ROYAL INSTITUTE
OF TECHNOLOGY

KTH Innovation

Presentation 25 November 2011

ROYAL INSTITUTE OF TECHNOLOGY

Agenda

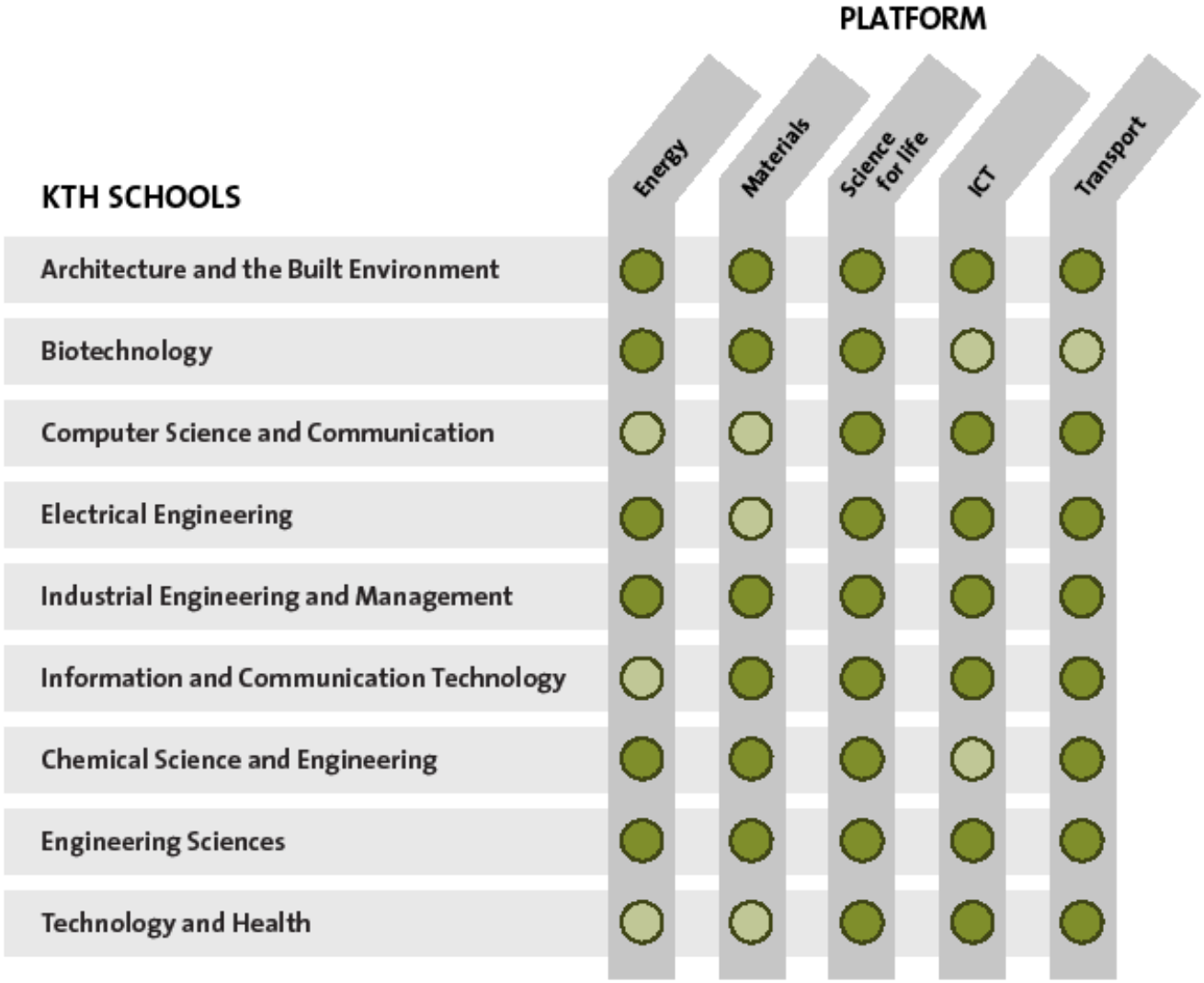
- About KTH
- Ecosystem for supporting innovations
- About KTH Innovation
- About STING
- Questions

KTH

- Was founded in 1827
- Is the largest of Sweden's technical universities
- Is located on five campuses in and around Stockholm
- Has MEUR 322 in yearly turnover
- Has 9+1 schools and 5 research platforms

ROYAL INSTITUTE OF TECHNOLOGY

KTH schools and platforms



ROYAL INSTITUTE OF TECHNOLOGY

The Professor's Privilege

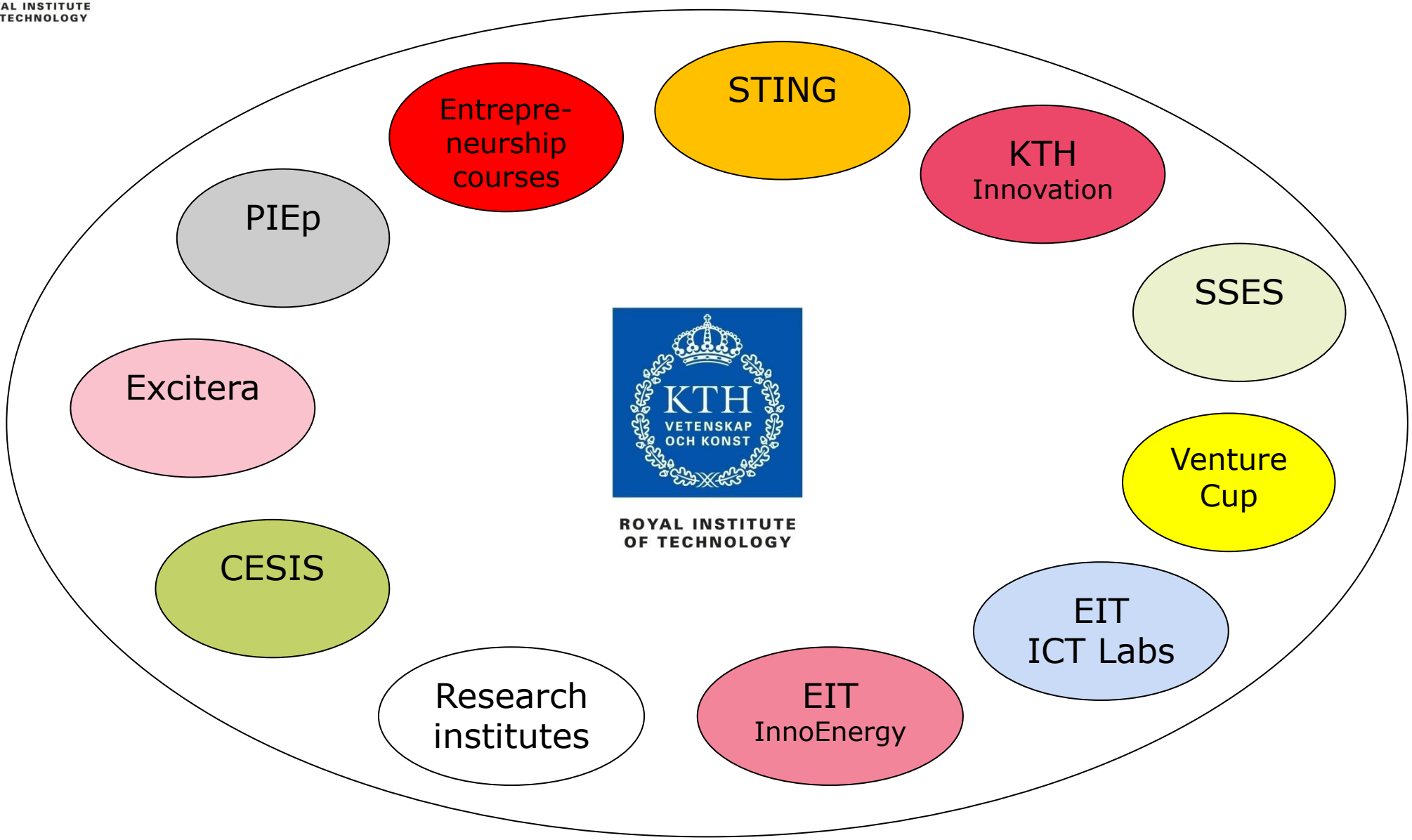
- The Professor's Privilege represents a deviation from Swedish customary rules regarding the employer's rights to employee's IP
- Customary rules states that an employer owns the IP created by an employee
- The Professor's Privilege = "Researchers and teachers at universities own their patentable inventions themselves"
- Therefore, researchers and teachers can commercialize/dispose their own patentable inventions
- Normally, Swedish universities do not claim rights/ownership to any IP owned by employed researchers and teachers

ROYAL INSTITUTE OF TECHNOLOGY

Agenda

- About KTH
- Eco system for supporting innovations
- About KTH Innovation
- About STING
- Questions

KTH´s ecosystem for supporting innovation



ROYAL INSTITUTE OF TECHNOLOGY

Research Assessment Exercise (RAE): Mission

- In 2008, KTH undertook an international evaluation, Research Assessment Exercise (RAE), of its entire research base
- Over 80 international experts from academia and industry visited KTH for a week to conduct a peer review
- Some of the findings:
  - 62 % of KTH research groups is considered “world leading” or of “high international standard” when it comes to the basic research
  - 53 % of KTH research groups are excellent at both basic and applied research
  - KTH produces more spin-offs than Massachusetts Institute of Technology, Stanford and Cambridge respectively per unit of research expenditure
  - Patenting levels (number of patents) match those noted at top US and UK universities
  - 67% of the patents generate revenues

ROYAL INSTITUTE OF TECHNOLOGY

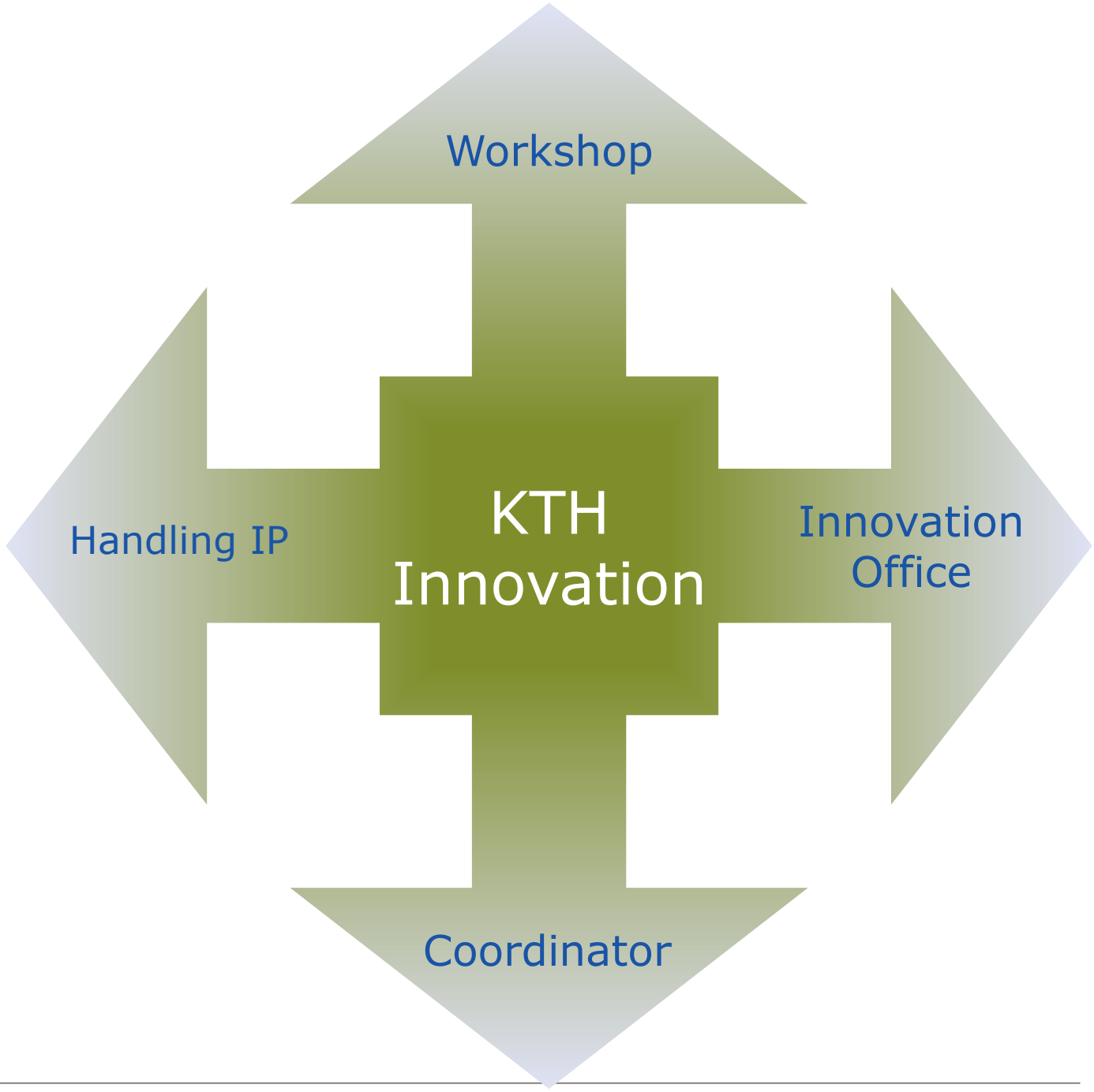
Agenda

- About KTH
- Ecosystem for supporting innovations
- About KTH Innovation
- About STING
- Questions

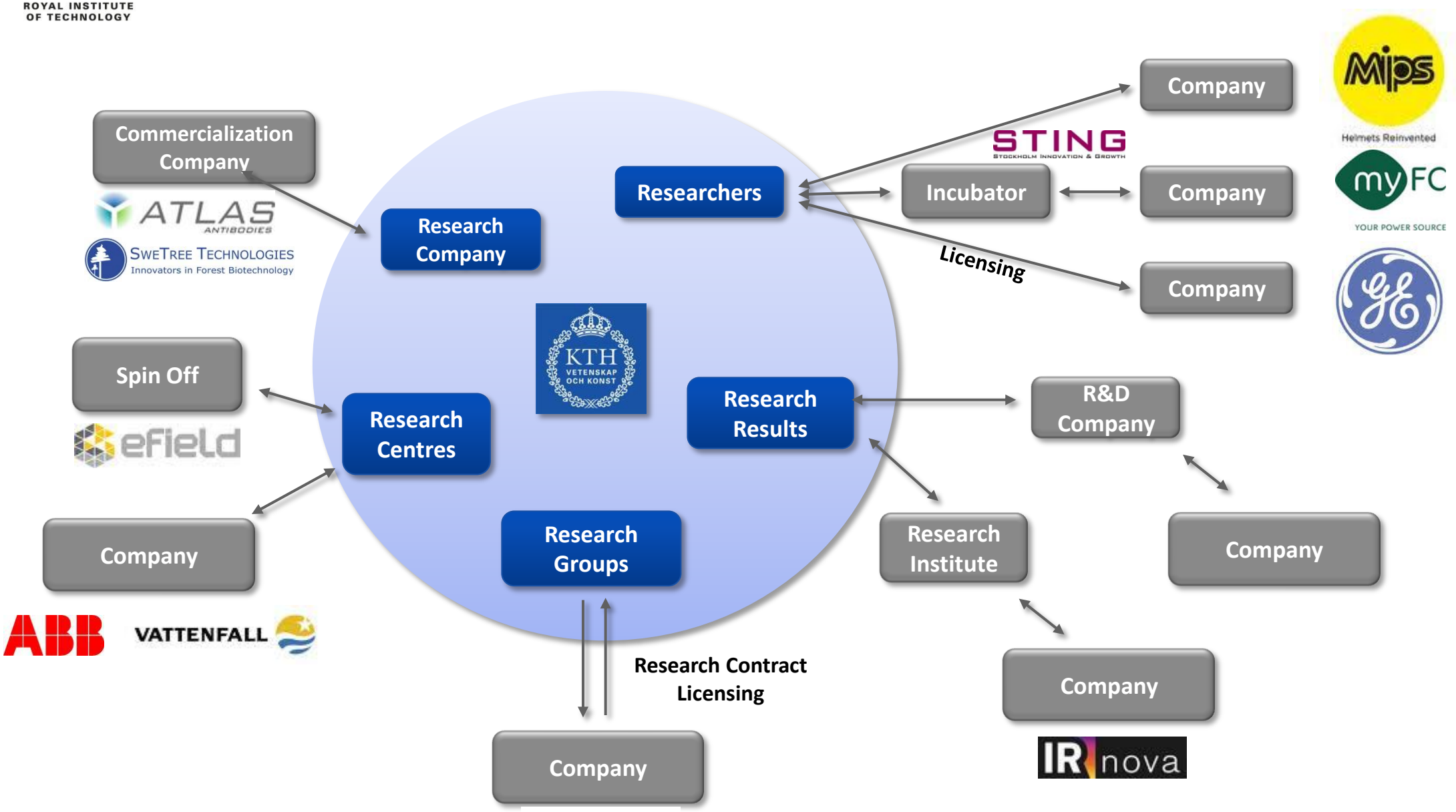
ROYAL INSTITUTE OF TECHNOLOGY

The four missions of KTH Innovations:

- **Workshop** – supporting researchers and students at KTH in their effort to commercialize research and develop business ideas
- **Innovation Office** – partner with fellow universities to make innovation support deeper, broader and more effective in the Mälardalen region
- **Coordinator** – compile and visualize the innovative force at our university
- **Handling IP** – through KTH Holding AB handle the immaterial rights which arise from complex collaborative projects, such as the VINNExcellence Centers



Examples of routes to commercialization



ROYAL INSTITUTE OF TECHNOLOGY

About KTH Innovation

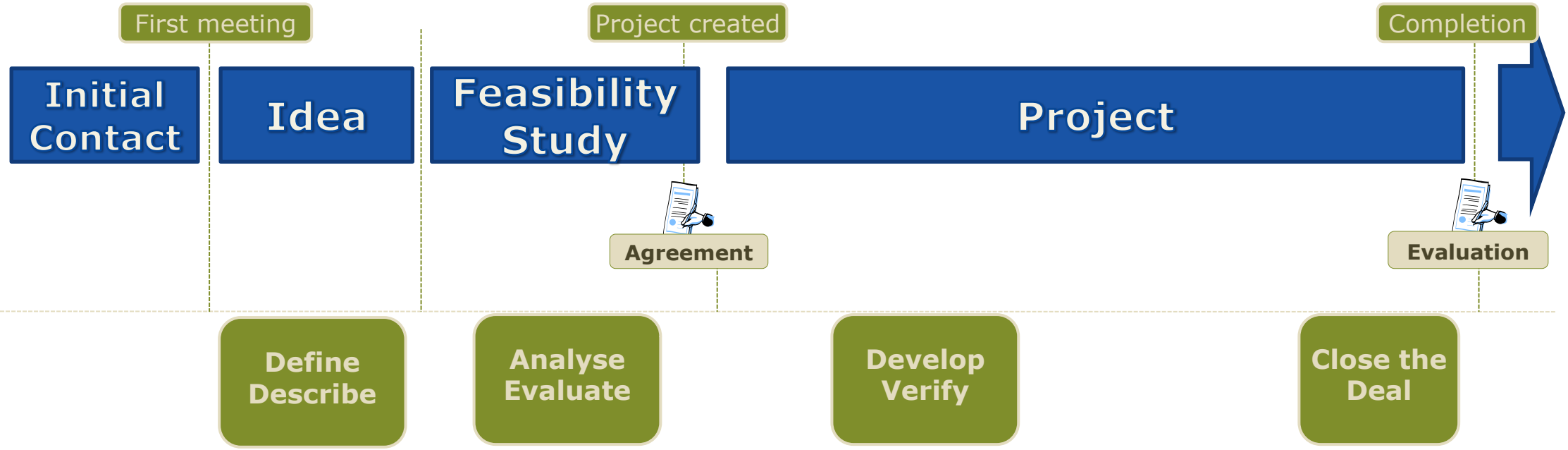
- Carries out activities within funding, IPR, legal issues, market, analysis, verifications etc
- Proactive search for ideas and strives for cultural change through participation in education, PhD courses and Startup! Program (together with STING)
- Consists of a team of 9 persons with complementary skills and backgrounds covering most industries and technical areas
- Handles around 130 ideas (last year 25% increase) and 35 commercial projects per year
- Focuses on value & results for the clients, market & customer orientation and efficient processes & tools

ROYAL INSTITUTE OF TECHNOLOGY

Team background and expertise

- Start-ups and management
  - Founder, CEO, project manager
- Patents
  - IPR management and strategies, own patents
- Business development
  - Sales, internationalization
- Financing
  - Venture capital, public financing
- Legal
  - Confidentiality agreements, customer agreements, licensing deals
- Product and service development
  - IT, media, material, medtech, consulting

Our process

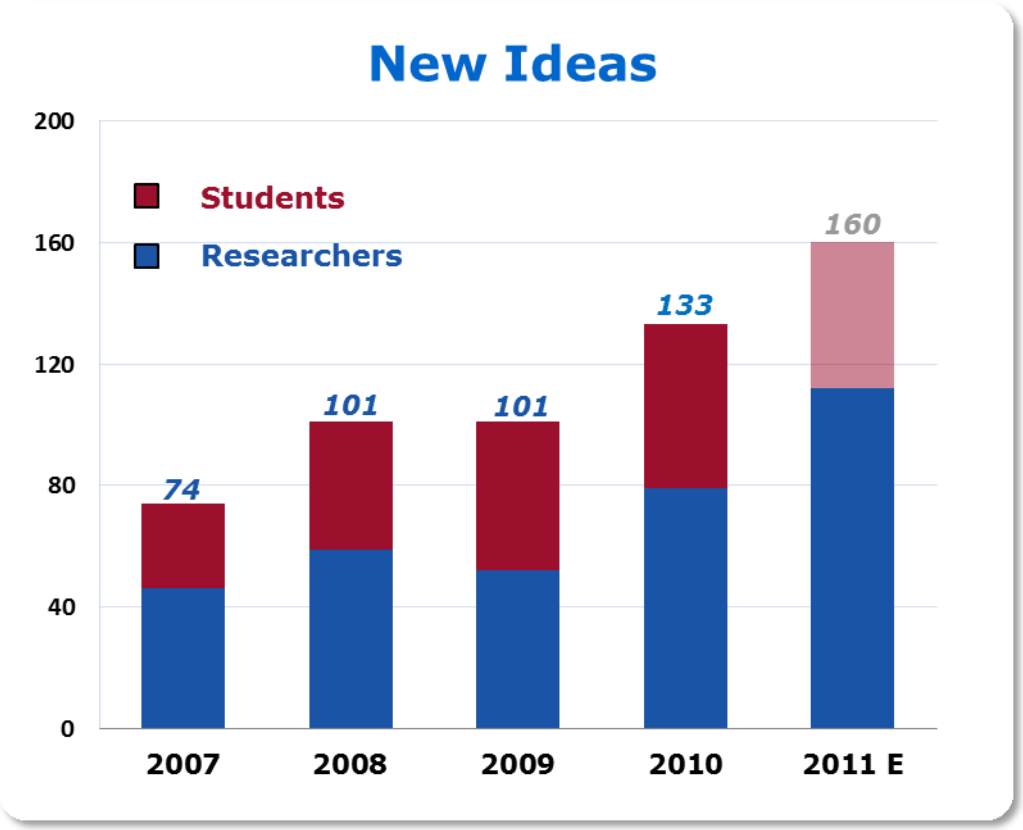


1. First meeting checklist
2. Commercialization process checklist
3. Idea description (NABC)
4. Application analysis checklist
5. Technology Readiness Level analysis
6. Confidentiality agreement template
7. Financing options overview
8. Roads to patent overview
9. Novelty analysis template
10. Patent disclosure template
11. Project management guidelines
12. Business plan checklist
13. Market analysis checklist
14. Innovation panel (web-based market survey)
15. Shareholder agreement template
16. Pitching guidelines

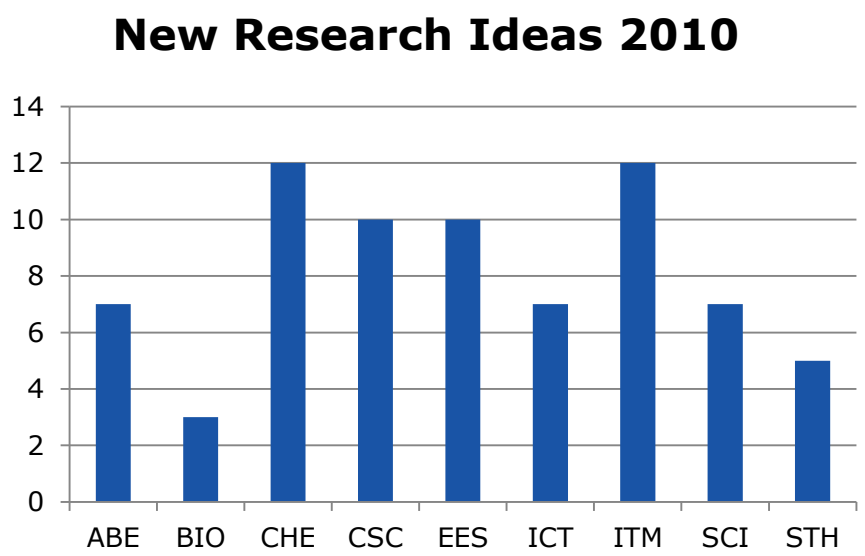
KTH Innovation  Ideas!

Researchers and students at KTHs generate hundreds of ideas each year. At KTH Innovation we strive to maximise the number of ideas that reach the market. We do this by having a high influx of ideas which gives as many people as possible the chance to benefit from our support.

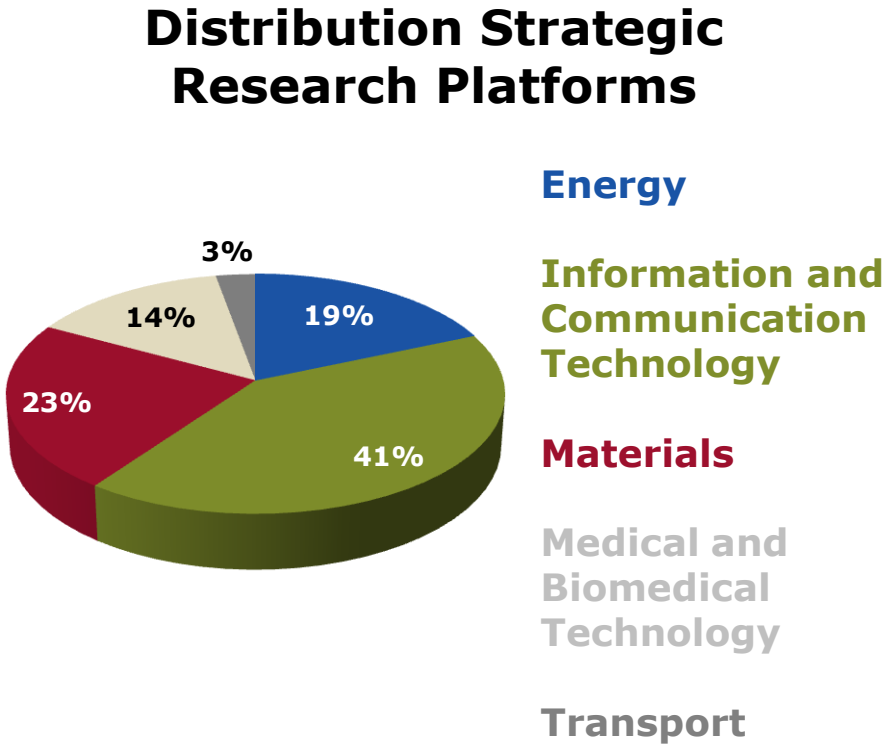
- Since the re-launce of KTH Innovation in 2007 we have had an influx of 409 new ideas.
- We have been in contact with a total of 616 individuals of which 417 are researchers or PhD students and 199 are students.
- 149 of the 417 researchers and PhD students we have been in touch with are professors, making it approximately 42% of all professors at KTH.



Some more statistics



In 50% of cases at least two researchers are developing the idea, and in 15% of cases there are more than two researchers involved..



A Brighter Tomorrow

KTH, the Royal Institute of Technology

R. Wyss
Vice President KTH

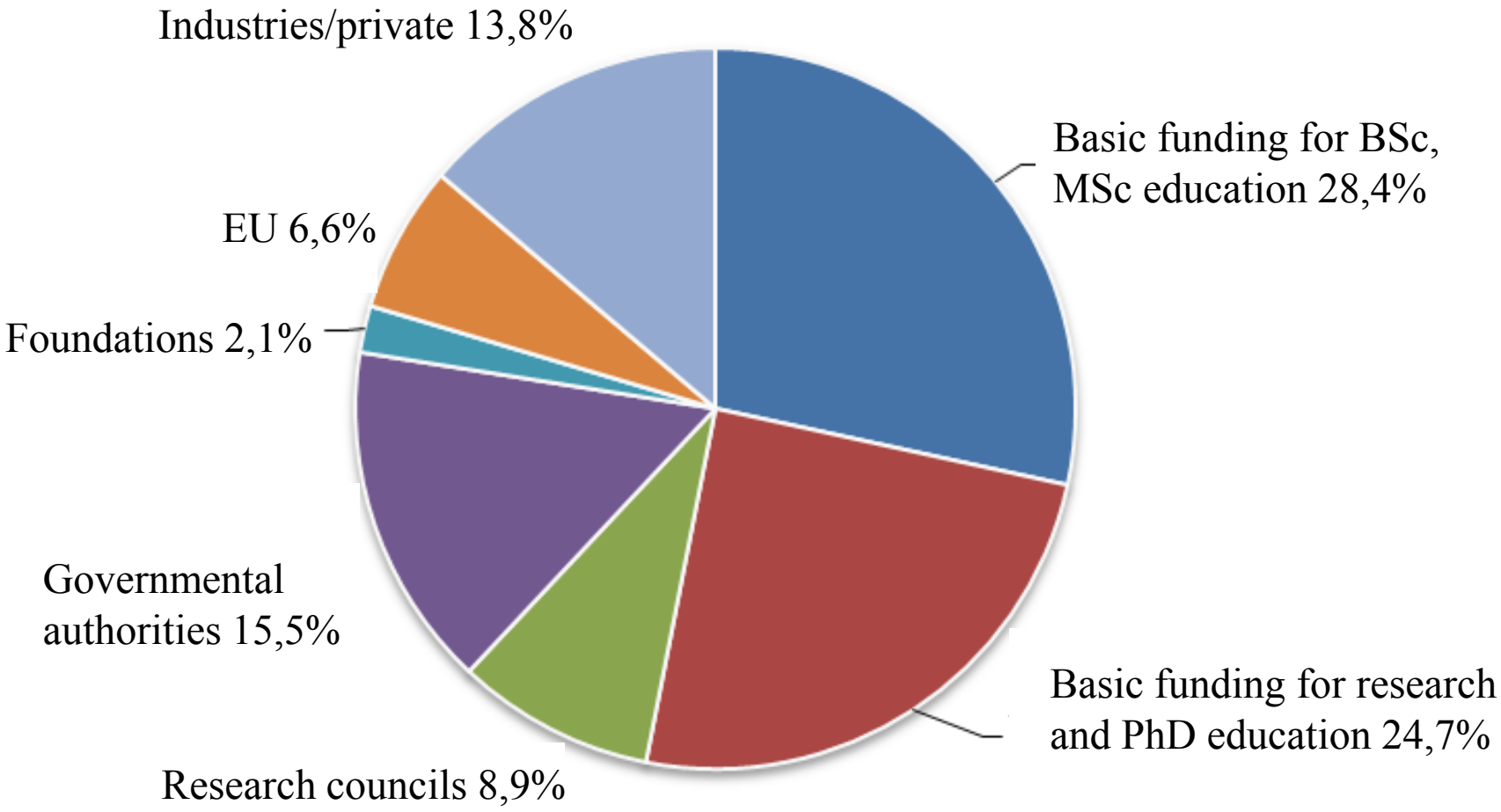
ROYAL INSTITUTE OF TECHNOLOGY

Facts and figures on KTH

- founded in 1827
- 17,000 undergraduate students (4000BSc, 13.000MSc)
- 1,500 PhD students
- 3,300 employees
- approx. >200 PhD degrees issued/year
- ranked among the top ten technical universities in Europe
- annual turnover EUR >400 milj
- "-In service of humanity – for the society of tomorrow."

Funding

Total income 3713 MSEK (410MEuro)



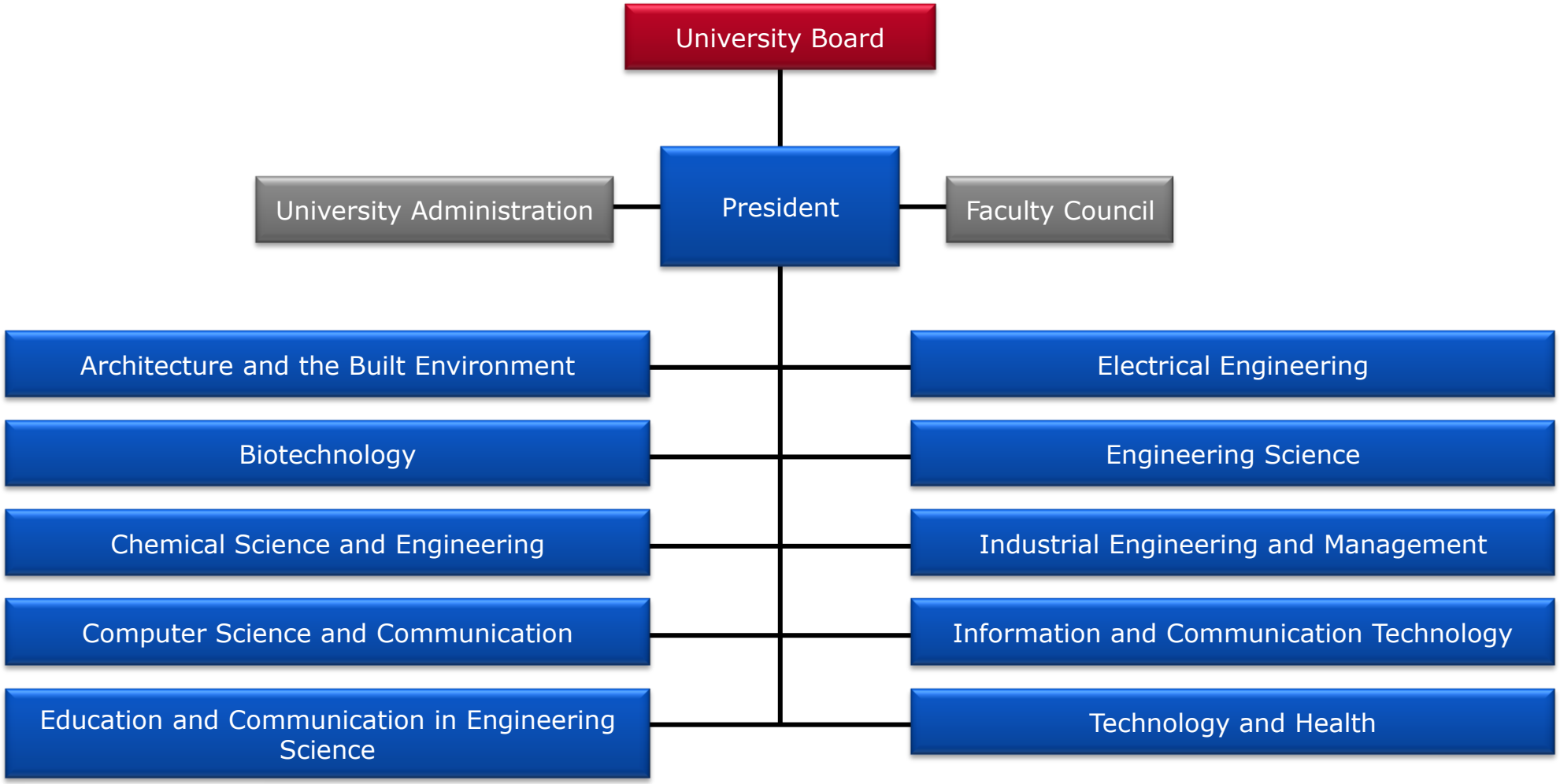
KTH five leading funders

Funding	mSEK
• Swedish Research Council	242
• EU Framework Programmes	173
• Swedish Agency for Innovation Systems (Vinnova)	165
• The Wallenberg Foundations	95
• Swedish Energy Agency (STEM)	74
• Swedish Foundation for Strategic Research	61

Figures for 2010

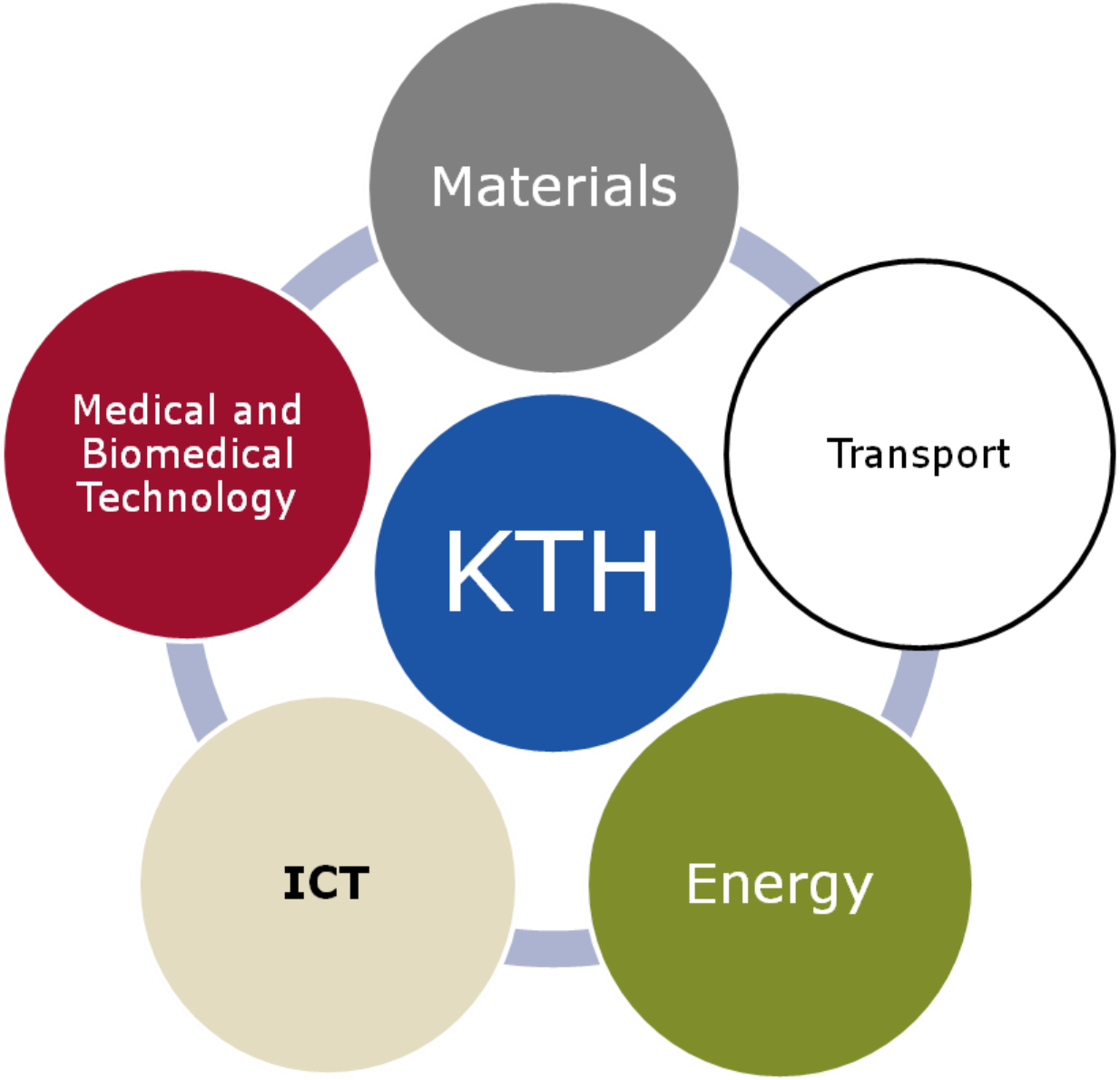
ROYAL INSTITUTE OF TECHNOLOGY

KTH's organisation

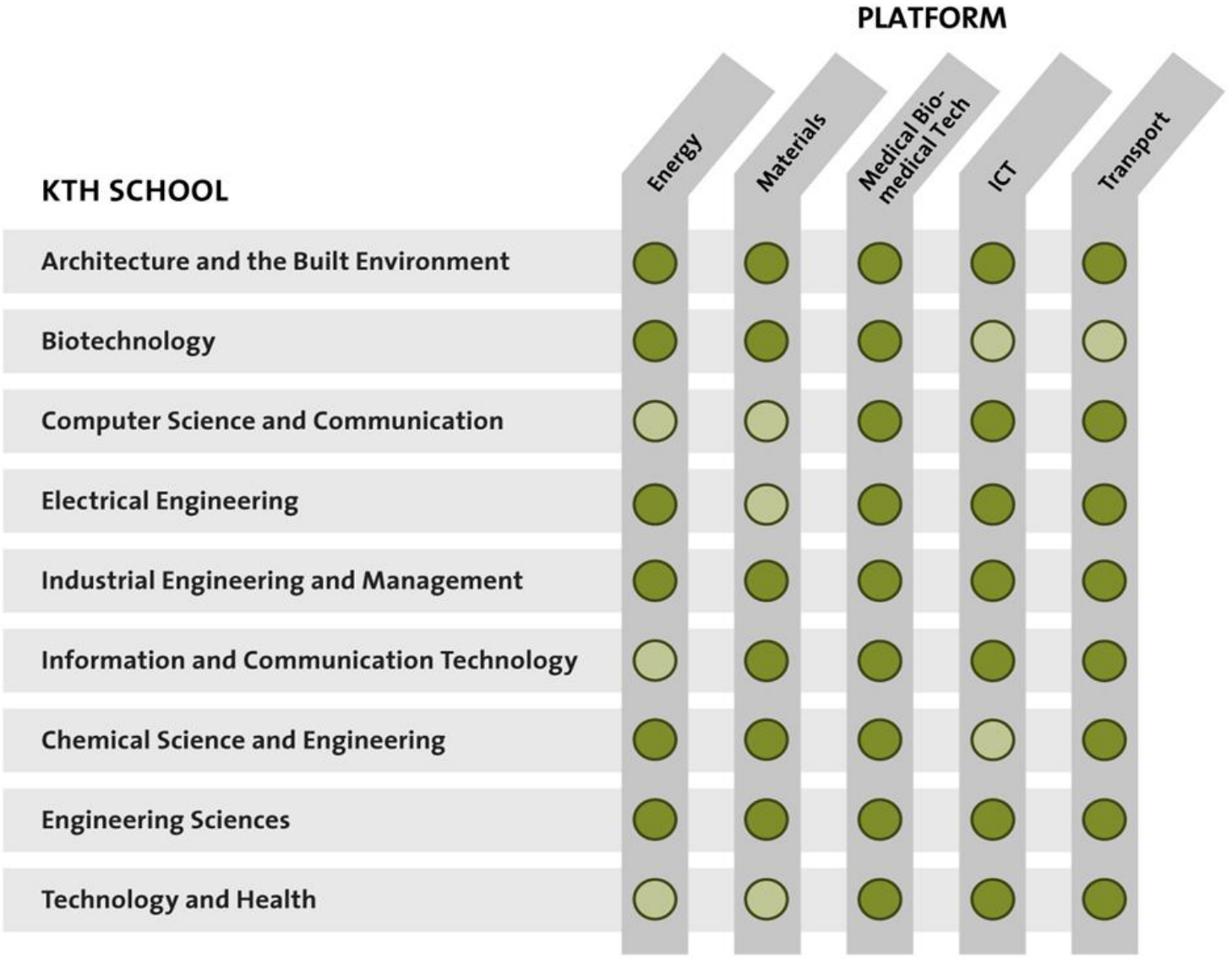


ROYAL INSTITUTE OF TECHNOLOGY

Focus Areas of KTH

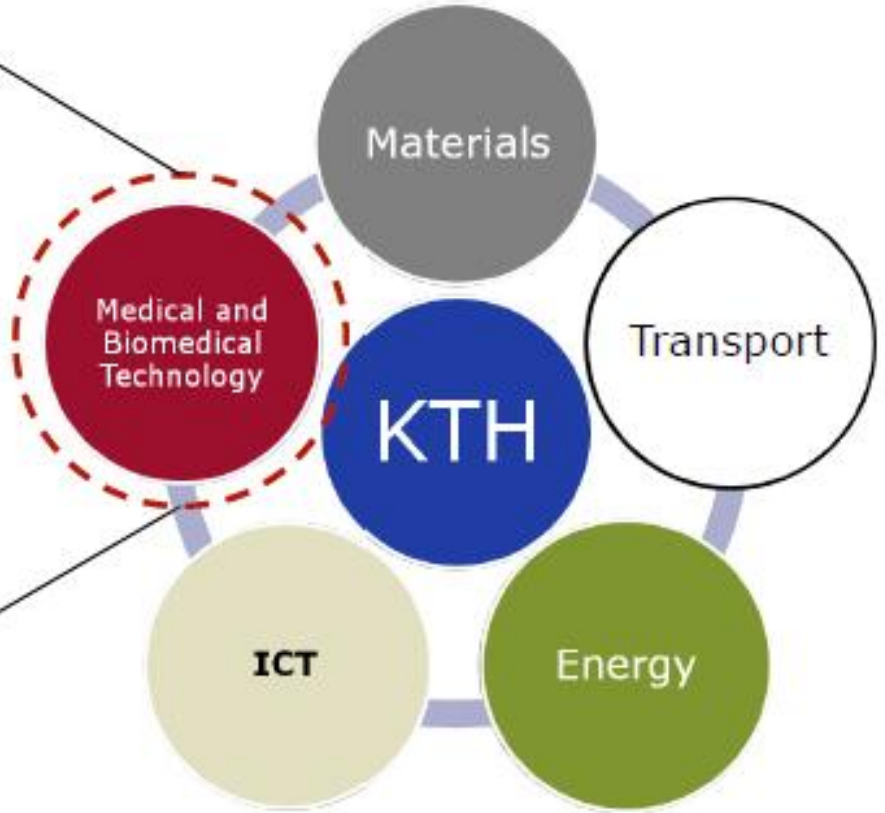


Schools and Research Platforms



ROYAL INSTITUTE OF TECHNOLOGY

KTH is a Life Science university



International Advisory Group

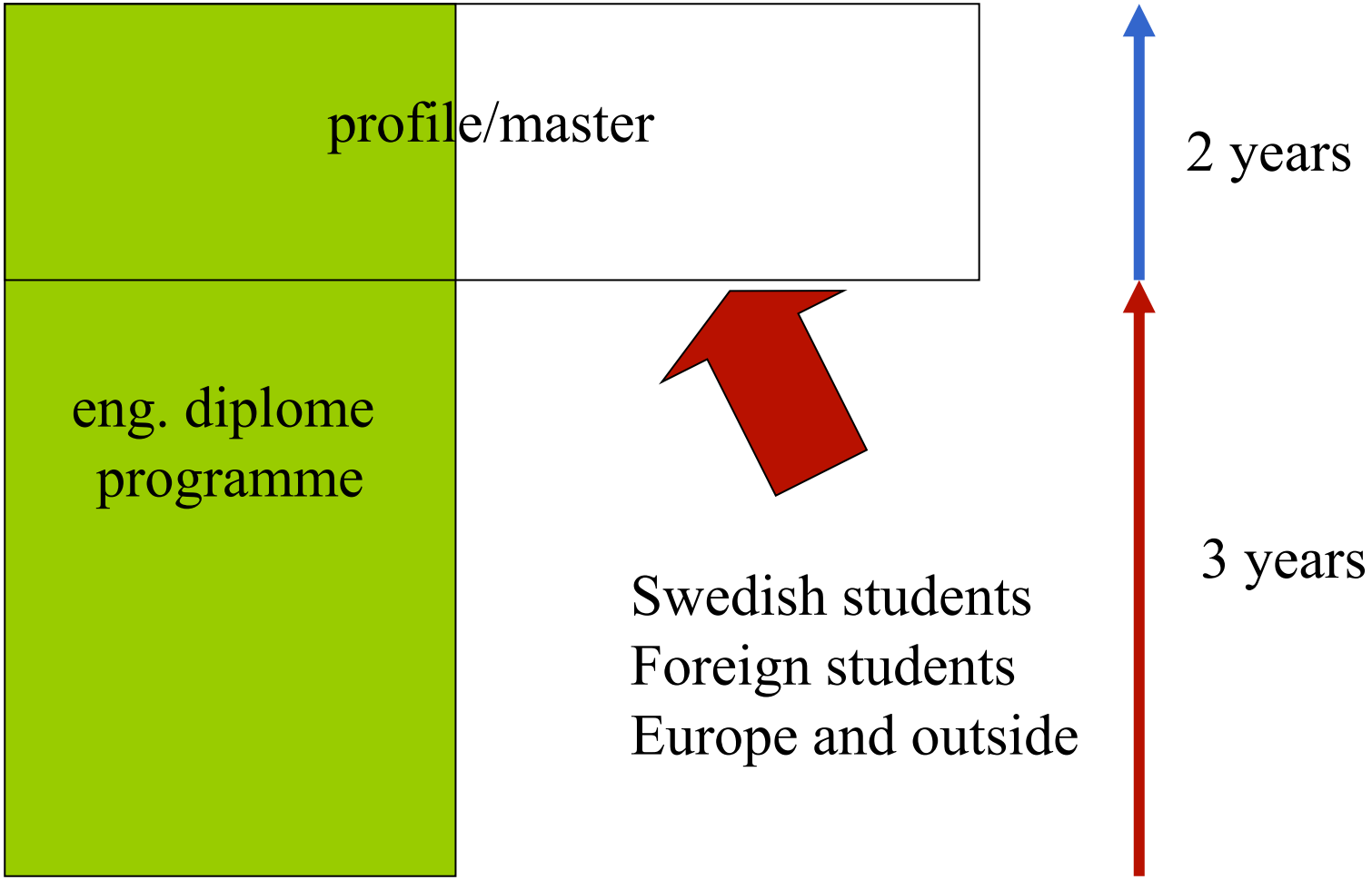
- Supports president decision in international matters
- Develops KTH strategy for internationalisation
- Consists of deputy president, deputy Dean of faculty (in charge of education), vice president of international affairs, head of international relations, admission office, business liaison office
- Meets every two weeks
- Larger group with representatives of the schools meets twice per semester

ROYAL INSTITUTE OF TECHNOLOGY

Prioritized regions

- KTH prioritises EU programs and collaboration within Europe
- Erasmus Mundus, Marie Curie, Tempus are key instruments for internationalisation
- Four prioritized regions: China, India, Brazil, South East Asia
- Key strategic partners: University of Illinois Urbana Champaign, Aalto University
  further partners are under discussion with the aim of a few strategic partners in key countries of cooperation

Engineering and MSc Programmes



International cooperation

- **Worldwide student exchange**
  - Large number of exchange agreements
  - Very active within Erasmus mundus
- **International collaboaration**
  - EIT with the KICs
  - China Centres of Excellence

ROYAL INSTITUTE
OF TECHNOLOGY

KTH and European Cooperation

ROYAL INSTITUTE OF TECHNOLOGY

CLUSTER

The VISION for CLUSTER is to become

- The leading university network of technology for Research, Education and Innovation in Europe
- The platform for the European Institute of Innovation and Technology
- The prime partner for Industry cooperation at the European level

CLUSTER, the European Network of Excellence in Science and Technology

Associate Members
- Georgia Institute of Technology (USA)
- Technion - Israel Institute of Technology
- École Polytechnique de Montréal (Canada)
- Universidade de Sao Paulo (Brasil)
- Tomsk Polytechnic University (Russian Fed.
- Tsinghua University (China)

Mutual Recognition of Degrees

- *The Bachelor and Master degrees issued in the CLUSTER universities satisfy the same high standards of quality and excellence and therefore can be considered as equivalent in academic level.*
- Students with a Bachelor degree from a CLUSTER Univ will be treated for admission to a Master's program in another CLUSTER institution in the same way as the local students of this institution.
- Students with a Master degree from a CLUSTER School will be considered as eligible for application to a Ph.D. program in another CLUSTER institution with the same rules as the local students of this institution.

CLUSTER

MSc
Univ B
(KTH)

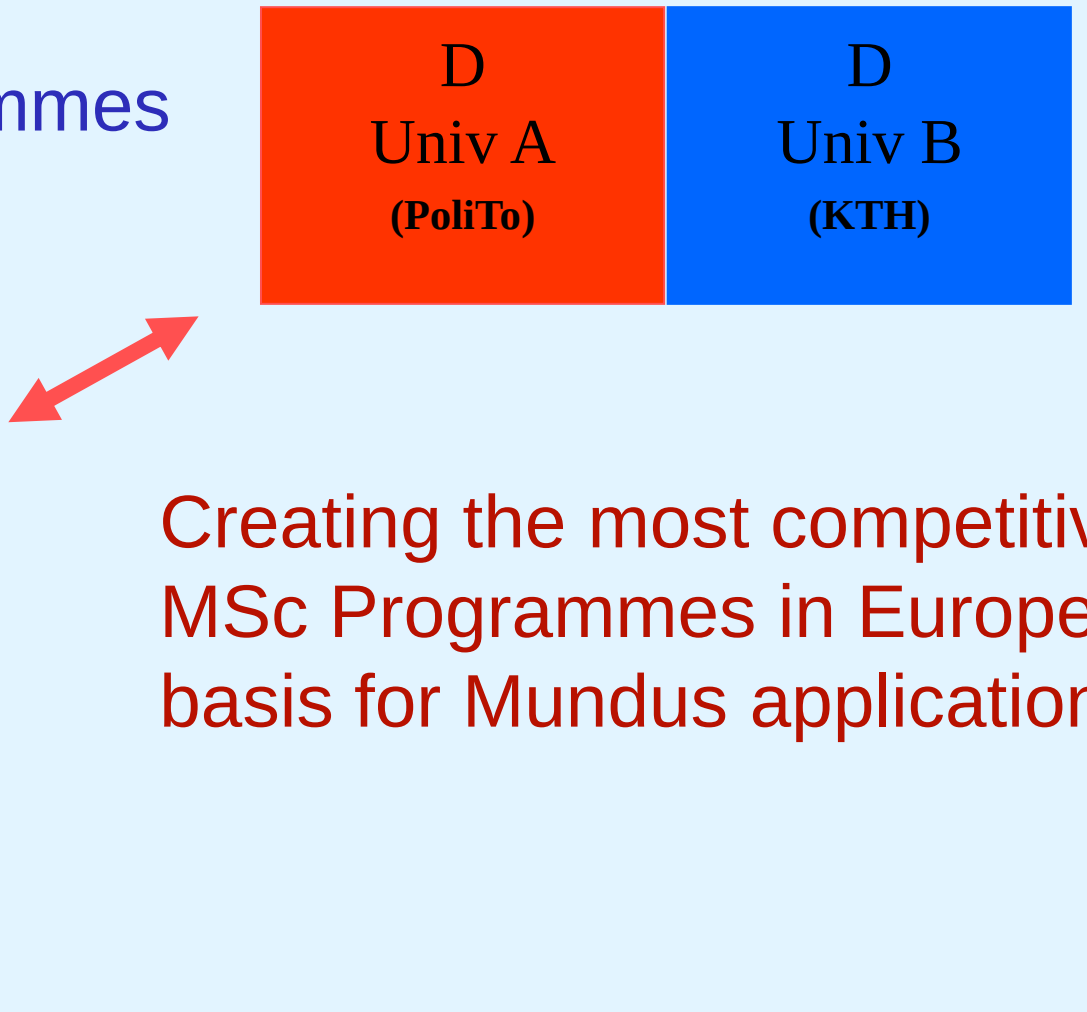
BSc

Univ A
(Europe,
world)

Vertical mobility increasing competiveness in Europe. NOT supported by present funding schemes (Erasmus Sokrates)

CLUSTER

CLUSTER Dual Degree
MSc and/or Mundus Programmes supported by the Erasmus exchange programme

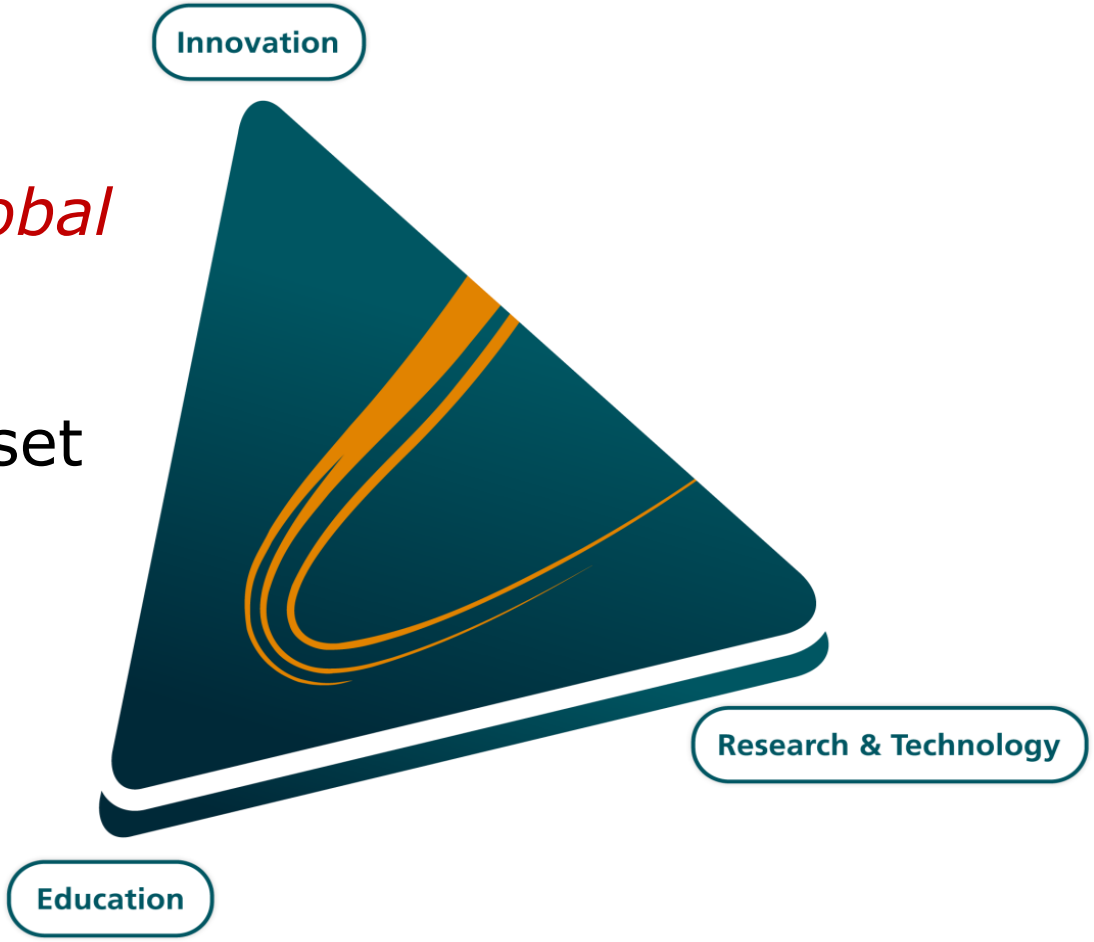


Creating the most competitive MSc Programmes in Europe – basis for Mundus applications

Integration of the knowledge triangle

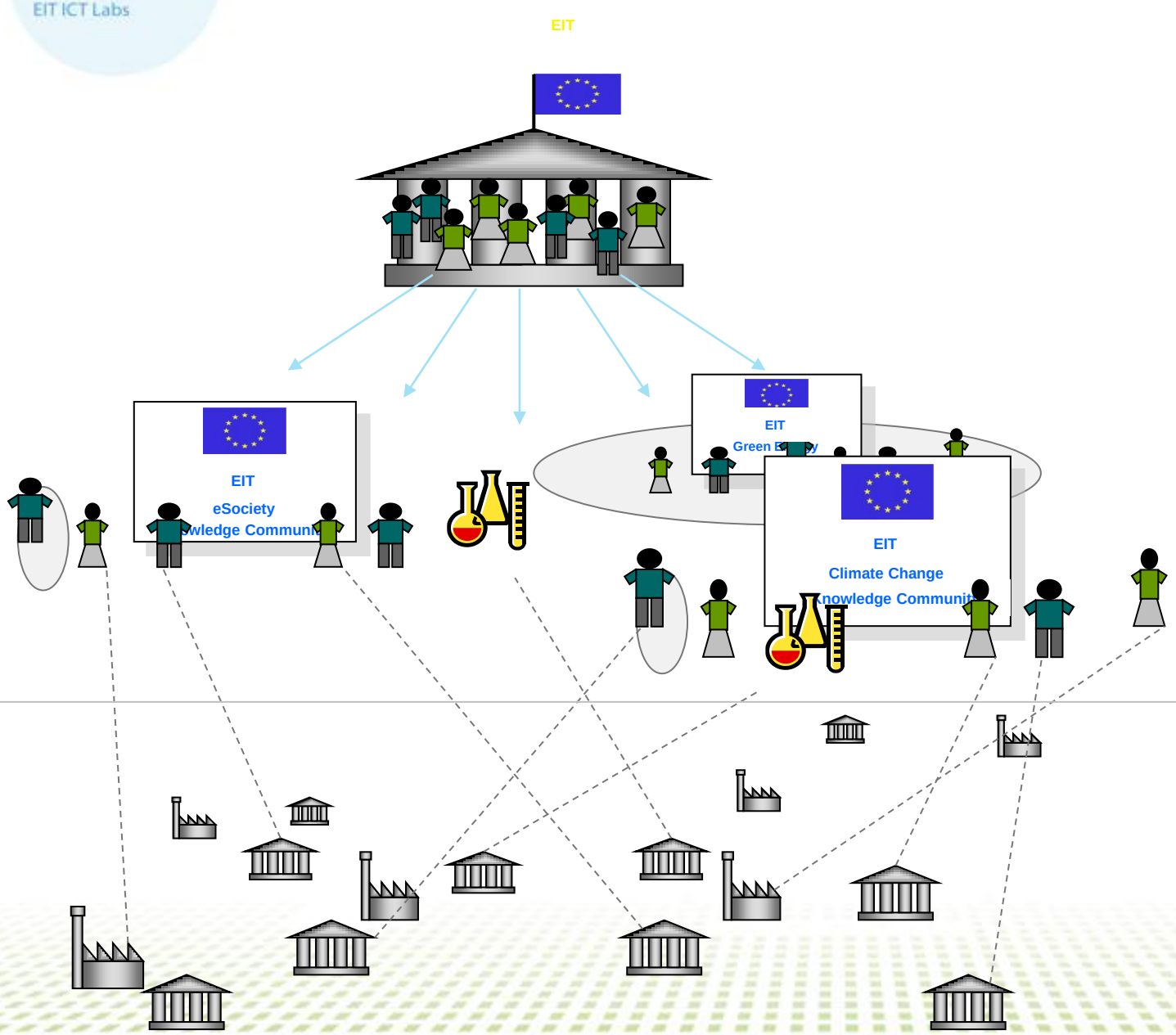
Education to meet global challenges

- Entrepreneurial mindset
- Cross disciplinary
- Leadership
- Business skills



At the heart of the EIT

EIT structure



The EIT: Governing Board

Knowledge and Innovation Communities

Partner organizations

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

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

Strong European Partners

Complete and complementary world-class innovation nodes

Berlin

Eindhoven

Helsinki

Paris

+ Academic and industrial clusters

Stockholm

+

Associate clusters in Budapest, London, Trento

Each node 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

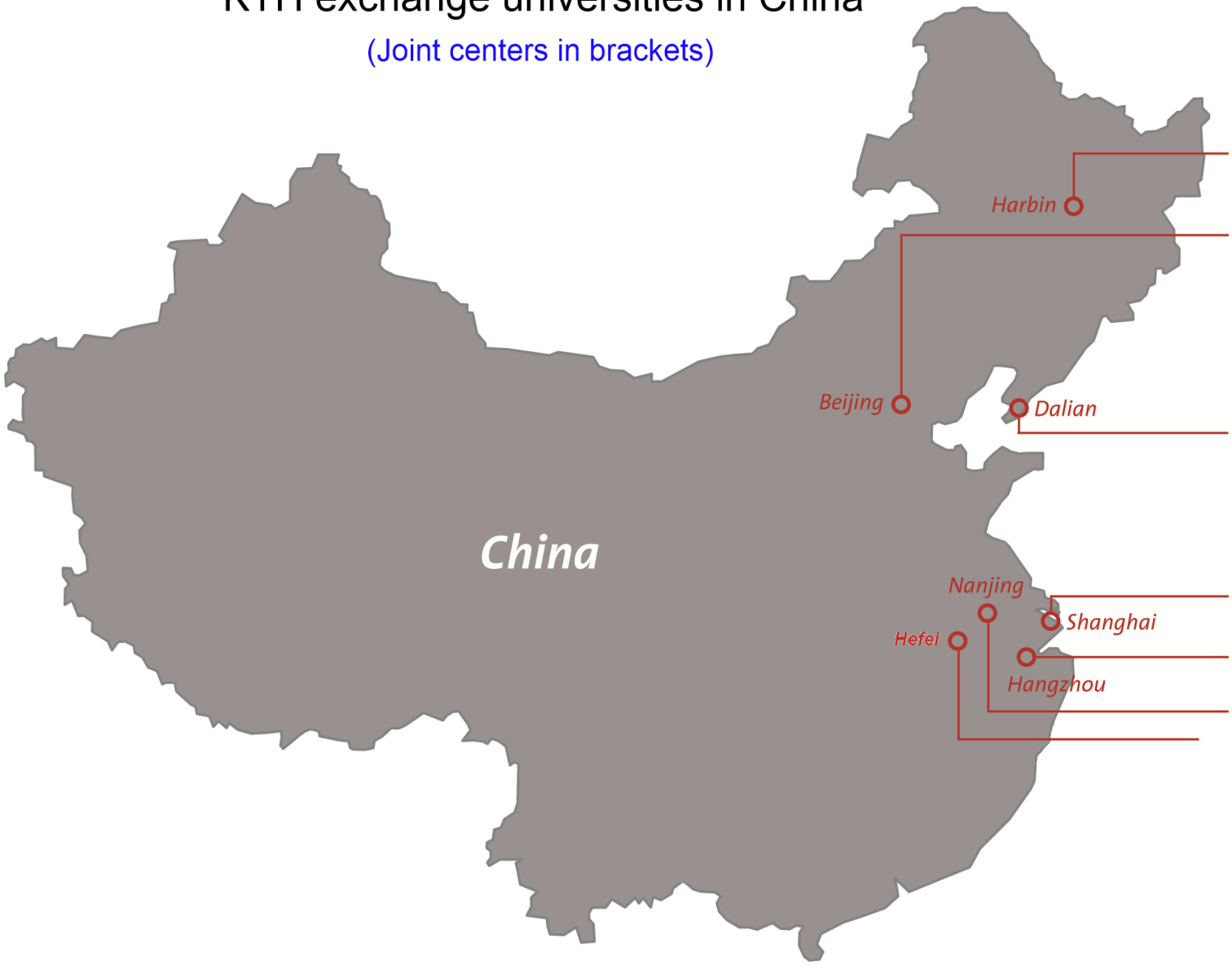
ROYAL INSTITUTE OF TECHNOLOGY

KTH and Sino-Swedish Cooperation

ROYAL INSTITUTE

KTH exchange universities in China

(Joint centers in brackets)



Harbin Institute of Technology

Tsinghua University (Nuclear and Sustainable Energy)
Peking University
Beijing Jiaotong University

Dalian University of Technology (Molecular devices)

Fudan University (Microelectronics)
Shanghai Jiaotong University (Medical Technology)

Zhejiang University (Photonics)

Southeast University (Industrial Ecology)
University of Science and Technology
(Bio- and Nano materials)

First Sino European Workshop on Engineering Education

2nd SINO-EU

Workshop on Engineering Education

第二届中欧工程教育研讨会

24th-25th May 2011
Instituto Superior Técnico
Lisboa - PORTUGAL

http://nri.ist.utl.pt/en/plataforma-sino-eu/

powered by CLUSTER

2nd SINO-EU

Workshop on Engineering Education

第二届中欧工程教育研讨会

24th-25th May 2011
Instituto Superior Técnico
Lisboa - PORTUGAL

http://nri.ist.utl.pt/en/plataforma-sino-eu/

powered by CLUSTER

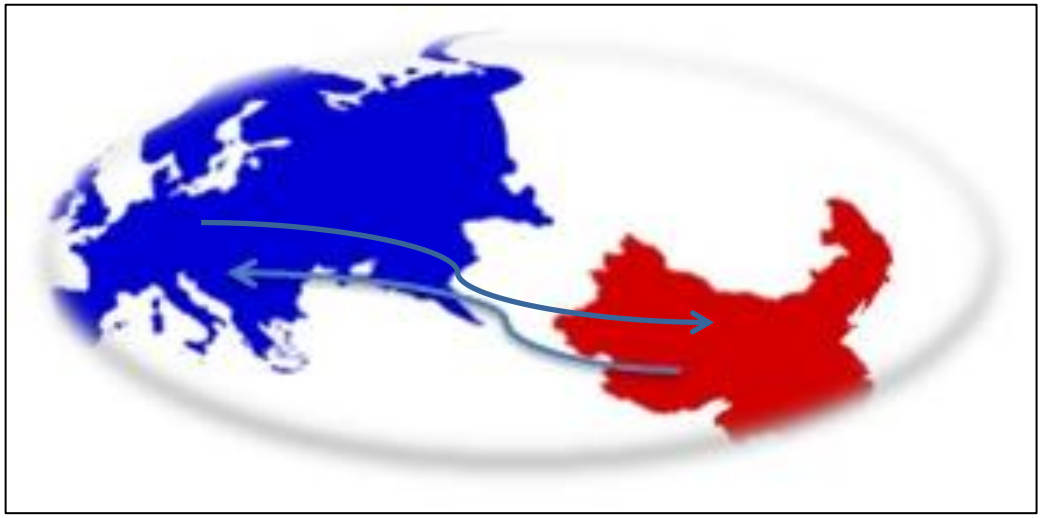
SINO-CLUSTER DUAL MASTER AGREEMENT

Objectives

SINO-EU Framework for Dual Masters seeking to increase student mobility;

Setup joint research and staff exchange

Define requirements, credits, selection process and assessment



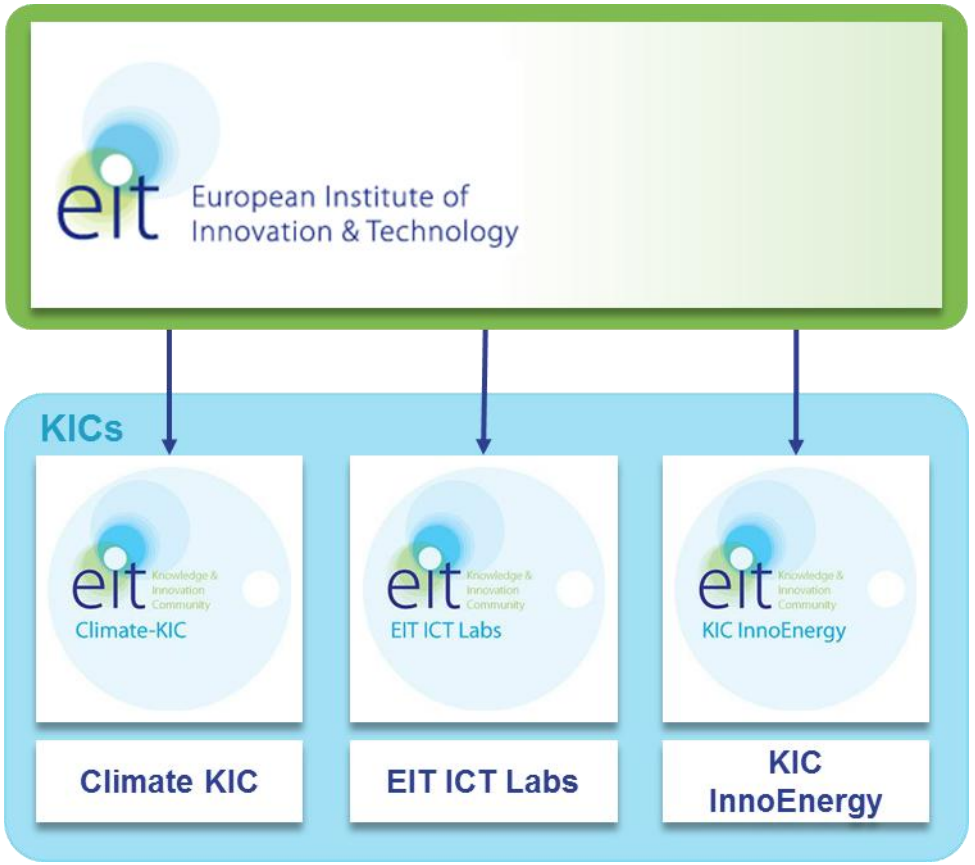
Agreement templates > addressing Cluster and Chinese specificities

ROYAL INSTITUTE
OF TECHNOLOGY

EIT

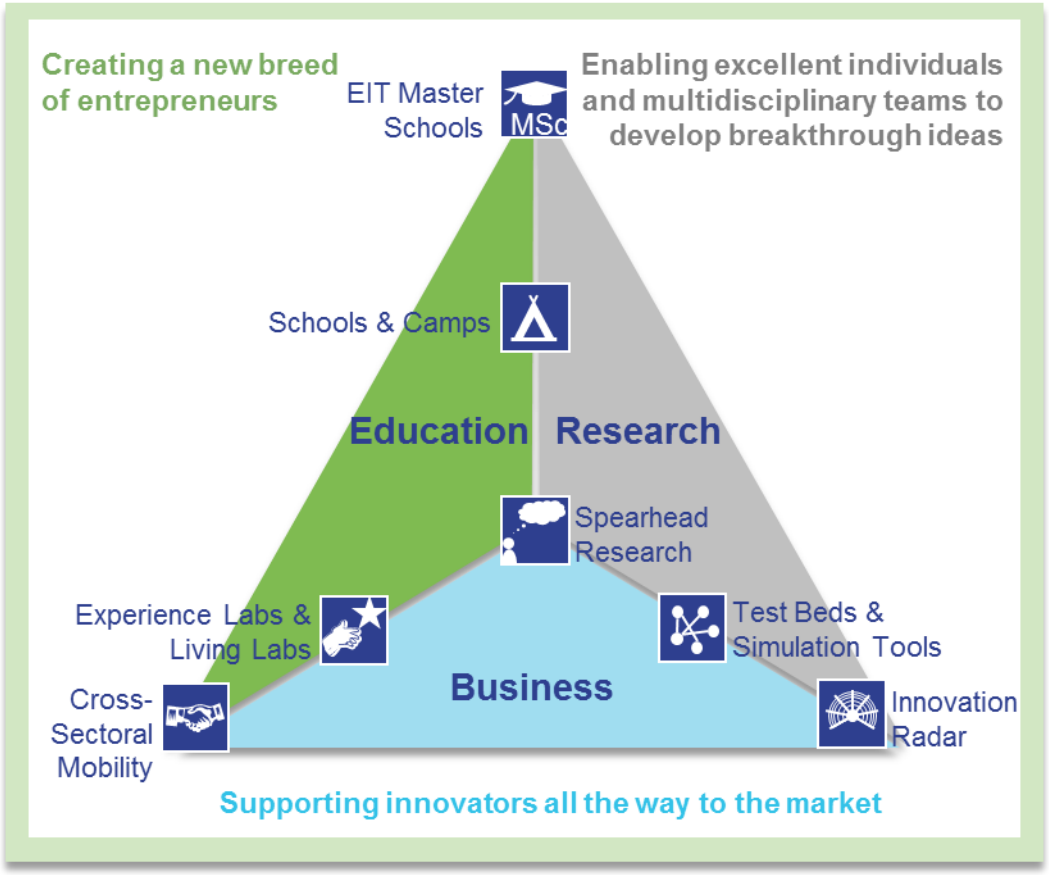
European Institute of Innovation and Technology

EIT - a new EU body becoming an important part of Horizon 2020



ROYAL INSTITUTE OF TECHNOLOGY

Integrating the Knowledge Triangle



ROYAL INSTITUTE OF TECHNOLOGY

Joint Master Programmes

The Knowledge and Innovation Communities organize a.o. joint Master Programmes. These are characterized by

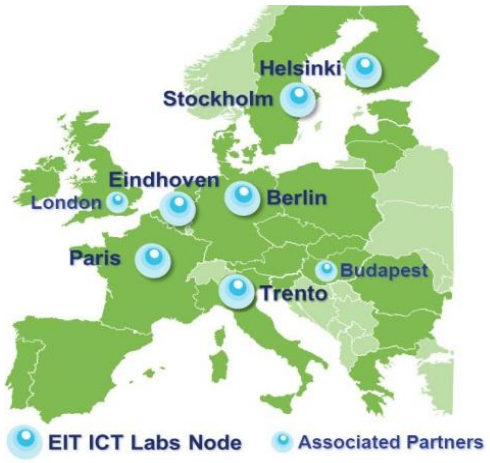
- Student mobility, leading to a double degree
- Innovation and entrepreneurschip courses
- Close cooperation with industry (internships and thesis in industry)

- EU-funded scholarships are available

ROYAL INSTITUTE OF TECHNOLOGY

EIT ICT LABS

Berlin	Eindhoven	Helsinki	Paris	Stockholm	Trento
					
					



Berlin

Eindhoven

Helsinki

Paris

Stockholm

Trento

EIT ICT Labs

Human Computer Interaction and Design (HCID)
- design, development and evaluation of novel user interfaces and interactive systems

Digital Media Technology (DMT)
- generation, processing and coding of media as well as transfer and storage of media content

Service Design and Engineering (SDE)
- digital, software intensive services based on service-oriented architectures

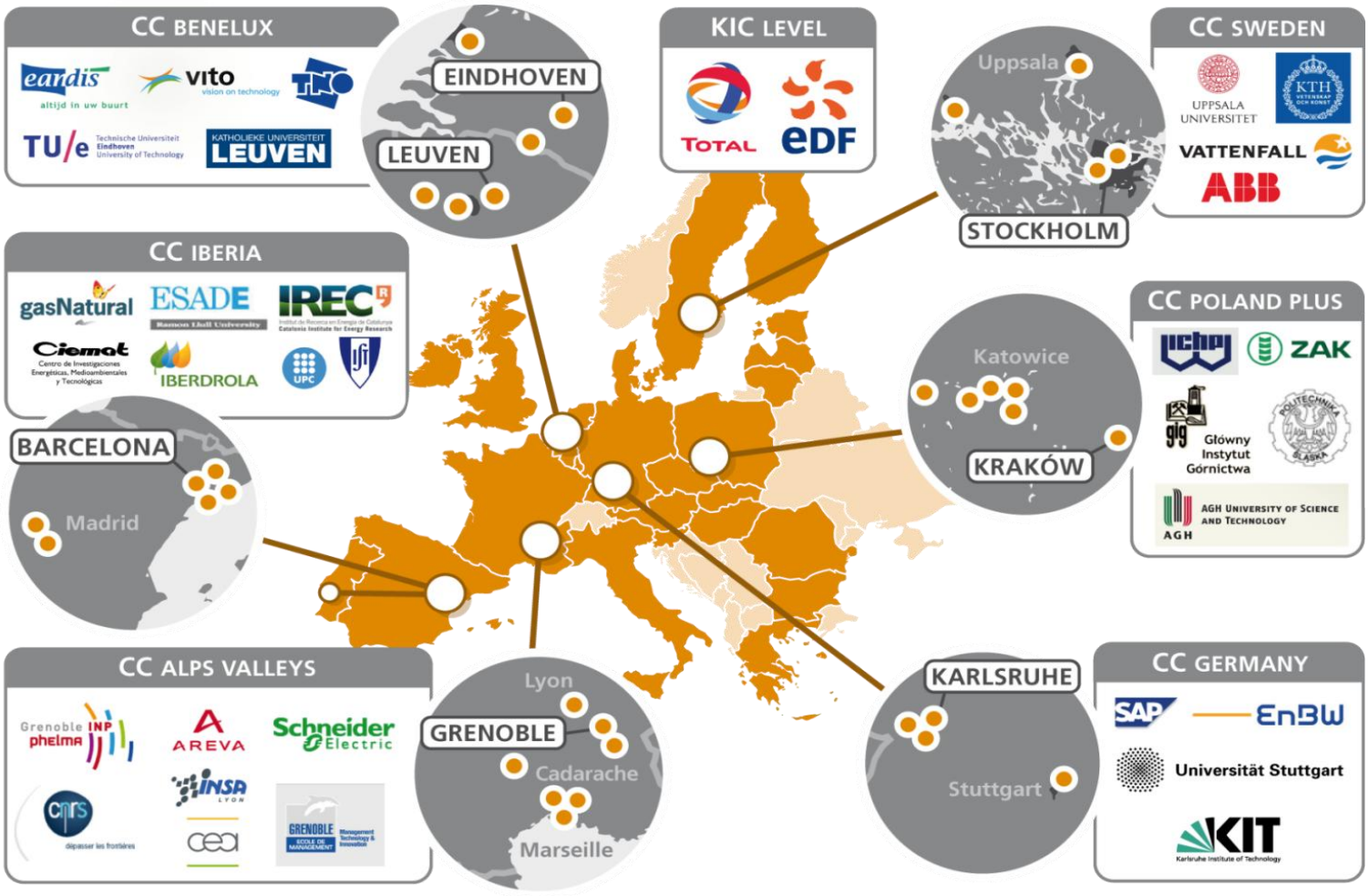
Internet Technology and Architecture (ITA)
- advanced networking technologies and architectures for distributed computer systems and networks

Distributed Systems and Services (DSS/Cloud Computing)
- scalable and reliable distributed systems and services

Security and Privacy (SaP)
- computer systems, capable of ensuring security, integrity and privacy.

Embedded Systems (ES)
- electronic and software components for a wide variety of personal and industrial devices

KIC InnoEnergy



- 11 companies,
  10 research institutes,
  14 universities
- 31 % industry partners
- 50 % of key research players in Europe
- Covering the entire energy mix
- Knowledge triangle balanced along all dimensions
- Strong connection with venture capitalists and local government

KIC InnoEnergy

MSc Environomical Pathways for Sustainable Energy Systems (SELECT)

MSc Smart Electrical Networks and Systems (SENSE)

MSc in Innovation in Nuclear Energy (EMINE)

MSc Renewable Energy (RENE)

MSc Smart cities

MSc Energy Technologies (ENTECH)

MSc Clean Coal Technologies

http://www.kic-innoenergy.com/education/our-master-school-in-sustainable-energy/