

**International Innovation Networking & Technology Forum
(INOTEX-2016)**

Panel 9, Wed. 25_05_2016 16:00 to 18:00

**Effectiveness Requirements in
Networks for Innovation**

Rainer Hasenauer

Marketing Management Institute

Research Group High Tech Marketing

Wirtschaftsuniversität Wien

<http://www.wu.ac.at/mm/team/hasenauer>

www.hitechcentrum.eu

www.hitec.at

Agenda

1. Innovation network
2. Innovation network in Vienna / Austria
3. Innovation Networks: Features
4. Hard and Soft Success Factors in Innovation Networks
5. Innovation Networks: Behavioral Patterns
6. Answers to the Questions of the Forum of the 5th International Innovation and Technology Exhibition
7. Global Thinking
8. Lessons Learnt

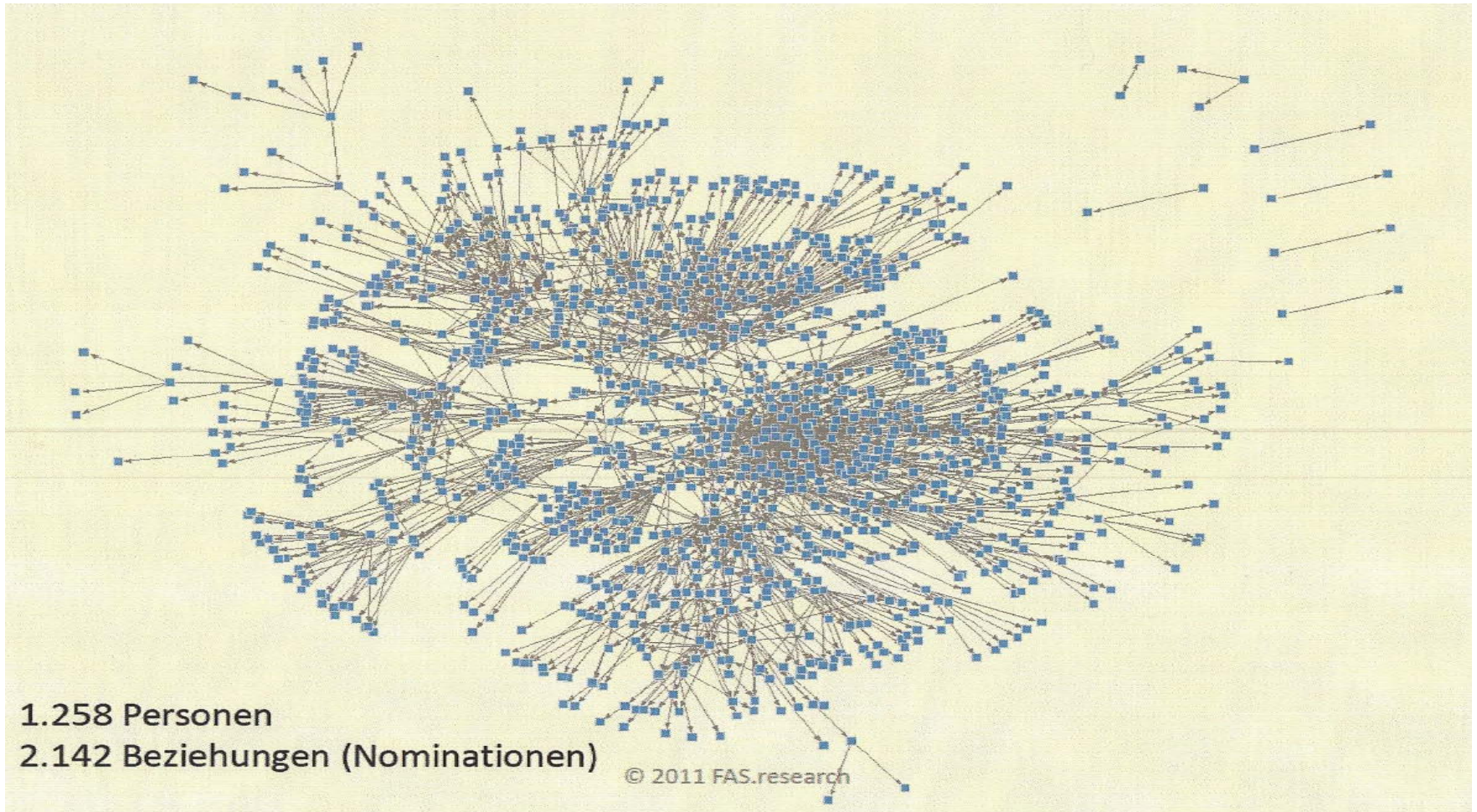
1. Innovation networks

- Increasing Importance
 - increasing number of networks with multiple organizations [1]
 - Increasing complexity of R&D
 - Decreased duration of product life cycles
 - Boost effects of enabling technologies
- => How to recognize the value of Innovation Networks?

2. Innovation network in Vienna / Austria

- A+B innovation frame work: Academia & Business
- University Spin Offs and University Start Ups
- **13** Years INiTS <http://www.inits.at/en/>
- **184** Start-ups
- **383** Patents granted
- **1.821** working places
- **203,5 Mio Euro** Private Equity (Business Angels, VCs, Strategic Partners)
- **108 Mio Euro** subsidies (AWS, FFG, Economic Agency Wien, etc.)

Example: The Whole Key Player Innovation Network ²⁾



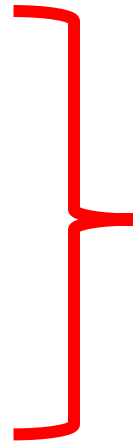
2) Innovation network: [4] Harald Katzmaier, 2011

3. Innovation Networks: Features

- Multidisciplinary:

Innovation requires always **multidisciplinary communication**

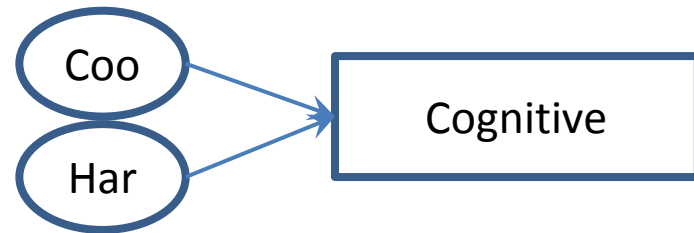
- Multicultural:
- Cross-border:
- Cross-industry:
- Multi-Stakeholder:



3. Factors with impact on innovation network as a whole [3]

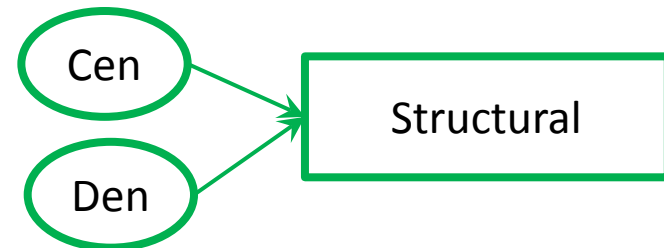
- **Cognitive:**

- Coordination [Coo]
- Harmony [Har]



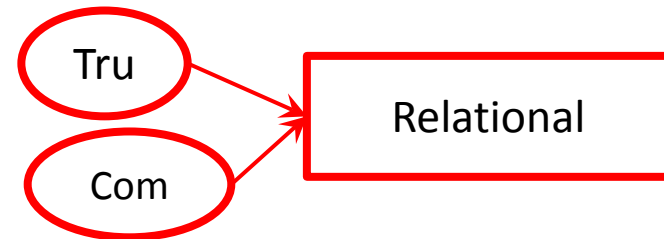
- **Structural:**

- Centrality [Cen]
- Density [Den]

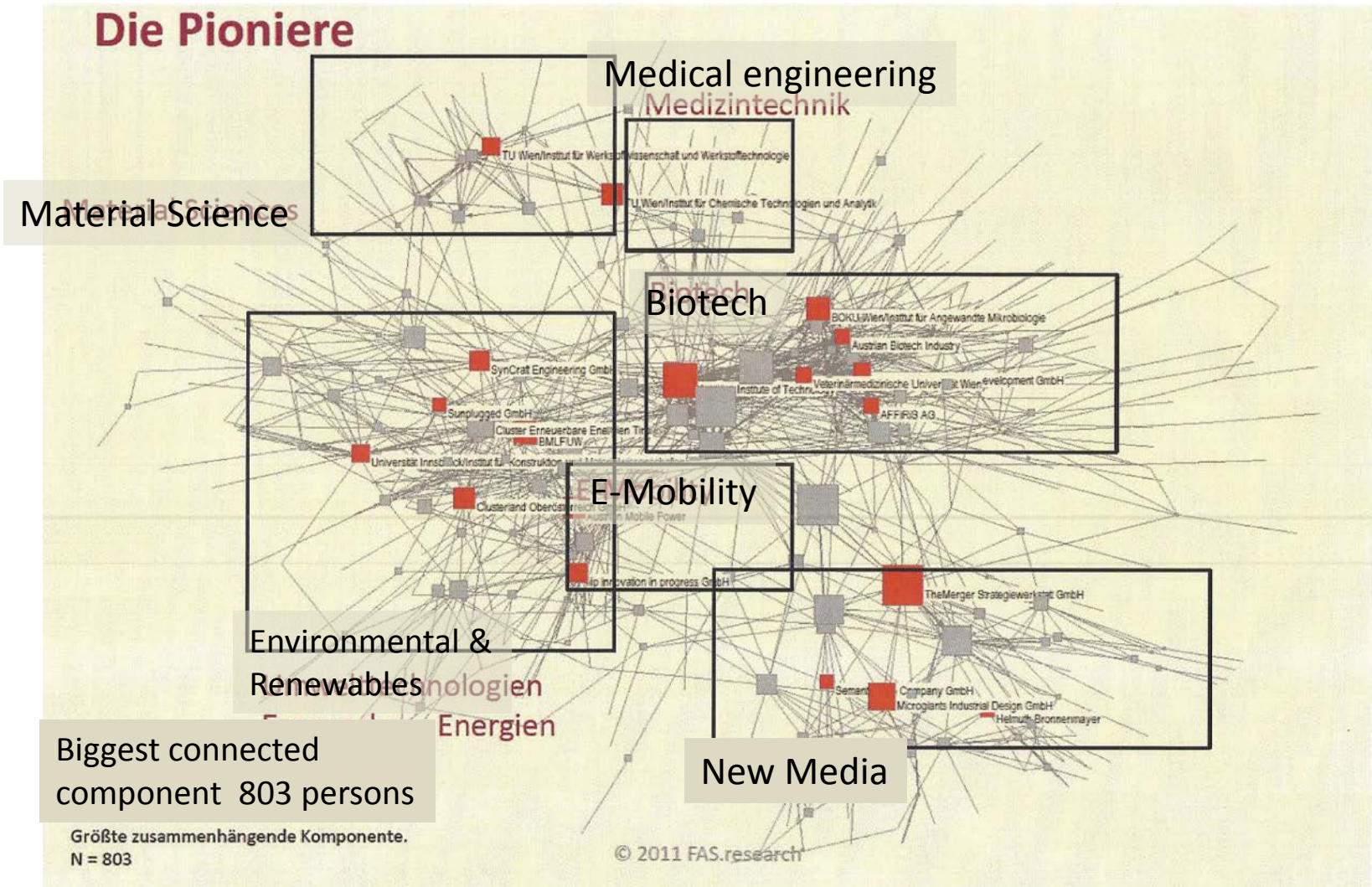


- **Relational:**

- Trust [Tru]
- Commitment [Com]



Innovation Pioneers Network 2)



2) Innovation network: [4] Harald Katzmair, 2011

Impact factors of Innovation Networks [3]

- **Cognitive factors:**

- **Coordination:** moderate intensity of control, leave the collaborating entities their identity!
- **Harmony:** conflict management and cooperation:
 - Actors involved from the very beginning
 - Mutual understanding of other's point of view
 - Conflict resolution at lowest possible level
 - Rather discuss issues than accept without comment
- **Early Integration of commercial partners** and their objectives in very early stages => when defining research agenda

Impact factors of Innovation Networks (2)

- **Structural Factors:** centrality and density
 - Power distribution affects network dynamics
 - **High centrality contradicts self organizing network behavior.** (node spectrum / indegree/outdegree)
 - Innovative networks should be **self organizing**
 - Self organizing behavior of R&D networks with hard & soft success monitoring **is efficient**
 - Density (actual# links/max.# links) affects control, distinguish between formal and informal links.
 - **High social and communicative competency** enriches knowledge development

Impact factors of Innovation Networks (3)

- **Relational factors:**

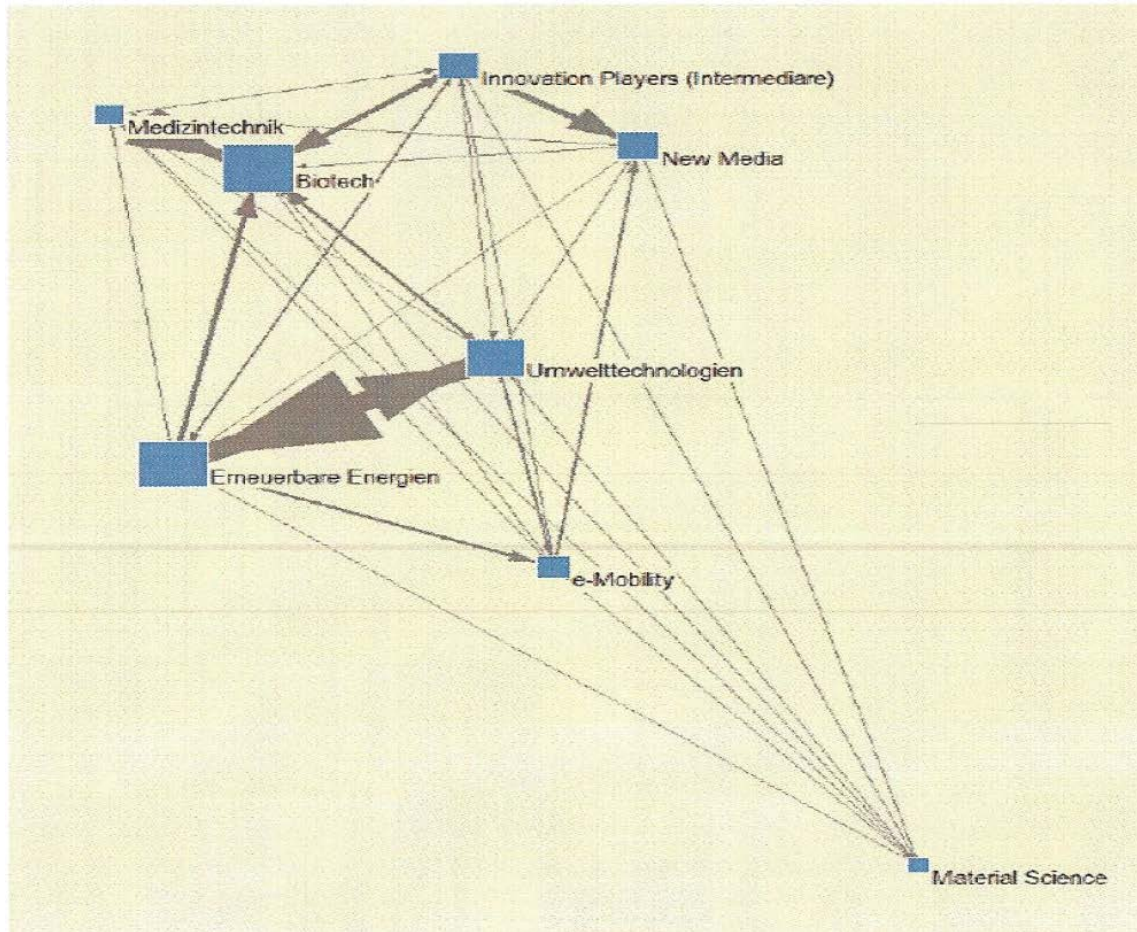
- **Trust**

- **Absent trust** implies R&D members become suspicious and control becomes burdensome
 - **Active trust** generates **free flow of information** and knowledge between actors, less allocated time for protecting against other actors

- **Commitment**

- Active commitment to the R&D initiative generates a **feeling of joint success**

Mutual Connections between Innovation Focuses ¹⁾



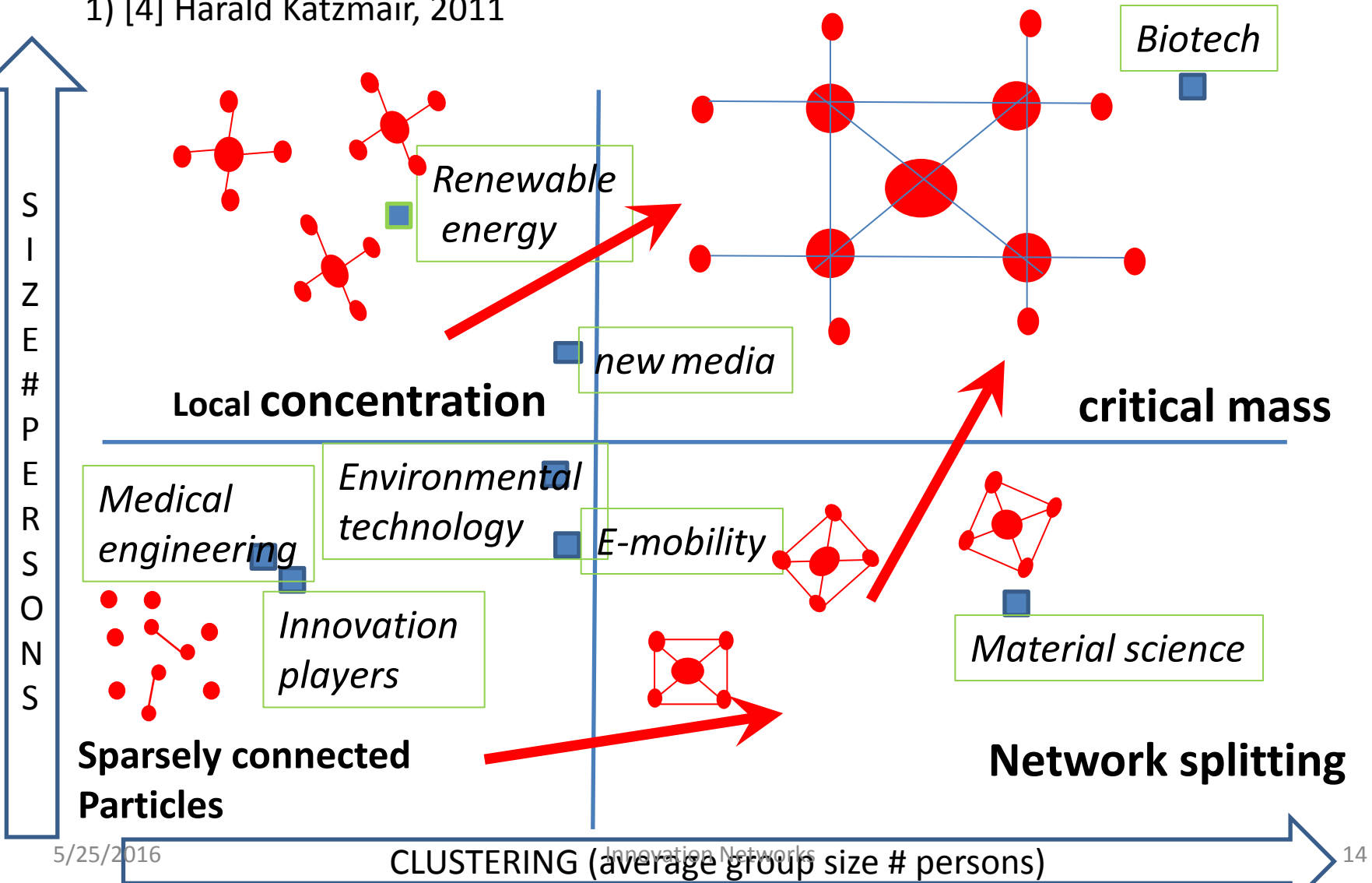
1) [4] Harald Katzmaier, 2011

4. Hard and Soft Success Factors in Innovation Networks

- **Hard success factors:**
 - # of patents (applied / granted)
 - # signed NDA's
 - R&D [\$] expenditure in % of value added [\$] and/or sales [\$]
- **Soft success factors:**
 - # of peer reviewed papers in top journals
 - Δ milestone [time AND budget] or % deviation.
 - Planned vs. Achieved TR-Level per R&D project-Milestone
 - Planned vs. Achieved MR-Level per D&C*) project-Milestone
 - Self evaluation vs. Peer evaluation within the R&D / D&C project
- **Aggregation of success indicators over the R&D network**

5. Innovation Networks: Behavioral Patterns¹⁾

1) [4] Harald Katzmaier, 2011



6. Answers to the Questions of the Forum of the 5th International Innovation and Technology Exhibition (1)

The Forum of the 5th International Innovation and Technology Exhibition invited to answer the following 5 important issues:

1- Do networks and networking among firms play a pivotal and significant role in innovation? *A: for specific industries in*

Austria: Yes

2- What type and form of networks could contribute more efficiently and effectively to innovation? *A: Self organizing*

3- Are there any differences between the role and form of networks in different stages of innovation process? *A: Yes, the closer to market the lesser self organized, due to financial risk and protection against hostile actions of competitors.*

6. Answers to the Questions of the Forum of the 5th International Innovation and Technology Exhibition (2)

4- What are the most important factors which promote or prevent the formation of a successful network for innovation?

A: promoting: freedom to self organizing entrepreneurial spirit generates sustainably growing market share and profit.

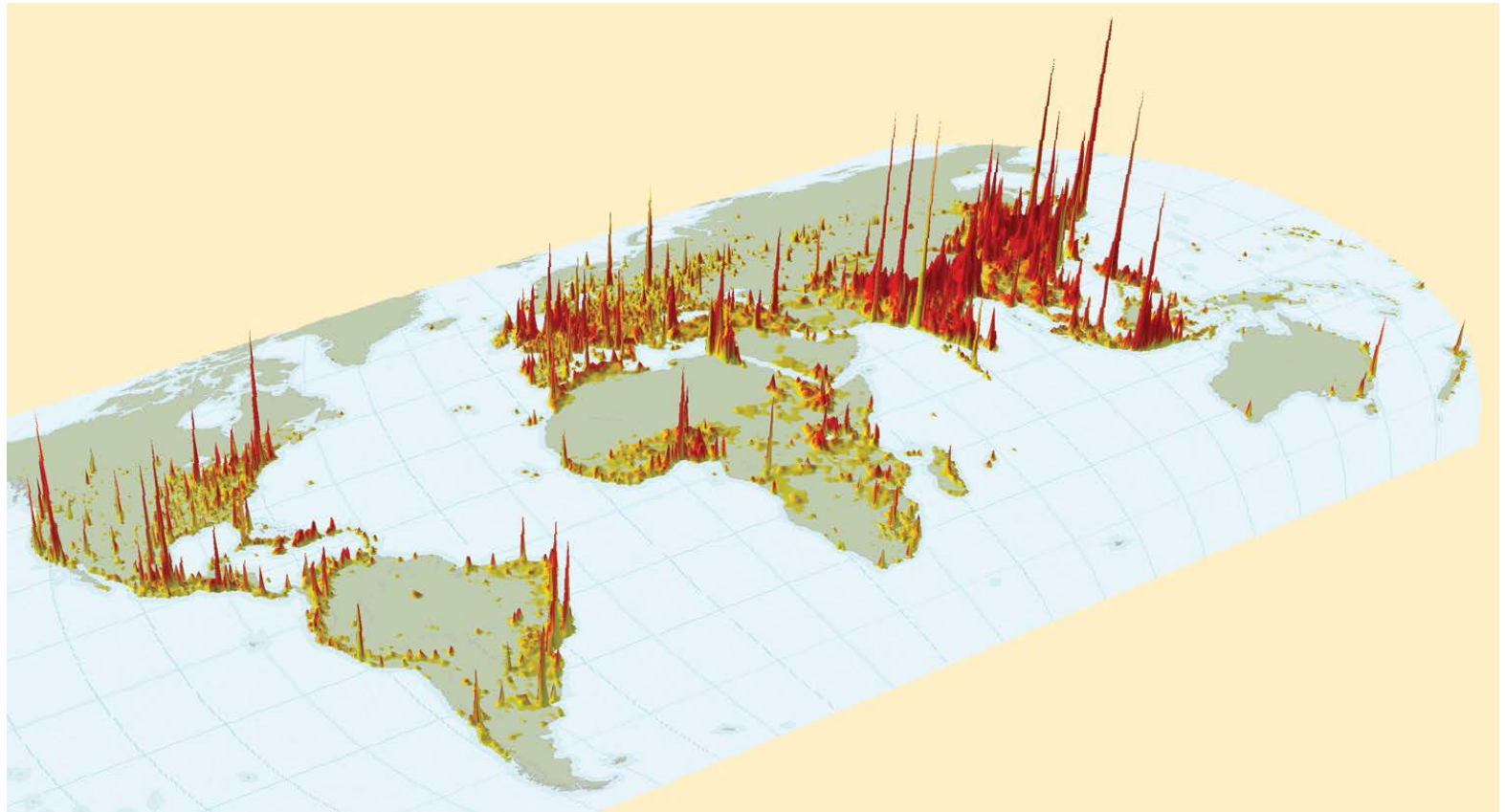
A: preventing: to less interdisciplinary communication and too less multidisciplinary R&D generate the peril of assimilation gaps in the market.

5- How could governments develop policies to create institutional mechanisms to support innovation network infrastructures?

A: promotion of entrepreneurial education with emphasis on technological innovation and technology marketing

A: public financial subsidies combined with founding start ups.

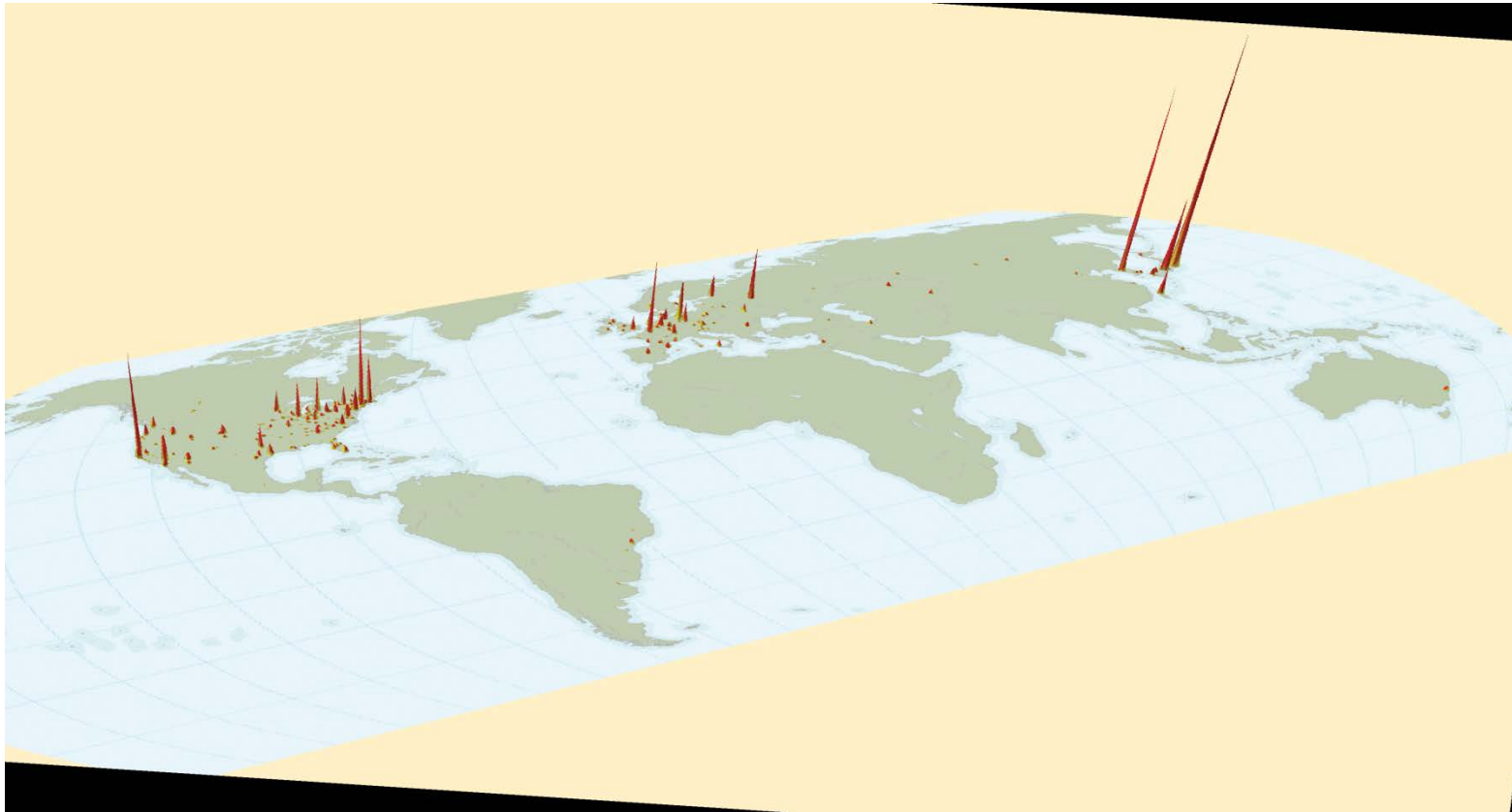
7. Global Thinking: Commercial innovation and *)



Evaluating the effectiveness of European ICT R&D and Innovation Systems

*) [5] WIPO: US patent and trademark office 2005

.....scientific advance are highly concentrated in a few regions *)



Evaluating the effectiveness of European ICT R&D and Innovation Systems

***) WIPO: US patent and trademark office 2005**

8. Lessons Learnt

**‘Innovation does not happen,
you make it happen!’**

Thank You!

Questions?

THANK YOU!

Q & A?

MAIL1: rainer.hasenauer@wu.ac.at

MAIL2: rh@hitec.at

SKYPE: rainer.hasenauer

References

- [1] Ahrweiler, P. & Keane, M.T. (2013). Innovation networks. *Mind & Society*, 12, 73-90
- [2] Hans F. van Aalst: Networking in Society, Organisations and Education, ISBN 92-64-10034-2 – © OECD 2003
- [3] Giselle Rampersad, Pascale Quester, Indrit Troshani, University of Adelaide: Managing Innovation Networks: An Exploratory Study in:
www.anzmac.org/conference_archive/2007/.../GRampersad_1.pdf
- [4] Harald Katzmaier, FAS Research Wien: "Understanding Networks: Die SchlüsselspielerInnen der Innovation in Wien" 13.12.2011
- [5] WIPO: US patent and trademark office 2005