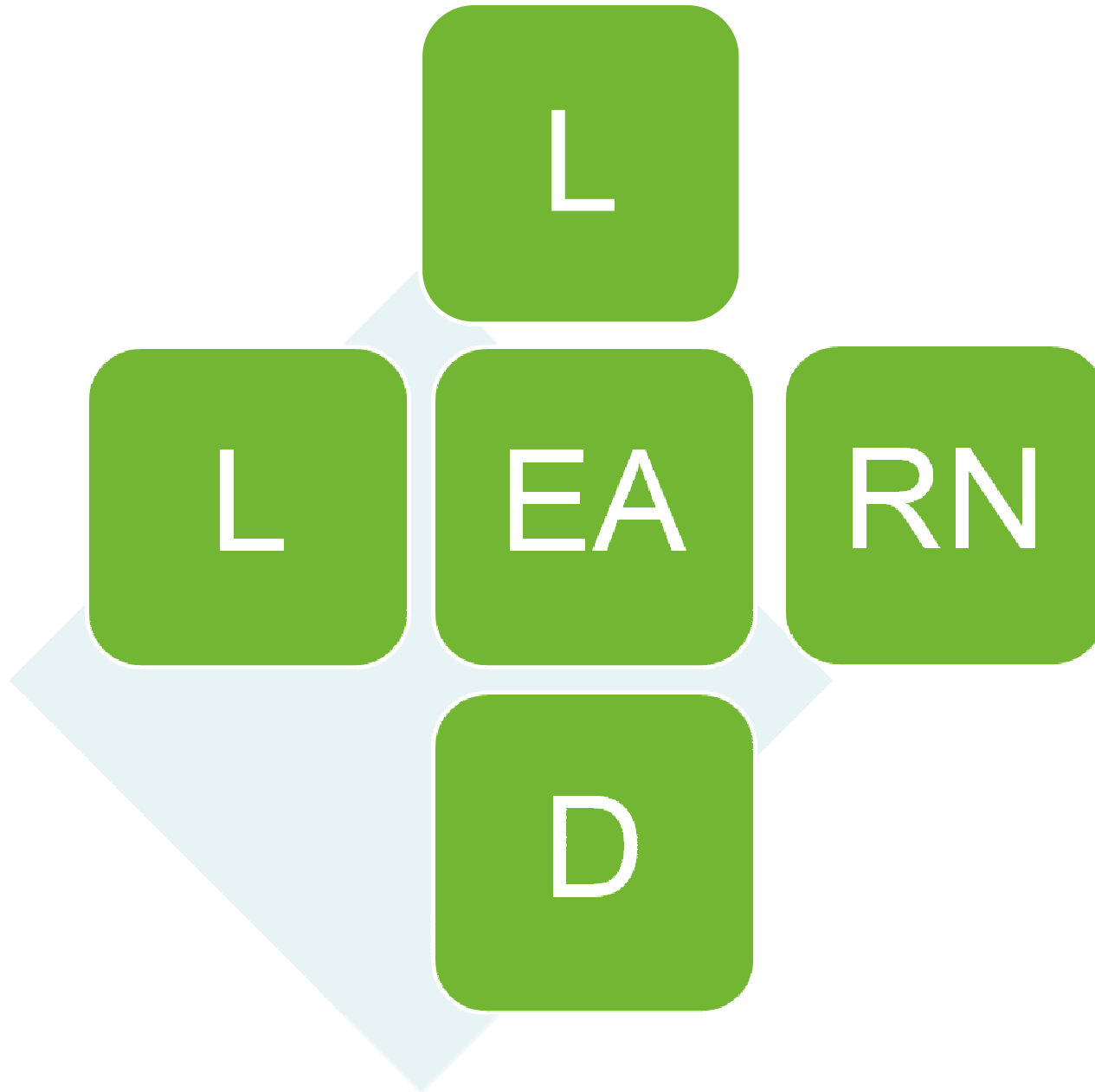
Initial theme ideas for the envisaged new KICs that are to start activities in 2014 include:

- **Learning and learning Environment**
- **Human Life and Health**
- **Food for Future**
- **Manufacturing by/for Creative Beings**
- **Security/Safety**
- **Human Mobility and Smart Cities**

The initial themes remain included (climate change adaptation and mitigation, future information and communication society and sustainable energy)

The EIT's Role in the European Innovation Landscape

The EIT should be part of the Common Strategic Framework for Research and Innovation (CSFRI) while maintaining a strong link with the European Higher Education Area (EHEA). However, at the same time, any rules applying to the EIT will have to remain tailor-made and fully flexible to fit the EIT's mission!



Thanks!