

AAAS annual meeting

**Cross border responses to Global Challenges:
can Everybody win?**

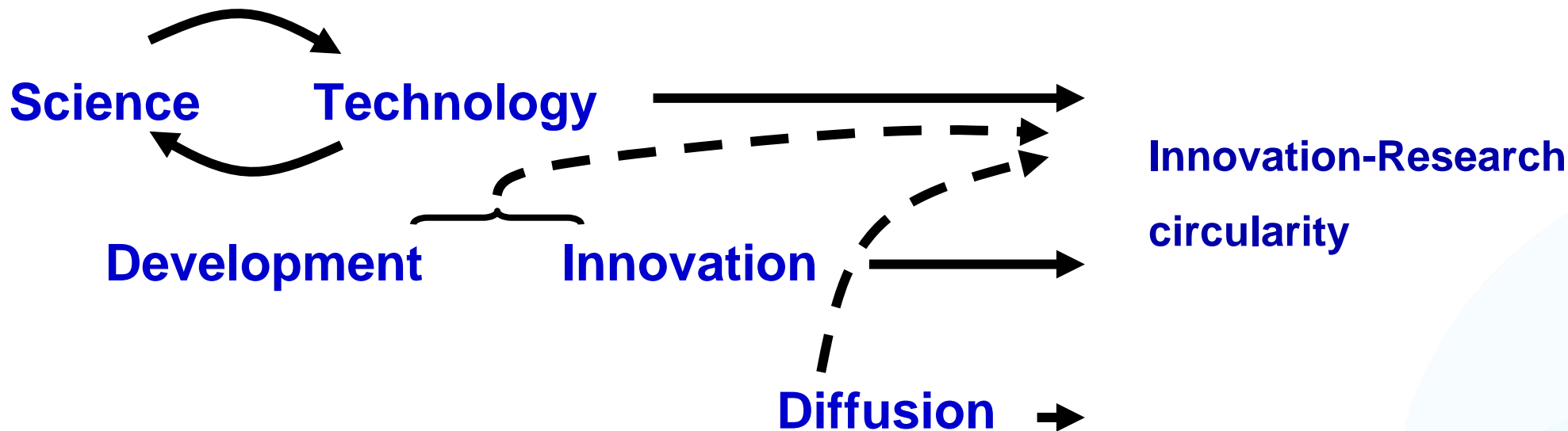
The challenge of stimulating World-Leading Innovations

Giovanni Colombo - *EIT Executive Committee*

Washington, 18 February 2011

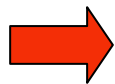
Innovation models are changing

over the (structurally unchanged) Science - Technology cycle



- User - based innovation
- Open innovation
- Co-operative approach

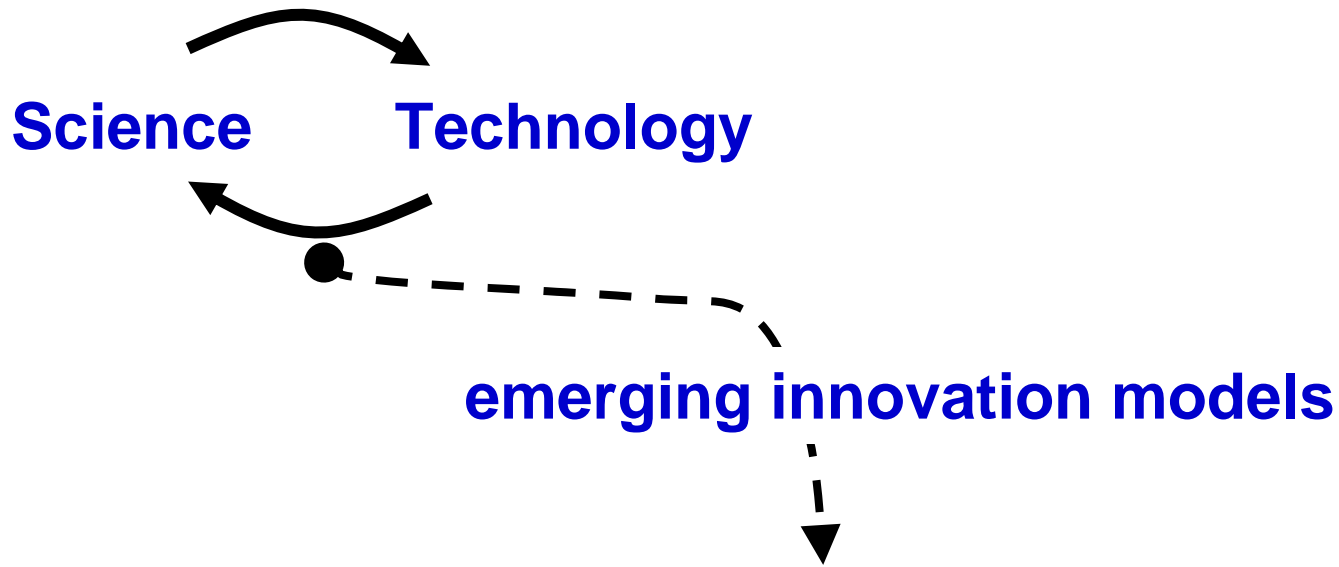
reshape



- supply-demand dynamics
- complementariness, lock-in
- innovation practices
- market chances

Product and service innovation

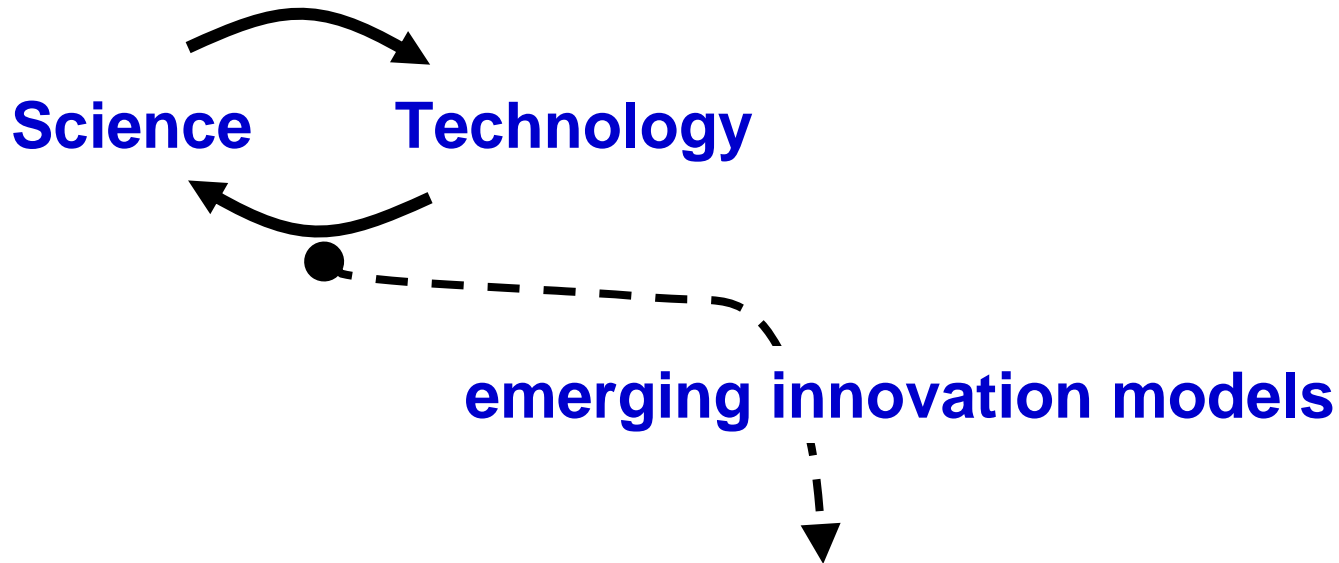
cooperation, embedded innovation, context awareness



- composite product and service creation; functions and data *openness*
- permanent β -version; process virtualisation
- demand-based innovation; context-awareness and *local* knowledge

Network economy

how value is created on top of connectivity and interaction

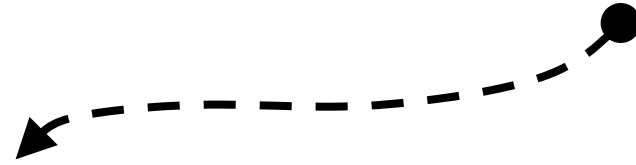


- extended communication space
- enabling new value chains in the overlay dimension
- embedded features for process innovation (m-to-m; IoT)
- model of expected solutions for anticipatory innovation

steps

New paradigms are challenging European weaknesses

(unexpected gain?)



- discontinuity of the innovation action in knowledge-intensive sectors
- non-R&D based innovation in SMEs
- relatively low entrepreneurial culture (low firms renewal) and innovation-driven education
- Insufficient organisational and process innovation
- market fragmentation, weak linkage of local industrial capabilities to global perspectives

EU-27 Innovation performance improving (+1.8% yearly in the last 5 years) but still behind (in average) the US

[European Innovation Scoreboard 2009]

Global challenges can re-shape economy

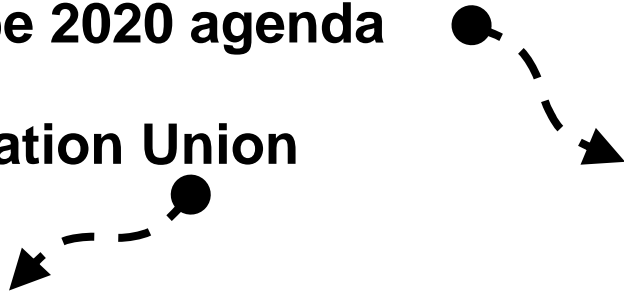
the European Union is trying-out



- societal challenges (global warming and energy, ageing, health and assistance, transport, logistics)
- polarisation to a sustainable economy (20%, 20%, 20%)

• Europe 2020 agenda

• Innovation Union



Research and Innovation key for:

- Education
- New financial measures
- Public procurement of Innovation
- Innovation Partnership

- Smart growth (knowledge-based)
- Sustainable growth (green, competitive)
- Inclusive growth (social impact, cohesion)

European diversities

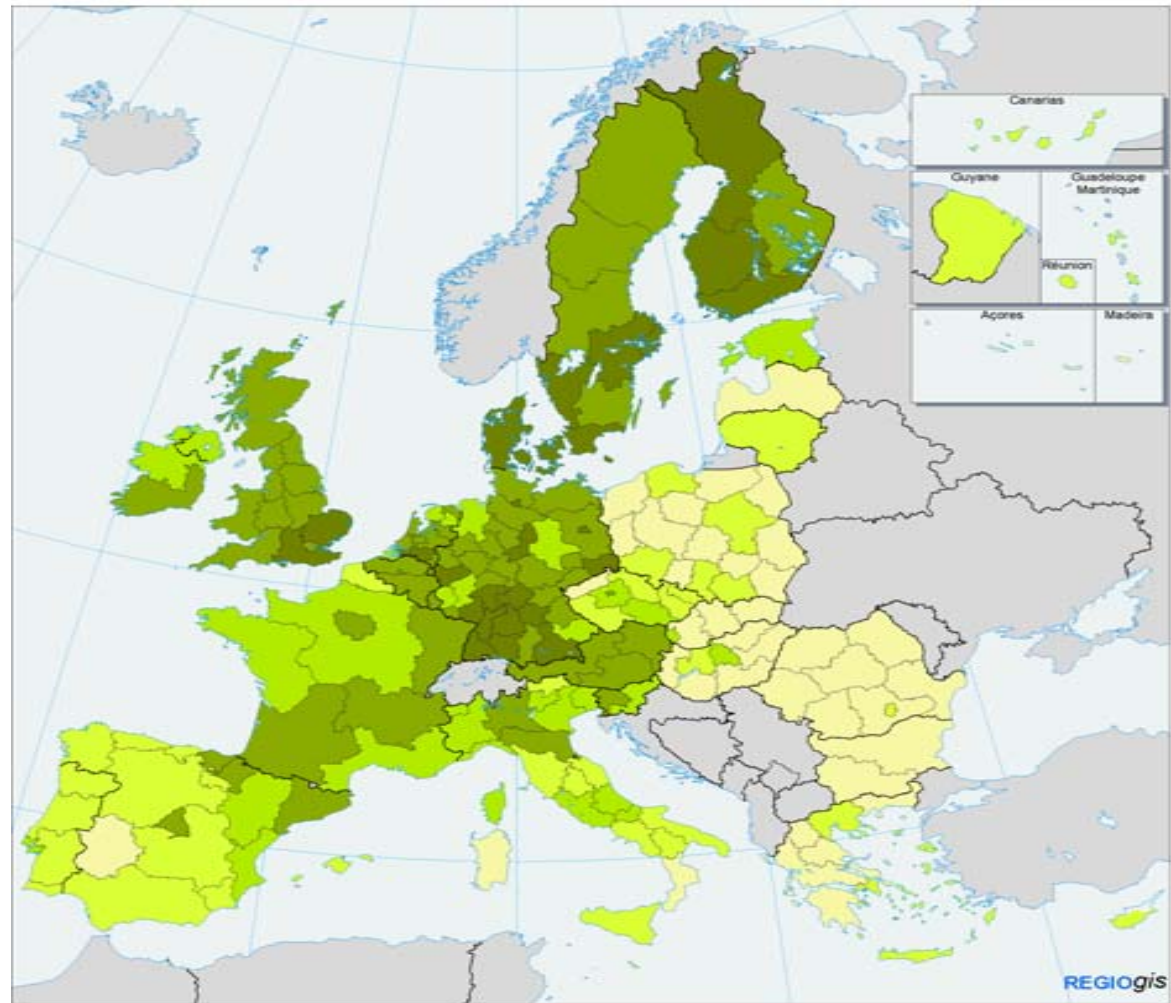
advantages and issues

- Languages
- Culture heritage
- Non-homogeneous innovation performance



Articulation of measures

- Global R&D & Innovation
- Regional:
 - Capacity building
 - Smart specialisation



Regional Innovation Performance Index, 2006



Source: DG Enterprise, MERIT

0 500 Km

© EuroGeographics Association for the administrative boundaries.

European Institute of Innovation and Technology

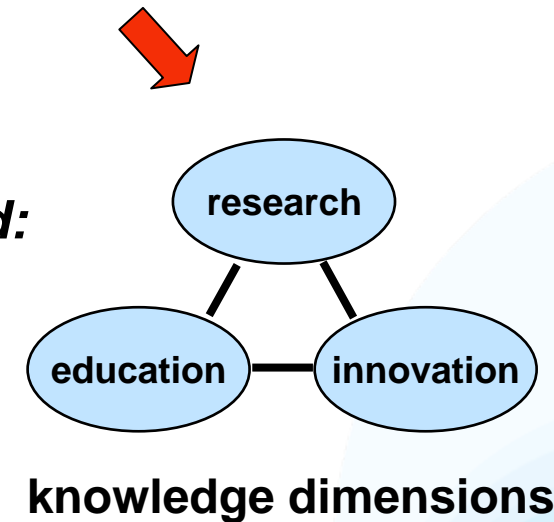
created in 2008

**To Improve European competitiveness, sustainable economic growth,
stronger innovation capability and impact**

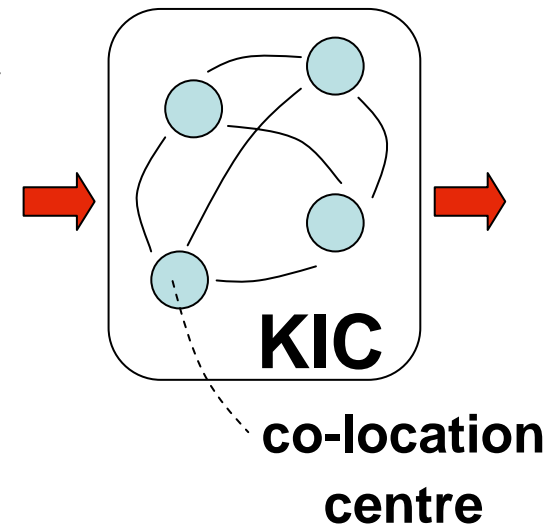
End 2009 *Knowledge and Innovation Communities created:*

- build innovative 'webs of excellence'
- create new business
- educate and develop entrepreneurial people
- have societal impact, e.g. job creation and brain gain

- **KIC's Stakeholders:** **Business, Entrepreneurs, R&D Organisations,
Education, Investment Communities, Local and
National Governments**



A Knowledge and Innovation Community



High-profile, structured, independent European Body
grouping Stakeholders under a common business

and acting in geographically distributed co-location centres

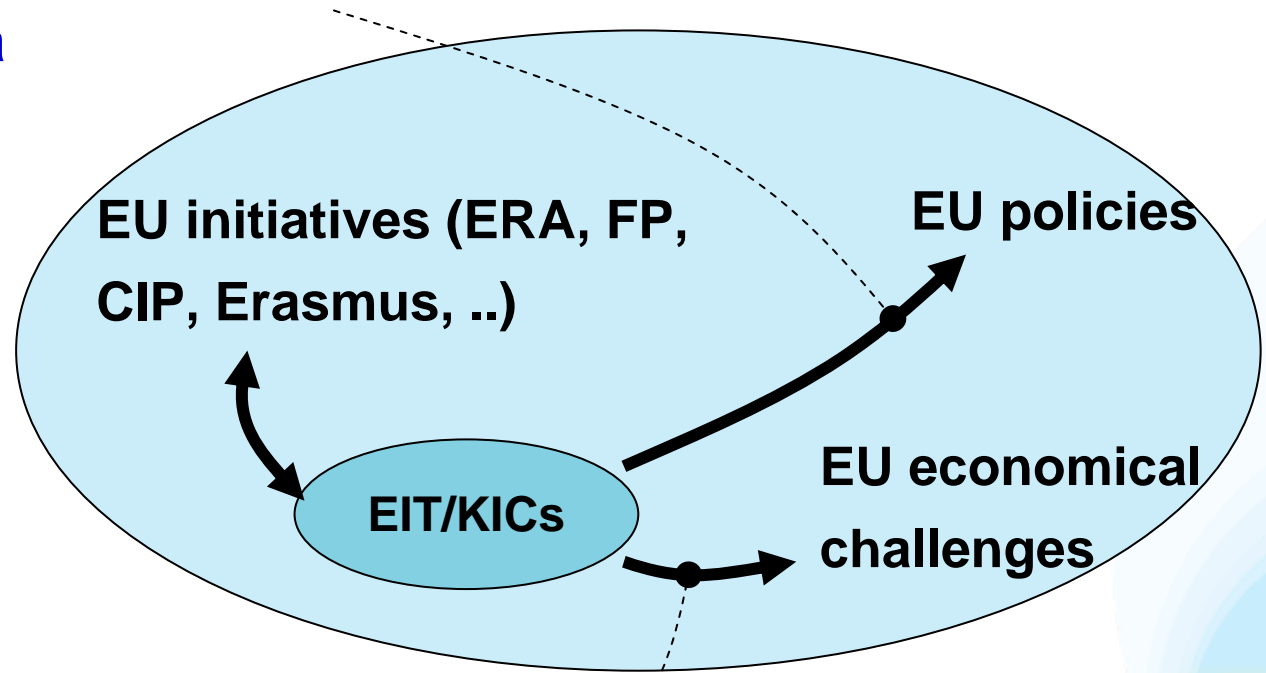
- fostering international participation
- **climate change and mitigation, sustainable energy
and future of ICT the first acting KICs**

... aiming at becoming a world leader in its field with measurable impact
on society (economic, scientific, educational, entrepreneurial)

... minimum life 7 years

EIT/KICs - a double role in the EU context

to model and disseminate: knowledge creation, innovation, business and education schemes and related performance factors as a support to EU 2020 policies



to develop and experiment new economic configurations with a significant impact on European Society

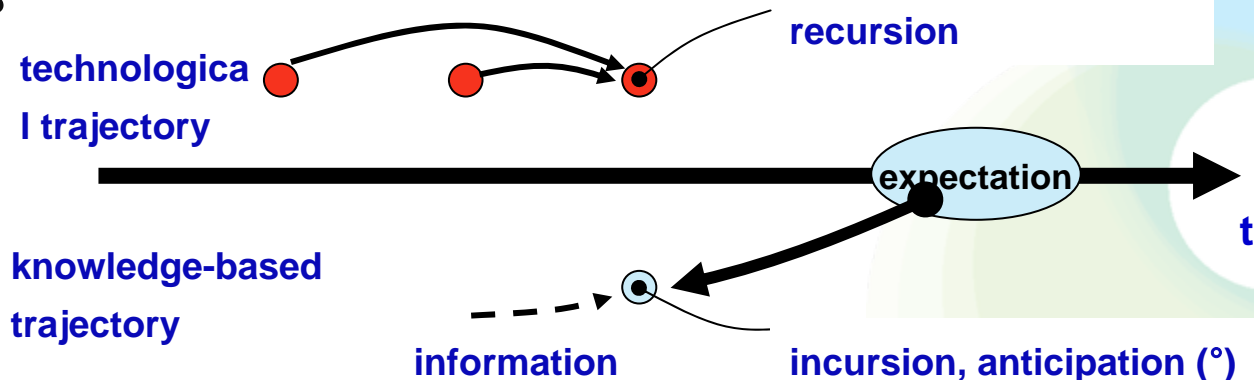
Global Challenges *un-match* radically roles and models



- **Knowledge** from interacting social dynamics (**Research, Industry/Market and Public policy/regulation - triple helix**)
- **Expectation** interpretative key to create knowledge

- Sustainability: Expectation to be constructed with all social forces: **inter (multi) disciplinary** Projects – **humility and compassion** to win together
- both *breakthrough* and *non-technological* innovation needed (*present, expectation-driven* choices

apply *present* technologies)



Sustainability, Research and Innovation

global collaboration, local implementation

- **International collaboration (projects and financial measures) for Research is essential (coded knowledge)**
- **New policies and regulation needed to enable radical transformations of sustainability-critical process (renewables, transportation, health)**
- **Local implementation is context-dependent (tacit knowledge)**
- **Innovation-induced benefits are registered and measured locally. Metrics are essential (and complex to identify)**
- **Successful local experiences and models to be shared globally**

Some paradigm shifts in Global and Local cooperation

- **Radical transformations take place in societal-sensitive processes**
- **Research/Academic bodies are assigned a wider responsibility; international cooperation gains an ethical sense**
- **Creativity grows in *the interface* between different mindsets: give room to diversity**
- **Value to local capabilities: natural balance against knowledge divide (preserving knowledge does not mean to aim at self-sufficiency)**

Global challenges: new attitudes of basic players

- **Public Administration:** less fragmented innovation funding; active role in *innovation procurement and early adoption*
- **Industry:** taking up of open and co-operative innovation; greater value to knowledge; address collective benefit through public funding
- **University:** grater polarisation of multi disciplinary and non-technological research; new education policies (from *technology to business to Society*)

Creativity and entrepreneurship in education are key

(a renewed role of University)

New models should educate:

- **to act under uncertainty and complexity**
- **to adopt a co-operative approach for innovation (with industries)**
- **to use modelling techniques to bridle the *dynamics* of innovation and to assess *induced benefits***
- **to challenge not only on “*how*” but also on “*why*” (from knowledge to wisdom)**
- **to develop curiosity, scepticism and inclusive view through contiguous disciplines (interdisciplinary approach and cross-fertilisation)**