

Globalisation of Research and Innovation at policy and institute level in an EU context

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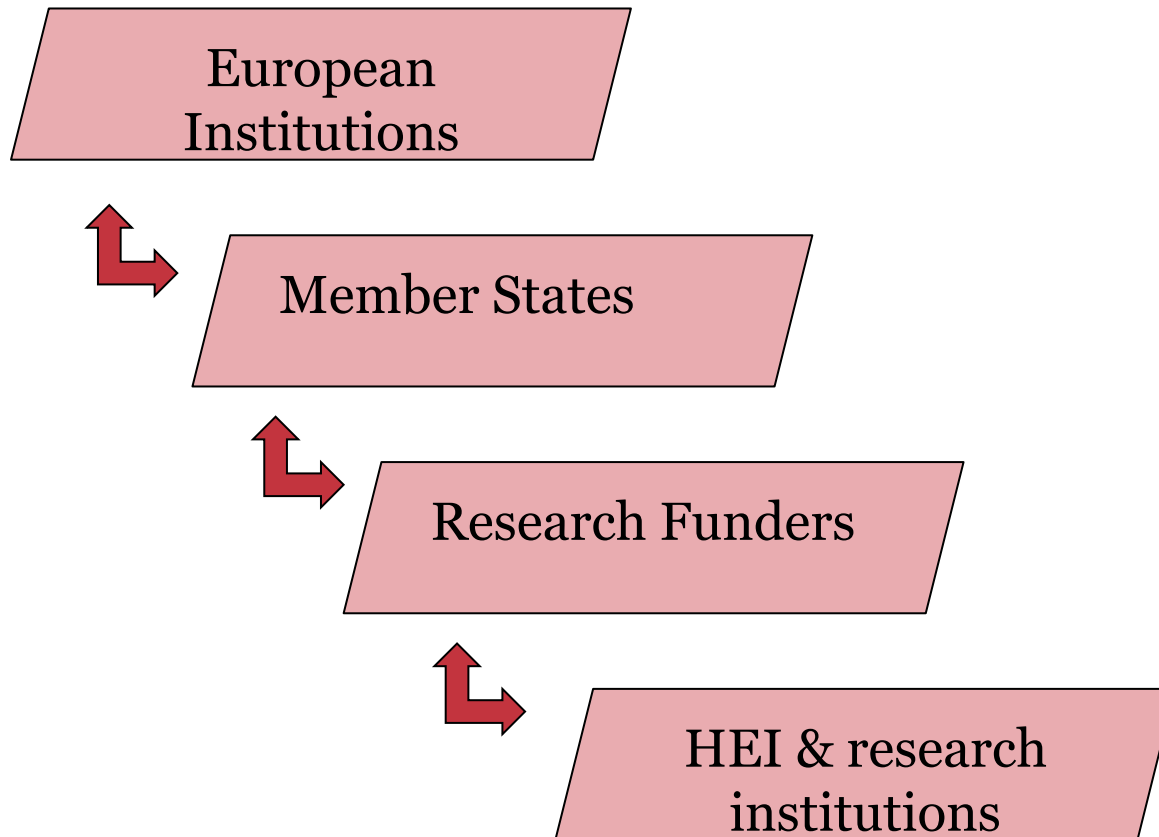
15 September Graz

36th Conference of Rectors and Presidents of European Universities of Technology

This presentation

- Internationalisation at different levels
- National policies for R&I internationalisation
- Research Funders stimulating international cooperation
- Internationalisation at Institutional Level
- Some points for discussion

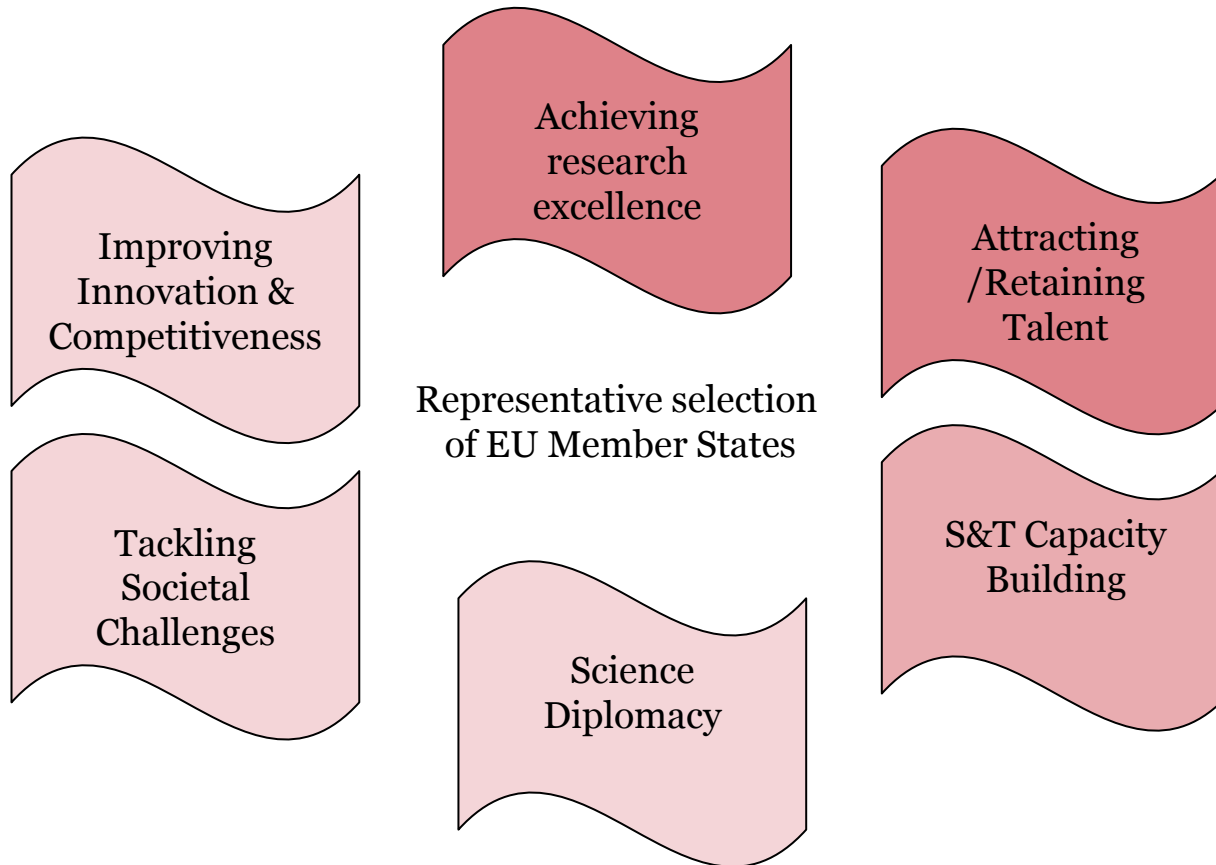
Different R&I internationalisation levels in my talk today



National R&I internationalisation strategies...

- Today almost all EU countries have some form of R&I internationalisation objective in their national strategy
 - *Getting more out of H2020 and other EU funds*
 - *Collaboration with frontier science (e.g. collaboration USA)*
 - *Not missing out on opportunities with BRICS (especially China)*
 - *Neighbouring countries policies*
- The internationalisation strategies encompass more than only the HEI sector
- But very few countries have clear policy goals or targets what they want to achieve with internationalisation of R&I
- Studies for the European Commission on how we could monitor and evaluate whether we are making progress -> **challenge!**

Policy Rationales for R&I cooperation in Member States



Example: Germany dedicated R&I Internationalisation Strategy



- German strategic goals:
 - *Excellence (through exchange and competition with world best)*
 - *Education and qualifications*
 - *Access to global innovation value chains*
 - *Cooperation with emerging and developing countries*
 - *Addressing societal challenges*

Measuring policy achievements in S&T Cooperation

- Major bottlenecks in measuring policy performance
 - *Policy objectives and expected outcomes not clearly defined (particularly with a mix of rationales) or targets set*
 - *How to isolate effects by policies from independent ‘internationalisation’ trends: attribution problem*
 - *Lack of data on internationalisation (people, collaborations, networks)*
- *If something is measured it is mostly:*
 - *Cross-border co-publication data*
 - *Number of foreign researchers/students in institutions or country*
 - *Results for specific programmes (# of int. projects in programmes)*
 - *Success in EU programmes*

RESEARCH FUNDERS

Research Funders increasingly build in incentives

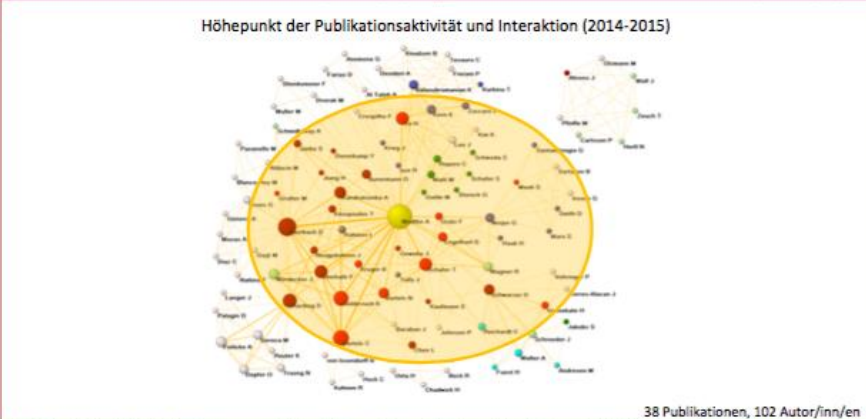
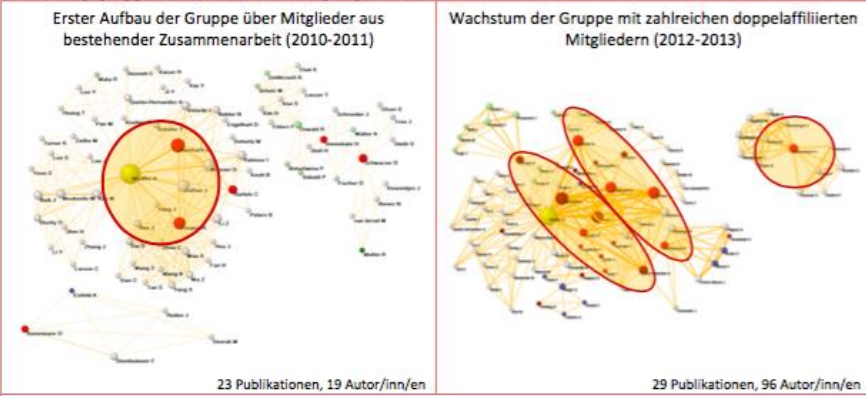
- Some Research Funders have dedicated International Offices
 - *Example: Austrian FFG (EU and ‘Beyond Europe’)*
- Other Research Funders have ‘mainstreamed’ internationalisation across all its programmes and thematic areas
 - *Example: Research Council Norway*
- Typical instruments
 - *Bilateral and multilateral cooperation agreements*
 - *Public-Public Partnership programmes for Societal challenges*
 - *Visiting professors / researchers schemes*
 - *Support for better access to EU Funds*
 - *Support to set up joint Institutions outside Europe*
- The Innovation Rationale proves more difficult to translate into actions and instruments

Example: Alexander von Humboldt Professorships

- Support of €3,5 to 5 million to set up new group
- Evaluation of the programme 2008-2015
- Half of the awarded professors have non-German nationality
- ‘Traditional’ methods of measuring scientific impact:
 - *Bibliometrics and network analysis using bibliometrics*
- Interesting are also the ‘qualitative’ findings
 - *Foreign professors have a positive impact on the ‘culture’ within the universities*
 - *Are more daring to break through ‘unwritten customs’ in academia*

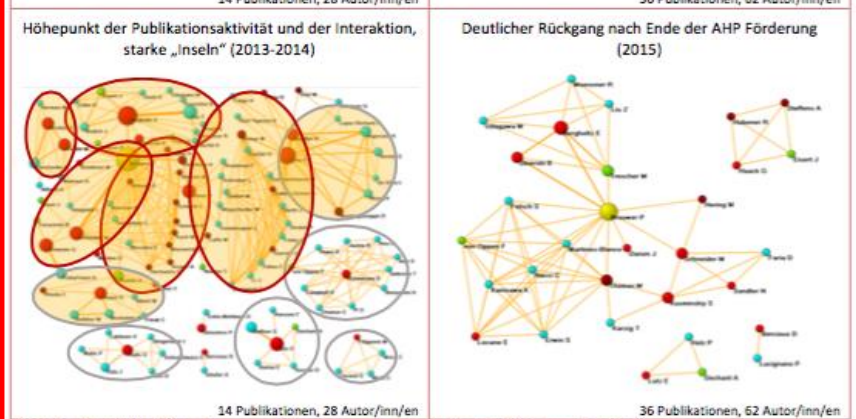
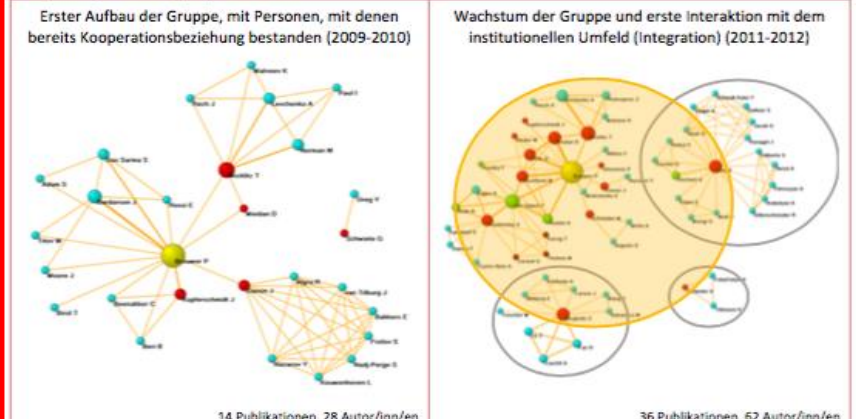
Examples of AvH-Prize influence on academic networks

Abbildung 9 Bibliometrische Netzwerkkarten eines doppelaffilierten Humboldt-Professors und seiner Forschungsgruppe, 2010-2015, Förderung abgeschlossen



Quelle: Daten WoS, Berechnung und Darstellung Team Bibliometrie (Universität Wien), Technopolis

Abbildung 7 Bibliometrische Netzwerkkarten eines Humboldt-Professors und seiner Forschungsgruppe, 2009-2015, Förderung abgeschlossen



Quelle: Daten WoS, Berechnung und Darstellung Team Bibliometrie (Universität Wien), Technopolis

HIGHER EDUCATION INSTITUTIONS

European Parliament Study reviewing HE internationalisation

Focus on:

- Student mobility
- Staff mobility
- Internationalisation of curriculum
- Credit mobility
- Degree mobility
- Trans-national education
- Internationalisation 'at home'
- Partnerships

Drivers:

- Global culture
- Competition and commercialisation
- Social Cohesion



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INTERNATIONALISATION OF HIGHER EDUCATION

STUDY

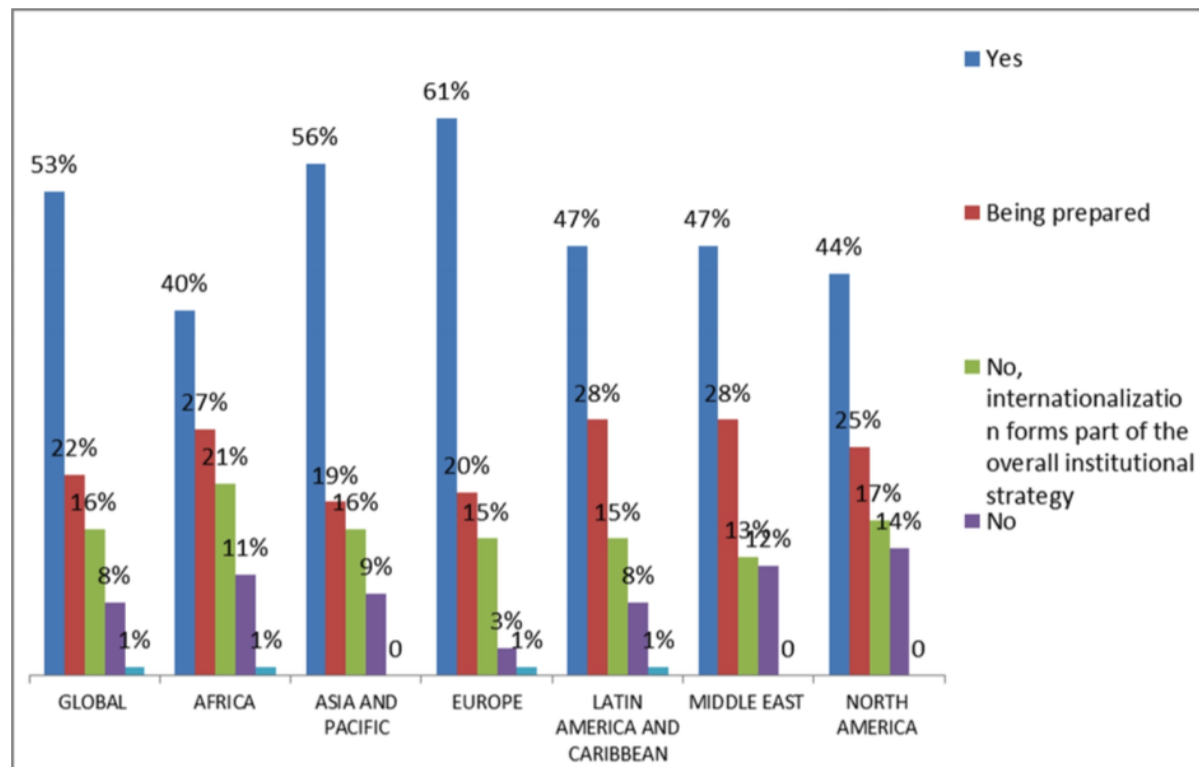
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2015



Over 80% of EU institutions have Int. Strategy in place or under preparation

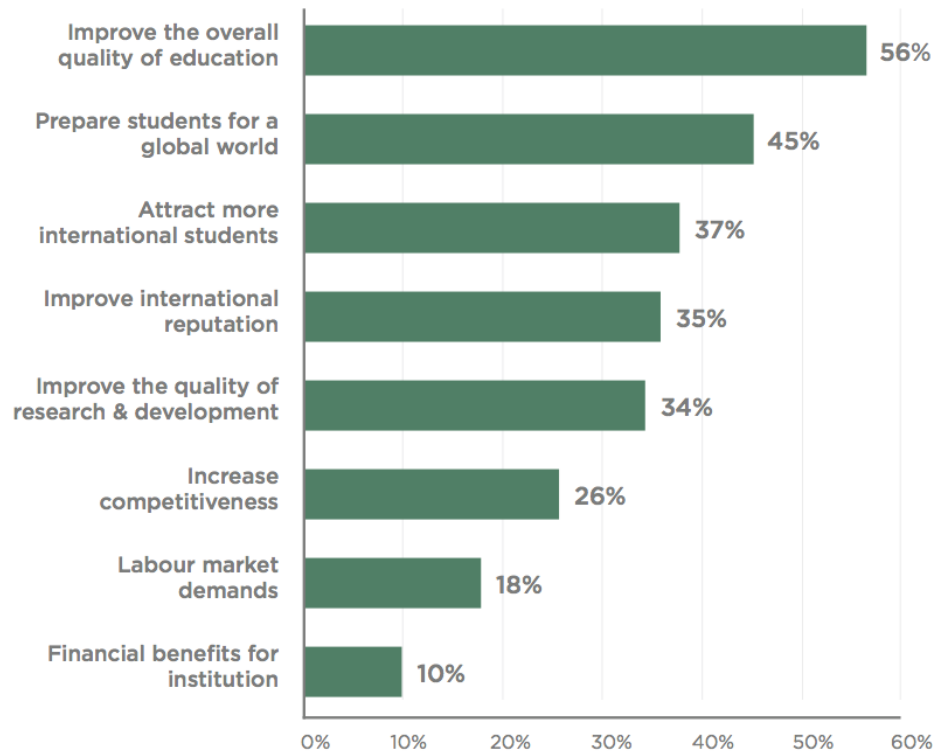
Figure 4: Internationalisation policy – regional results – IAU 4th Global Survey



EAIE Barometer Internationalisation in Europe

Figure 2

Most important reasons to internationalise (multiple answers possible) (N=1501)



So it seems to be all about the global competition for talent and raising the quality of education and research

The Innovation Rationale: a neglected aspect of HEI internationalisation strategies?

- Universities of Technology play a key intermediary role as applied research partner for international business and a stepping stone for (potentially) global start-ups
- Very little literature and data on internationalisation of the ‘innovation mission’ of universities
- Is active attraction of globally operating corporations just for the ‘top-notch’ universities?
- Many countries seem to have national barriers to work with foreign private sector research partners -> public money shouldn’t cross borders

Policy Example: Cambridge –MIT Institute (CMI)

- Funded by the British government, “*in recognition of MIT’s commitment to share its successful approach to connecting public research with innovation and economic growth*”
- Virtual Institute receiving 65 million pounds from UK government between 2000-2006
- Research projects for big companies such as Rolls-Royce and Boeing (silent aircraft initiative), Dow Pharmaceuticals
- Interdisciplinarity
- Joint Educational Programmes

Technopolis Group independent review of CMI in 2008

- Successes were:
 - *CMI funded excellent fundamental applied research*
 - *Impact of joint publications factor 2 higher than equivalent research in Cambridge, for MIT the factor was less high*
 - *Important Educational development work, e.g. entrepreneurship training for researchers and tech transfer training for commercialisation staff (Cambridge Enterprise)*
 - *Considerable commercialisation outcomes (IP, spin-offs)*
- However organisationally not a great success
 - *Research cultures in both institutes not really changed*
 - *Changes in management in short period*
 - *No codification of principles and procedures*
 - *After 2006 CMI silently ceased to exist*

CMI – Inpatient policy stakeholders

The screenshot shows the Guardian website interface. At the top, there are navigation links for 'sign in', 'become a supporter', 'subscribe', and 'search'. The main navigation bar includes categories like 'UK', 'politics', 'world', 'sport', 'football', 'opinion', 'culture', 'business', 'lifestyle', 'fashion', 'environment', 'travel', and 'jobs'. The 'the guardian' logo is prominently displayed on the right.

2003!

Higher education
In search of results

The collaboration between MIT and Cambridge has been something of a disappointment so far. John Crace meets the new men at the helm who aim to change all that

Tuesday 22 April 2003 00:51 BST

There are many things higher education could get along quite happily with, but cash isn't generally one of them. But for the Cambridge-MIT Institute of Technology one could make an exception.

The collaborative venture between Cambridge University and the Massachusetts Institute of Technology was launched in November 1999 to exploit the strengths of both institutions to create hi-tech businesses and wealth for the UK. The project appears to have been a success so far.

Most popular

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HOME / NEWS / BIOMEDTECH / ORTHOMIMETICS ACQUIRED FOR £14.3M

17 November, 2009 - 08:07 By Staff Reporter

Orthomimetics acquired for £14.3m

Cambridge regenerative medicine start-up Orthomimetics is to be acquired by Belgian company TiGenix in an all-share deal that values the company at £14.3m.

Orthomimetics, a spin-out from the University of Cambridge and the Massachusetts Institute of Technology (MIT), was founded in 2005 and specialises in implants for damaged bone joints. In a conference call, TiGenix CEO and founder, Gil Beyen said the acquisition was motivated by a desire to build a fully-integrated company with a "leadership position" in the emerging field of regenerative medicine. Orthomimetics' biomaterials approach to cartilage regeneration adds to TiGenix's existing cell-based capability, while allowing both companies' products to be sold through the same sales force. TiGenix's ChondroCelect product, which takes healthy cartilage-forming cells from the patient, grows them outside the body and then reimplants them, became the first Advanced Therapy Medicinal Product to be approved by the European Commission.

2009

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29 Oct 2008 | Science | Business | Early Stage Deals

Cambridge/MIT spin-out gets &#pound;600K government grant

2008

Collaboration

Orthomimetics Ltd, a spin-out from Cambridge University's joint venture with MIT, has received a £600,000 grant from the UK Technology Strategy Board to fund an R&D project that aims to improve joint tissue regeneration.

To summarise

- International R&I cooperation at heart of European and Member States' policy strategies
- A wide range of rationales that include, not only scientific, but also socio-economic, budgetary and foreign policy perspectives
- This broad set of policy goals is only rarely evaluated in terms of progress and success
- HE Institutes focus more narrowly on the 'talent' and 'excellence' rationales
 - *Is this a mismatch of policy and institutional drivers?*
- EU HEIs globally at the top in strategy formulation
 - *Is the implementation of the strategy reviewed at Institute level?*
 - *Do Institutions adequately address the cultural aspect of internationalisation in their organisations?*

Discussion Issue for CRP consideration

- Given the important role of Technical Universities in the European Innovation Area: should Institutions put more emphasis on internationalisation of the ‘Third Mission’ in their institutional strategies (rationale of Innovation and Societal Challenges)?

