EIT: the European Institute of Innovation & Technology

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ViceChairman of the EIT

Kiev 16 September 2011, *Innovation in Europe*

European Institute of Innovation & Technology

Innovation in Europe

Europe

- Innovation Union 2014-2020, IP1 60 billion €
- Streamline
- Align with national funding
- Smart specialisation
- ERC, Grand Challenges + innovation
- EIT, investment + innovation + business

Changes I

- Stone age, Bronze age, Iron age, Silicon age
- Internet age, Entrepreneurship age, Dream age
- Academic freedom or Academic peace
- Globalisation
- Challenges! Not scientific. Problems created by us to be solved by us.
- Demography, Climate, Urbanisation, Resources

Changes II

- Research quality not only quality in research
- Consumers as education and innovation
- Knowledge triangle
- Political decisions
- Research quality, research excellence and research impact

Changes III

- The professional role of an academician; from passive expert role to active entrepreneurial and leadership role
- New and old stakeholders
- New knowledge and new competent people are equally important as research and education are

More and better innovation is urgently needed

- Communities
  → commons creation and preservation *(ex. electronic paper)*

- Supply chains
  → prohibitive cost, congestion, pollution require shortened supply chains *(ex. congested harbors)*

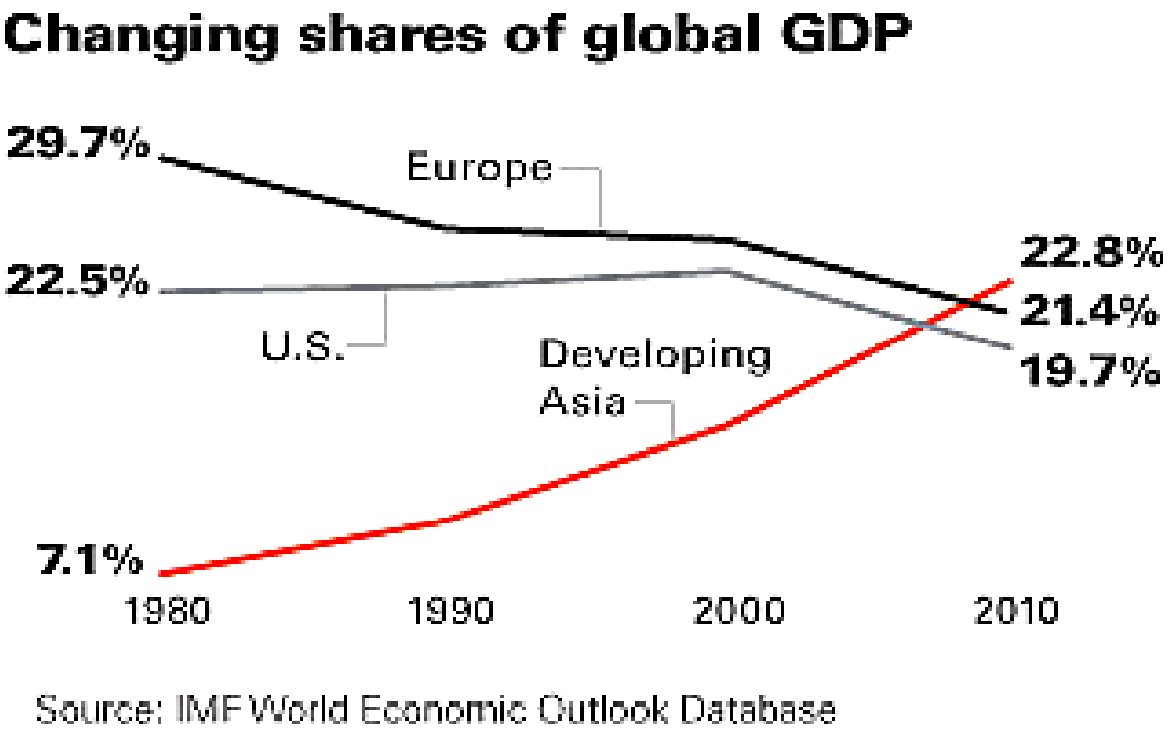
- Energy, demography, environment
  → crises offer new opportunities, but others seem to act faster *(ex. China)*

→ *Need for innovative solutions is clear*

→ *Challenges = opportunities we cannot afford to miss*

Push factors for action in innovation

- Crisis of Commons of product design and manufacturing
- Environmental & resources crisis
- The BRIC factor



Opportunities for Europe

- We research and invent well (but innovate lousy)
- We know how to work with Asia and its market (but are slow)
- We can exploit leadership in Green and Climate and in ICT (but note that China and India are taking the lead - energy efficient cars, highly efficient coal energy plants - and most ICT equipment is designed and manufactured in Asia)
- We can rebuild European innovation centers and supply chains (prohibitive energy cost) (but note short supply chains will be needed everywhere in the world)
- We educate good people (but need to do better for innovation)
- We do not keep alive old cars, technology, ...

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

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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: Does European biotech exploit its chances?

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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%
Total value of companies	EUR ~30,000 bn	EUR ~300,000 bn

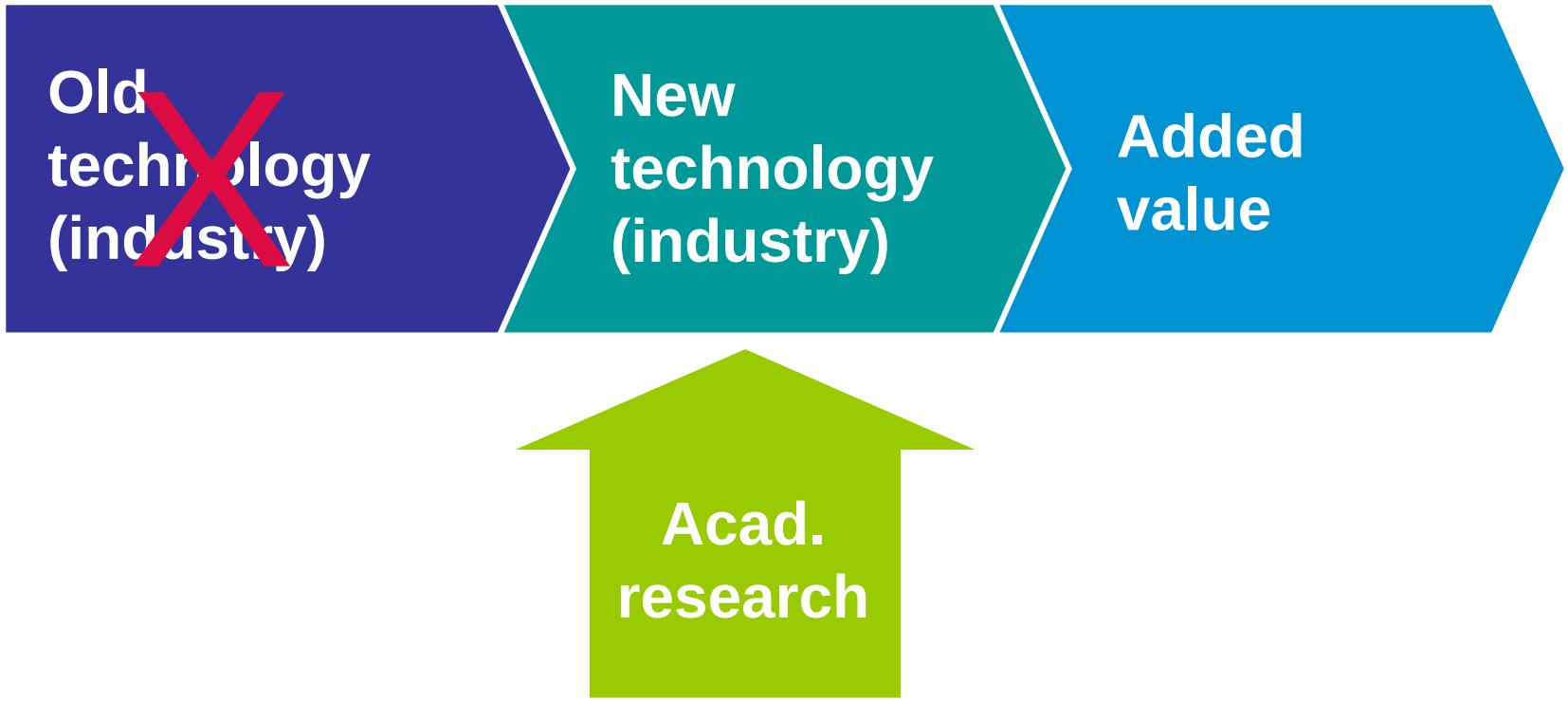
Europe Bio
Report for 2007

Academia and industry - traditional model (Francis Bacon; 1561 – 1626)

LINEAR TECHNOLOGY EVOLUTION

Academia and industry - Californian model (Adam Smith; 1723 – 1790):

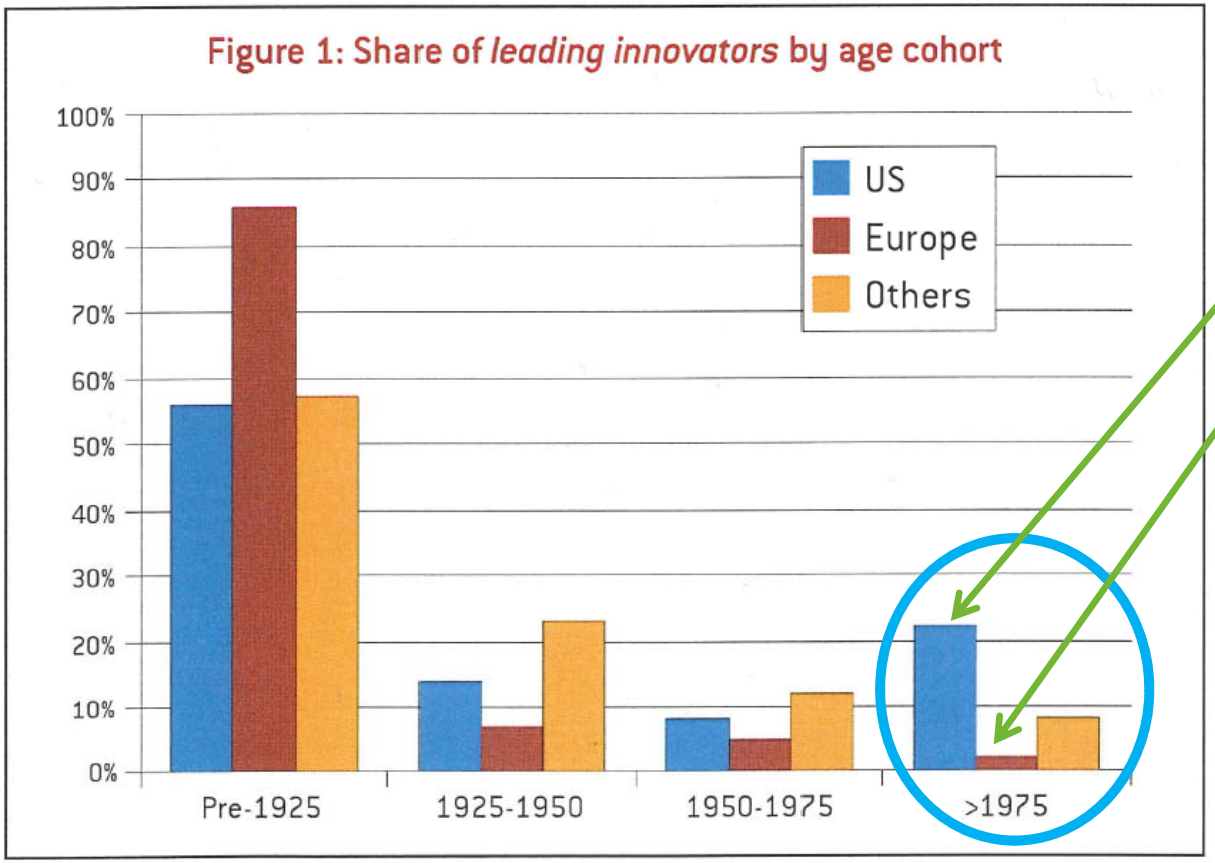
BRANCHED TECHNOLOGY EVOLUTION MODEL



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

* Leary et al 2002

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.

Bruegel policy brief
March 2009
Reinhilde Veugelers

Nobel, Citroen, Siemens, Reuter, Merrieux - history?
Boyer, Gates and Zuckerberg - US-reality!

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

- **One definition of entrepreurial 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 Anders, 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:**

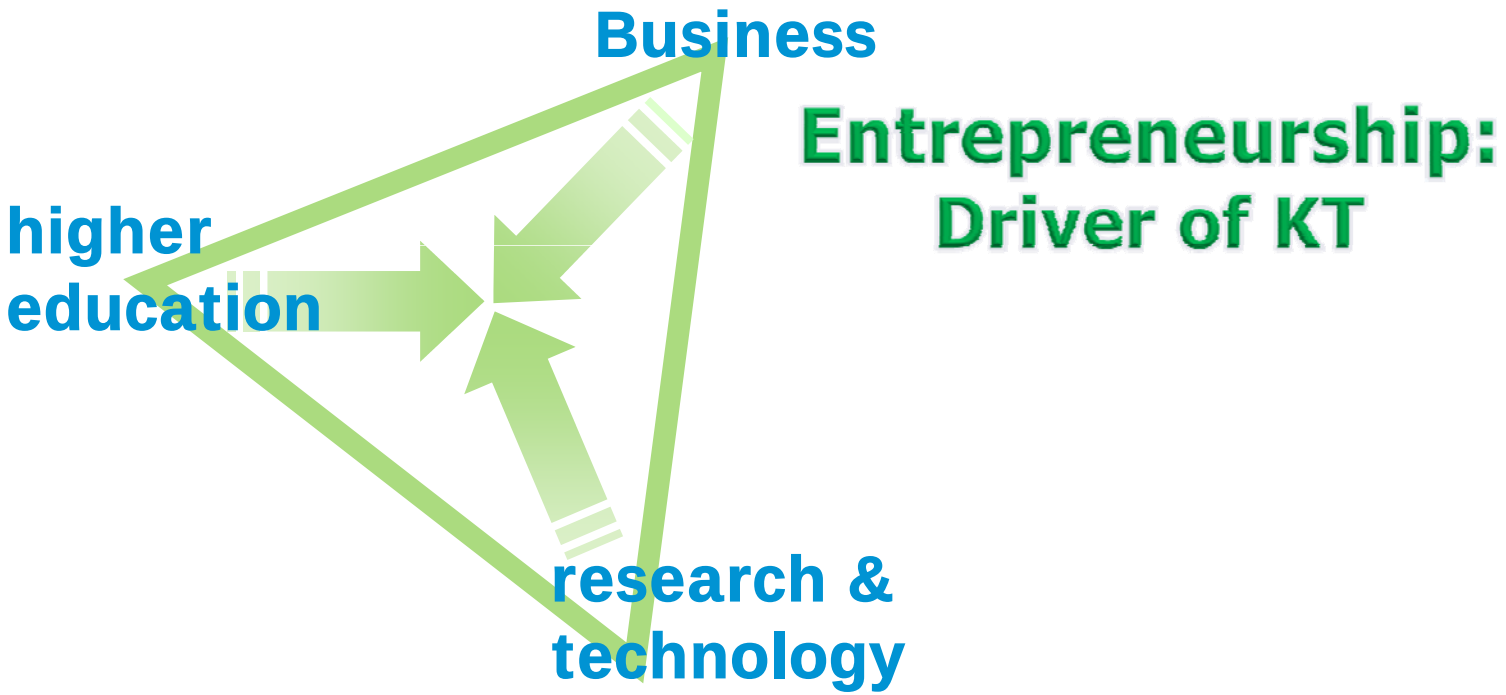
  When graduates from India and Europe are asked for their future plans, 25% of the Indian students want to become entrepreneurs, but only 2% of the European students

European Institute of Innovation and Technology (EIT)

Mission: Be the catalyst for a step change in the European Community's innovation capacity and impact

The core of innovation is the Knowledge Triangle driven by entrepreneurship

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



Pioneer towards a step change in innovation, mentality and approach:

- Fully integrate the knowledge triangle; e.g. co-locate
- Entrepreneurship: glue and drive
- Results and outcome oriented
- Can-do approach enabling/ empowering
- Leadership
- Investing not funding

KICs – essential *challenges* for impact

- **CEO type leadership** *leading to drive and focus*
- A **monitored business plan** around deliverables with targeted investment returns and drivers identified upfront *leading to relentless focus on results/deliverables/output*
- ***Co-location*** *of the knowledge triangle*
- ***Drive*** *the KIC through* ***entrepreneurship***
- A '**can do' attitude**, stipulating *empowerment and enabling people to develop new business opportunities*
- *Keep it* ***simple****, be* ***pragmatic,*** *take controlled* ***risk***

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**

EIT and KICs impact

Impact achieved through:

- addressing key **societal challenges**
- fostering world-class innovation hotspots through **co-location**
- turning ideas into **business creation** through entrepreneurship and;
- promoting the attractiveness of entrepreneurial education by **EIT labelled degree programmes**

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 and comes from the partners' own resources and 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
  - Governance structures differ from KIC to KIC
- **Culture**
  - KICs are shaped by strong entrepreneurial mindsets and cultures
  - Driven by common visions and goals/impact expressed in their business plans.

KIC thematic focus

First 3 KICs selected in December 2009

- Climate Change Mitigation and Adaptation:
  Climate-KIC
- Sustainable Energy:
  KIC InnoEnergy
- Future Information and Communication Society:
  EIT ICT Labs

Co-location hotspots

Climate-KIC:

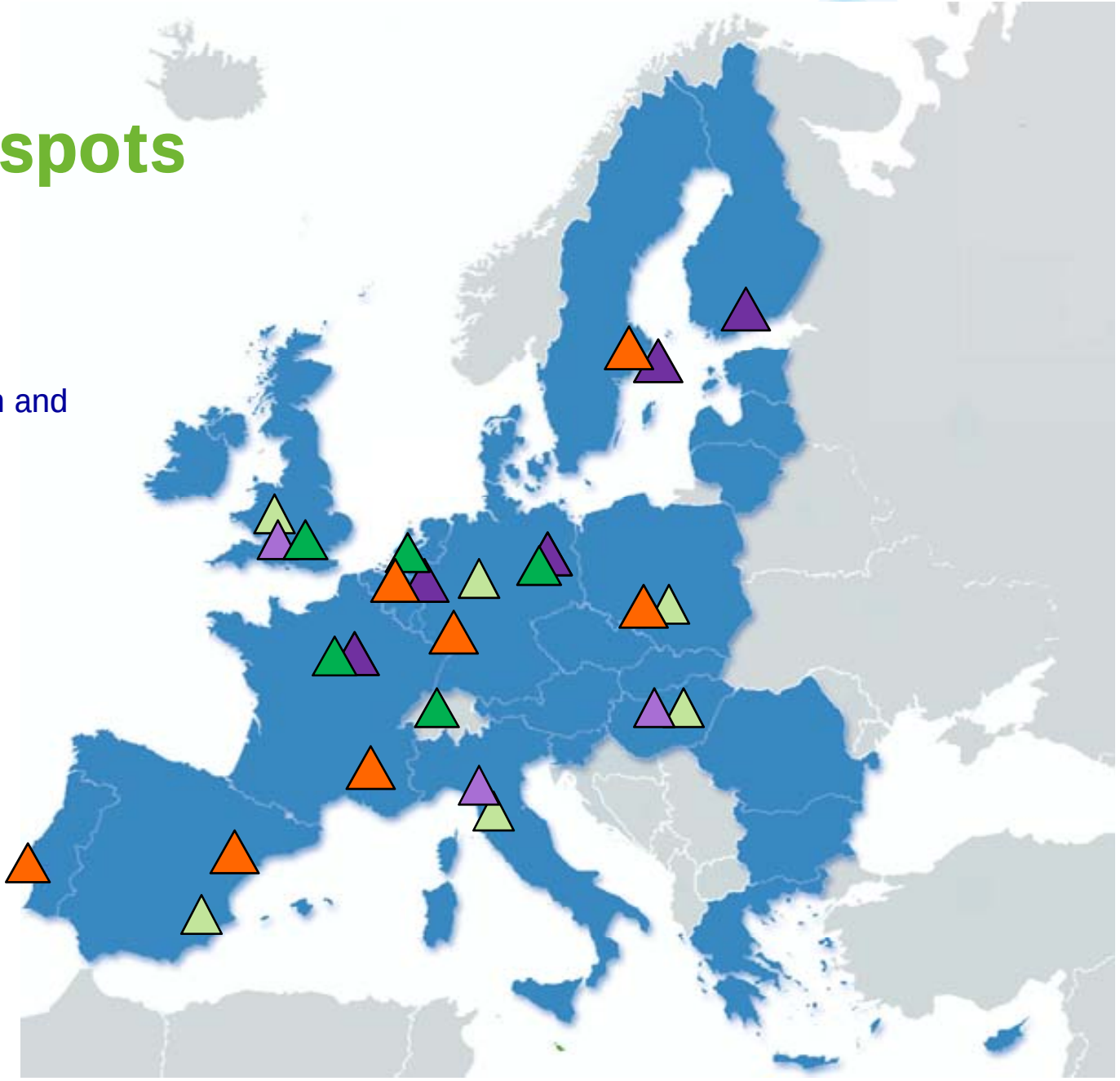
- Co-location centre
- RIC (Regional Implementation and Innovation Centre)

EIT ICT Labs:

- Co-location centre
- Associate partner

KIC InnoEnergy

- Co-location centre



EIT major challenges

- Stabilizing and anchoring the EIT autonomy while under the CSFRI* and maintaining key relations with EHEA*
- Enabling the KICs to become true 'innovation machines' driven by entrepreneurship

→ **From control to trust and relations based conducive to innovation**

→ **From smart funder to seed investor to impact investor**

→ **From a risk averse to risk taking culture (inc. acceptance of failure)**

* CSFRI – Common Strategic Framework for Research and Innovation
* EHEA – European Higher Education Area

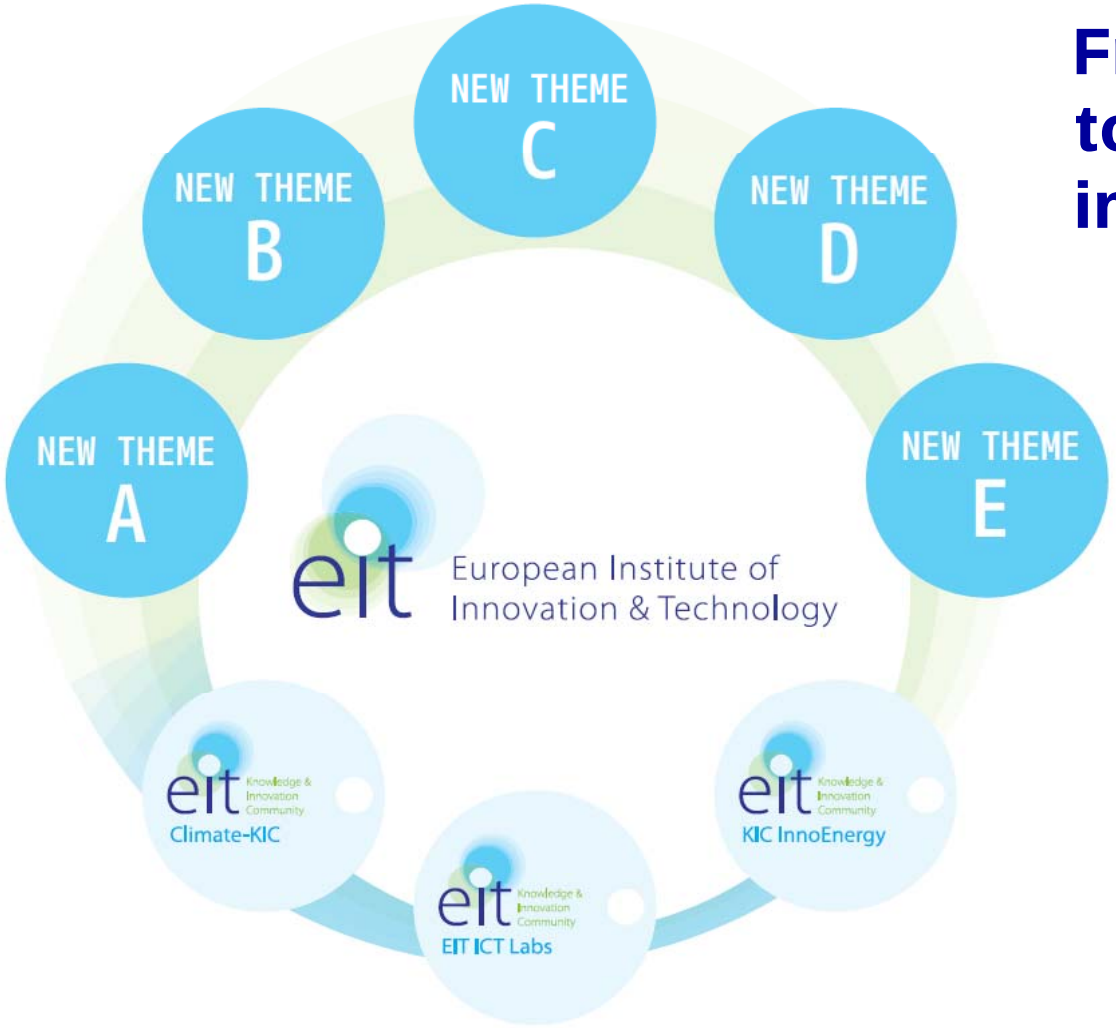
Initial EIT achievements

- **2008 Sept. :** Following the first EIT GB meeting with Pres. Barroso, the EIT launched its first call for KICs in April 2009.

- **2009:** The first three KICs were designated on 15 December 2009

- **2010:** Implementation of the first three KICs
- **2010:** EIT foundation established
- **2011:** 400 million€, 2500 people, 500 students
- **2011:** SIA suggests 6 new themes and 4 billion€ for 2014 to 2020

The EIT's vision for the future: Strategic Innovation Agenda (SIA)



From the current 3 KICs to a second round of investment after 2013

Initial ideas for potential future KIC themes

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

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

- **The initial themes remain included**

Climate-KIC

→**Climate-KIC** will focus on achieving excellence in four areas: assessing climate change & managing its drivers, transitioning to low-carbon resilient cities, adaptive water management and zero carbon production.

- **Co-location centres**: London, Zürich, Berlin, Paris, Utrecht
- **Regional Innovation centres:** Central Hungary, Lower Silesia (Poland), Midlands (UK), Hessen (Germany), Emilia Romagna (Italy), Valencia (Spain)

Climate-KIC: European leadership in climate change innovation

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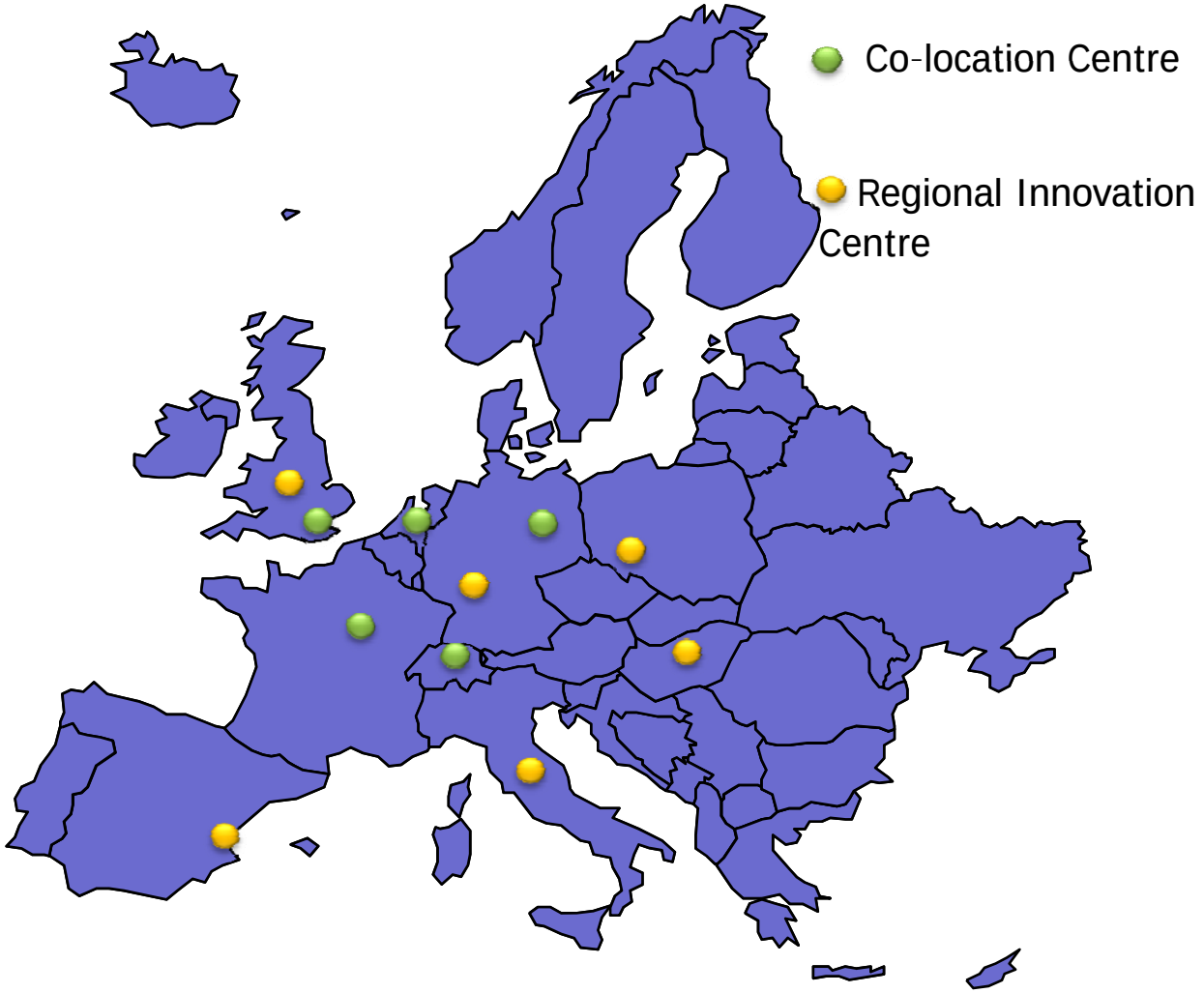
Vision

- **Catalyse** climate change innovation
- Create a **community** for climate change innovation
- Deliver **integrated** climate change innovation
- **Transform** Europe's response to climate change

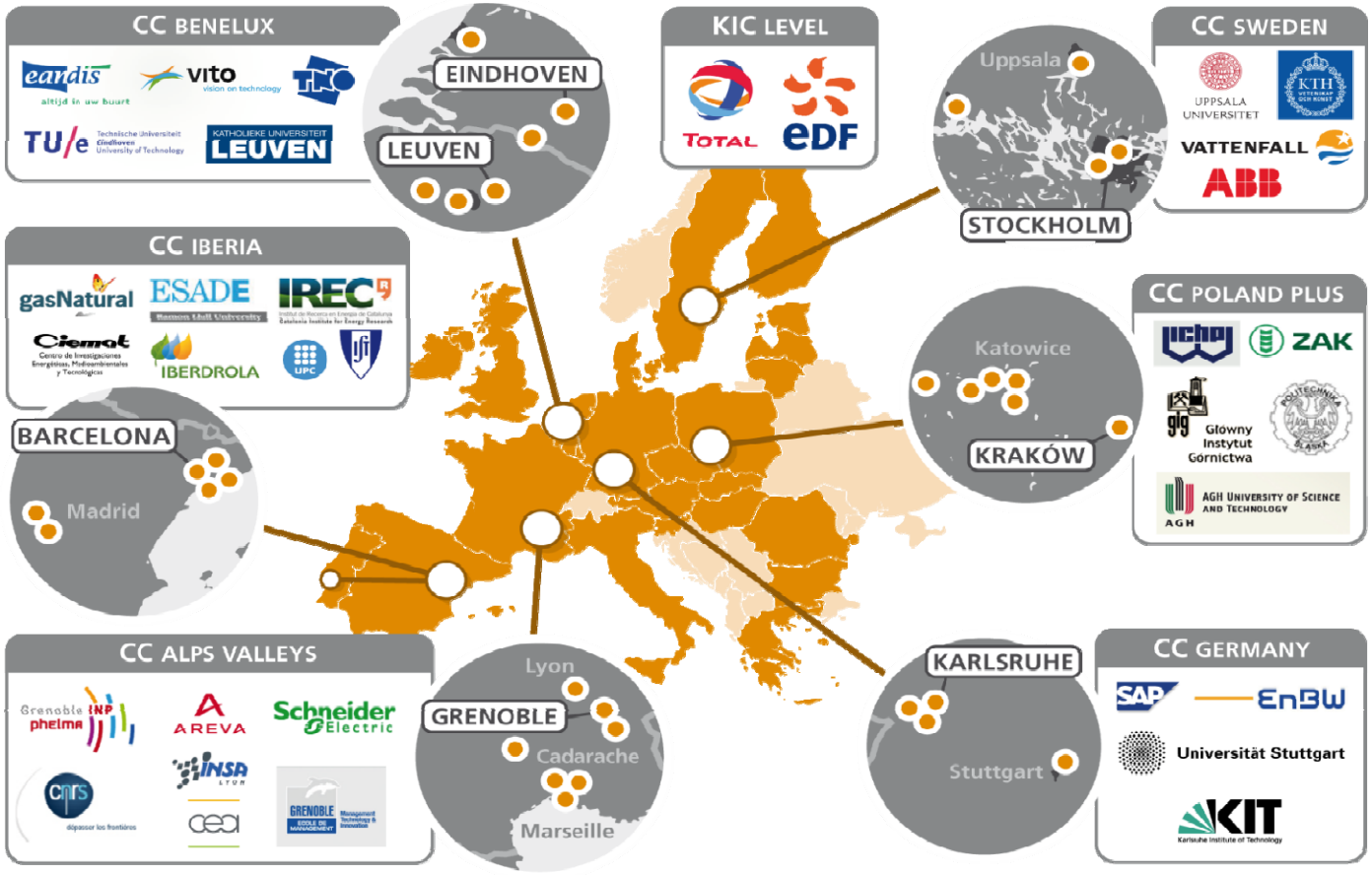


KIC InnoEnergy

→**KIC InnoEnergy** envisions paving the way for an independent and sustainable energy system enabling a climate-neutral Europe by 2050 achieved by successful commercialisation of innovations.

- **Co-location centres**: Karlsruhe, Grenoble, Eindhoven/Leuven, Barcelona, Krakow, Stockholm
- Installation as a European Company (SE)

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 ICT Labs

→**EIT ICT Labs** aims at radical transformation of Europe through open innovation and venture creation into a knowledge society with an unprecedented proliferation of internet-based services.

- **Co-location centres**: Berlin, Eindhoven, Helsinki, Paris, Stockholm

EIT ICT Labs

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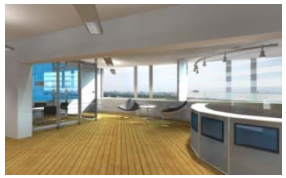
Complete and complementary world class innovation hotspots

Berlin

Deutsche Telekom Laboratories



SAP

SIEMENS

Eindhoven

High Tech Campus Eindhoven

Helsinki

TECHNOPOLIS
Otaniemi Science Park

The Award of Excellence for Innovative Regions by the European Commission

Paris

INRIA

Alcatel·Lucent

Pôles de Compétitivité

Stockholm

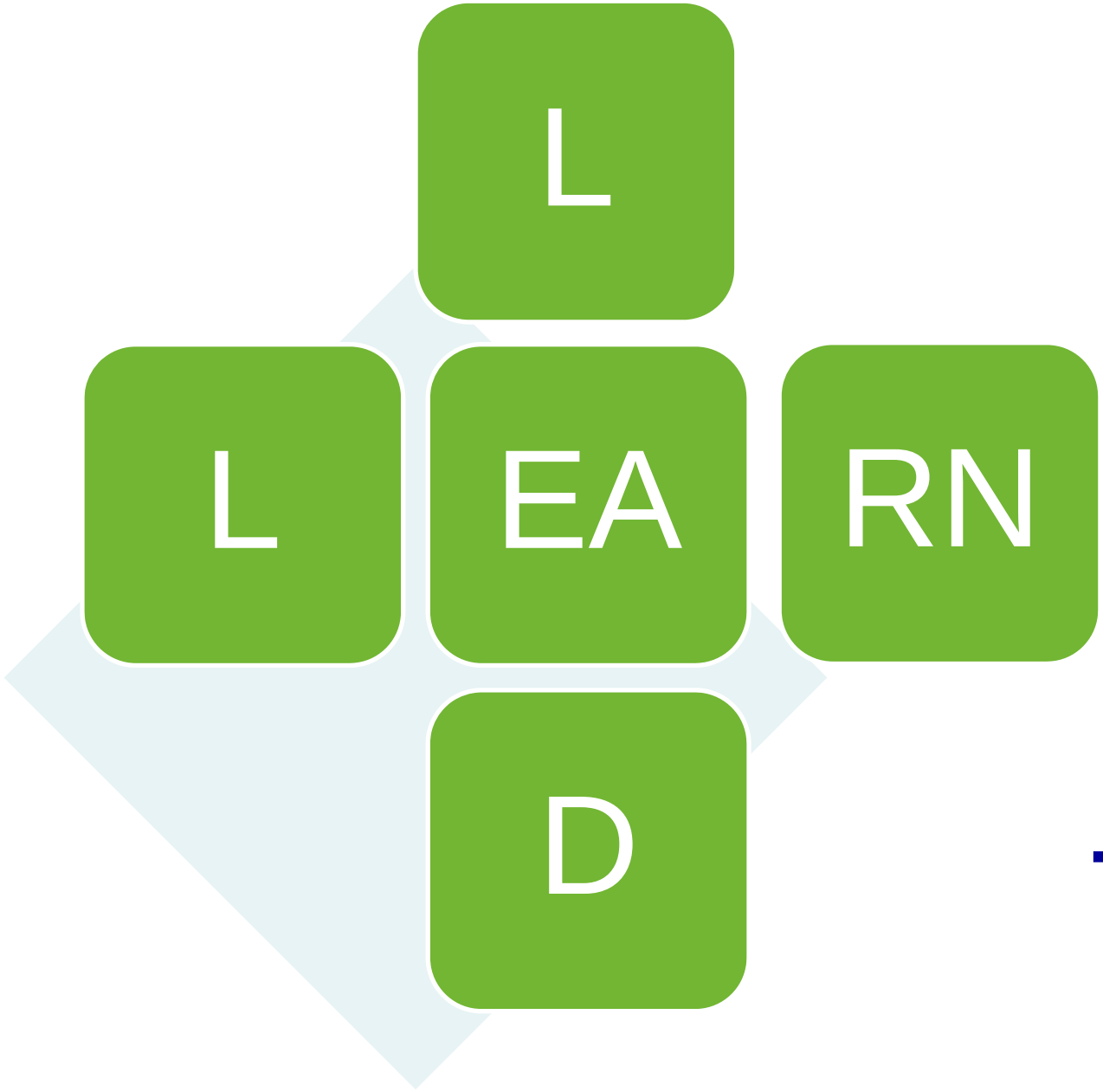
kista SCIENCE CITY

+

Associate clusters in Budapest, London, Trento
Systematic build-up of innovation hot-spots outside our initial nodes

Each Co-location features at least:

- One strong research institute
- One major university
- One European-based multinational company
- Active regional network of SME
- Full national and regional support



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Thanks!