

SCIENCE-INDUSTRY LINKAGES

intensity and character; the **GPN** perspective

regional knowledge institutions



firms in production networks



firms' demand for regionally specific knowledge
undermining factor, complementarities
form of interaction... impacts

Czech Rep = strong presence of MNCs + weak collaboration culture

regional innovation system



global production networks



in some aspects similar, contradictory in others

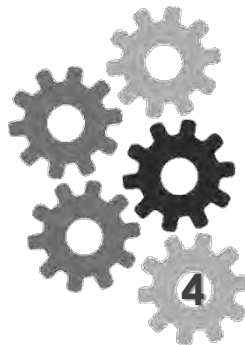


importance of ties – horizontal vs. vertical
embeddedness – in region vs. in network

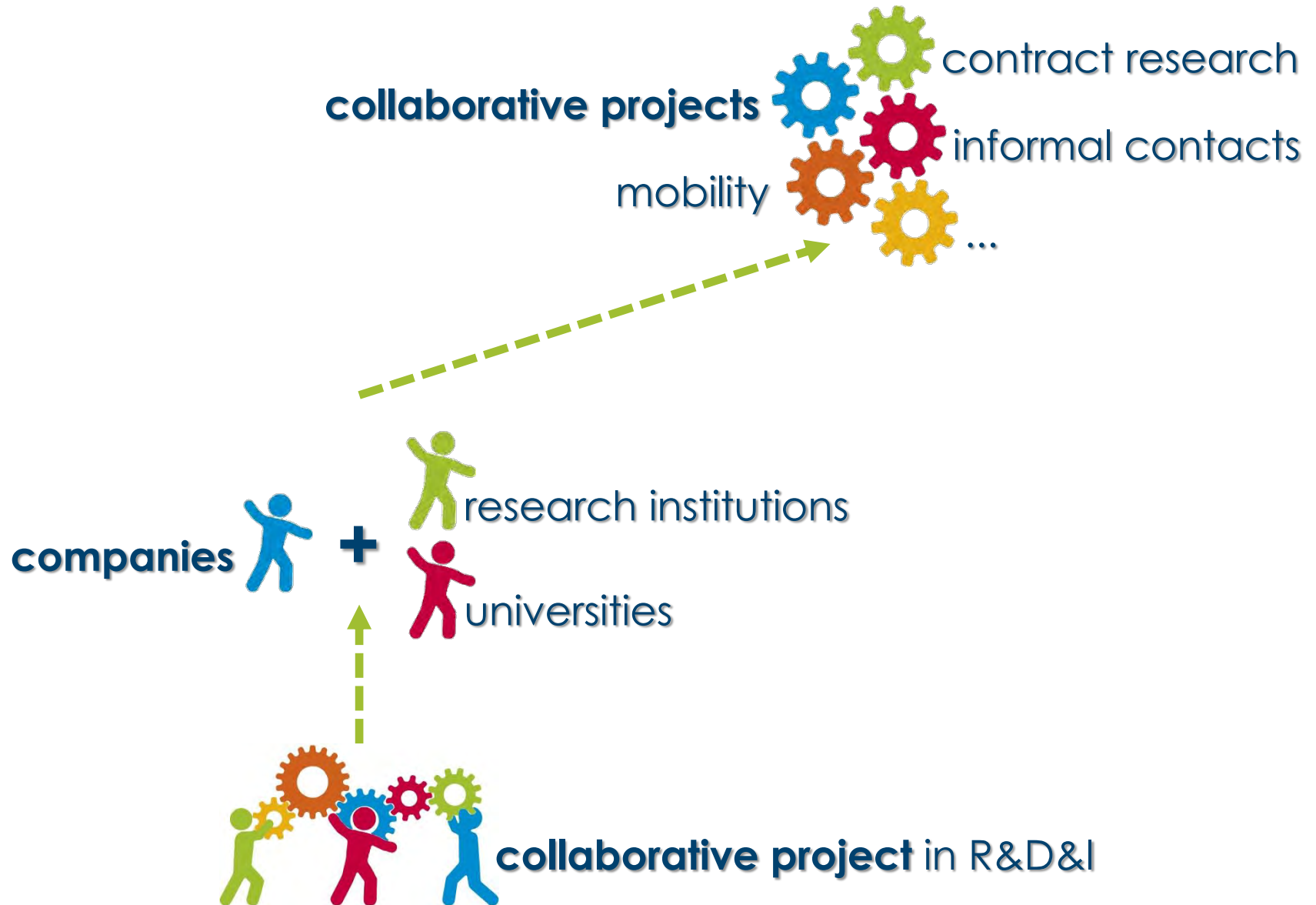


distributed knowledge networks
strategic coupling

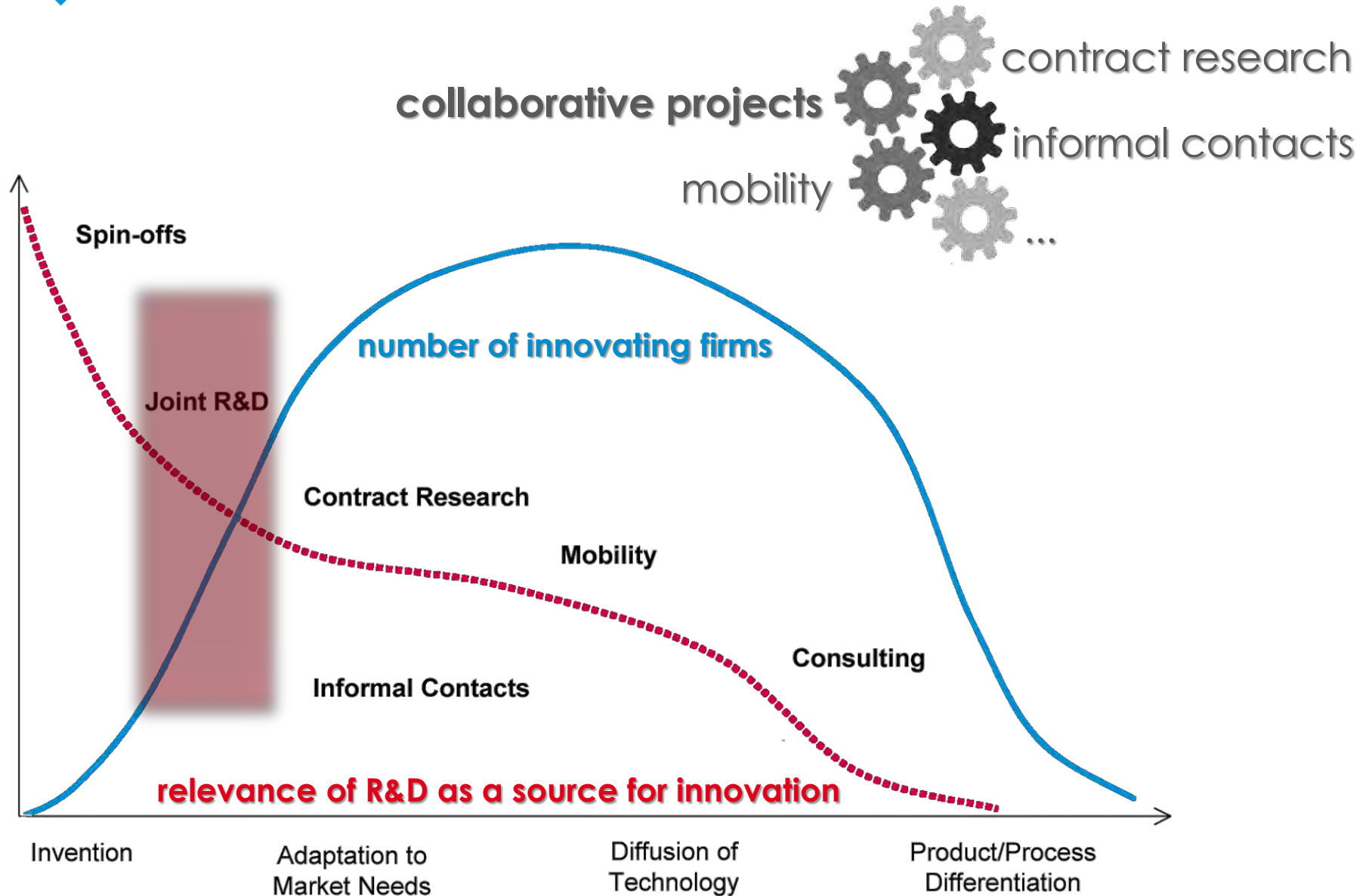
- ⚙ theoretical and methodological background ← 2012
- ⚙ analyses of innovation system ← 2013
 - 💡 regional knowledge bases and innovation potential
 - 💡 collaboration culture
 - 💡 identification of actors from business and academia – quantitative
 - ↓
 - 💡 **collaborative projects**
- ⚙ collaborating firms – their position in GPN ← 2014
 - 💡 qualitative assessment – websites, product portfolio...
- ⚙ interviews, case studies ← 2015
 - 💡 detail description of different ways of cooperation
 - 💡 intensity of ties, character of knowledge exchange
 - 💡 impacts on both sites



preliminary results – collaborative projects



forms of cooperation



projects of R&D&I (CEP) > 40k

organisations in R&D&I > 5,400

results of R&D&I (RIV) > 750k

activities...



collaborative projects in R&D&I

- ✿ projects in R&D&I information system (3/2014) # 40k

- ✿ projects with more participants # 9,845

 - 💡 level of entities with registration no. (IS distinguish units)

- ✿ **collaborative projects # 3,846**

 - 💡 companies + knowledge institutions (research organisations / universities)

 - 💡 other legal forms filtered out







- ✿ **initial population**

 - 💡 rising number and costs (since 1993)

 - 💡 extremely diverse in nature and budget (EUR 1K-25M)




participants in collaborative projects

beneficiary + other participants

-  level of entities with registration no. (IS distinguish units)
-  companies + knowledge institutions (research organisations / universities)
-  other legal forms filtered out (#38)
-  individual data, names



initial population #1,932 participants

-  additional characteristics – i.a. geoinformation, logistic regression
-  potential vs. anonymisation of individual data by CZSO (surveys)
-  structure of project consortia

#1932



networks of cooperating entities

❖ nodes (entities) + edges (linkages)

- 💡 above mentioned 1,932 participants in 3,846 projects
- 💡 connections partner – partner (all relevant combinations in a project)



❖ initial population #3,980 edges

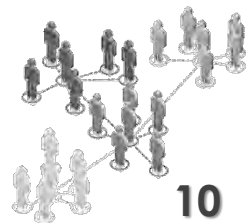
- 💡 weights + additional attributes



❖ social network analysis (SNA)

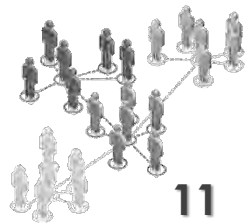
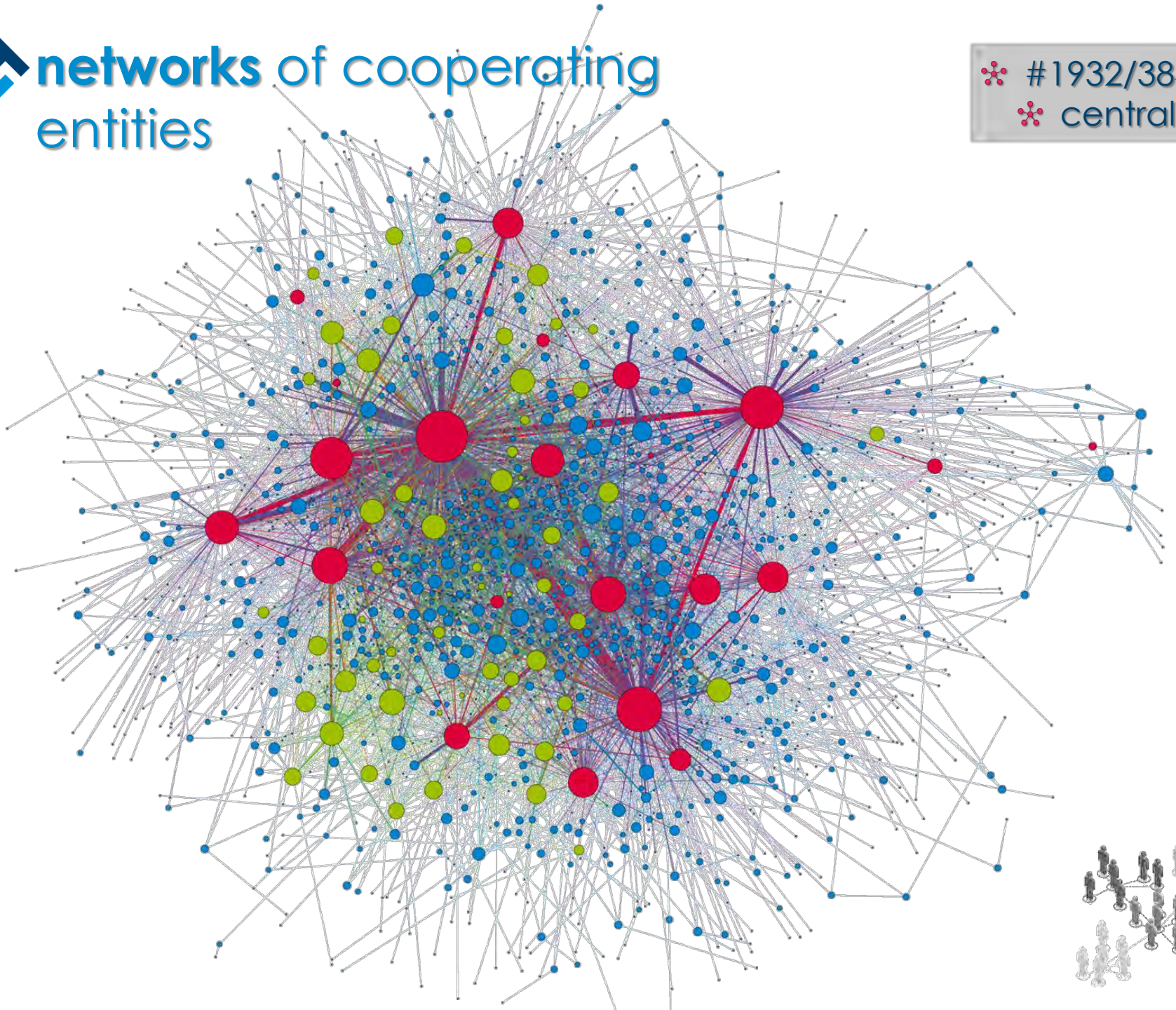
- 💡 visual + analytical tool
- 💡 software (e.g. GEPHI) adds attributes of a network (centrality, modularity...)
based on attractive and repulsive forces among nodes
- 💡 company ● research organisation ● university ●

#3980



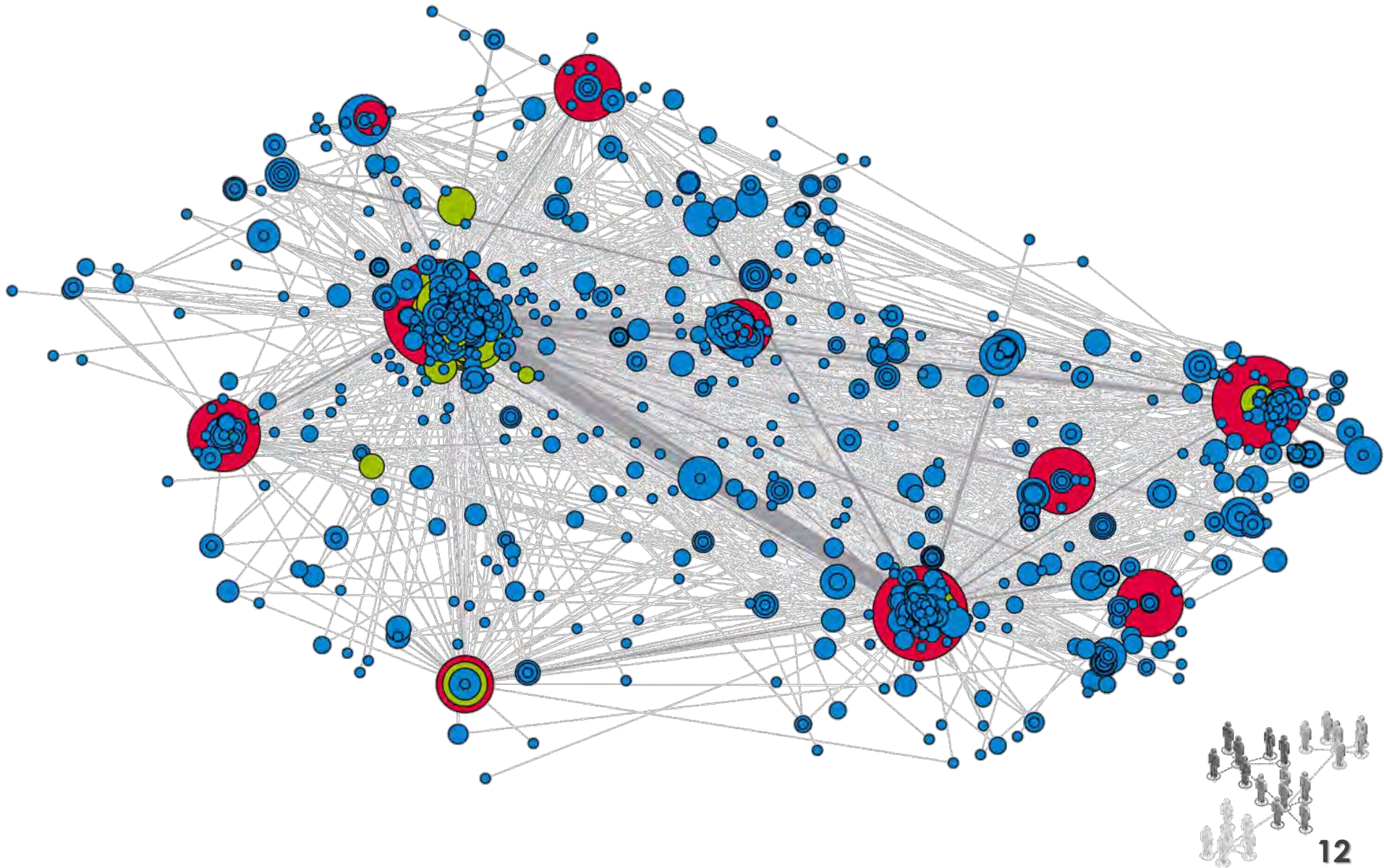
networks of cooperating entities

 #1932/3846
 centrality

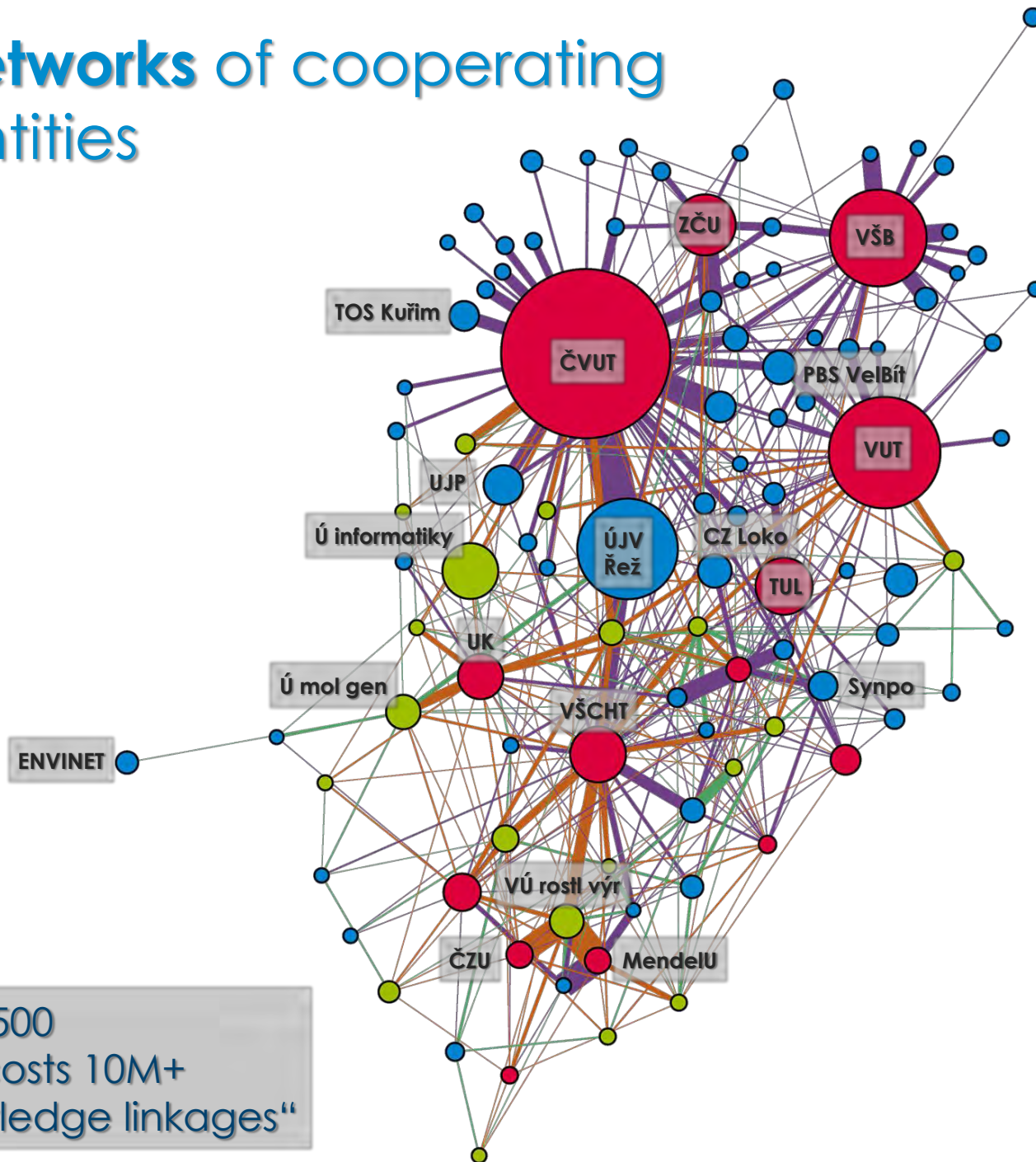


networks of cooperating entities

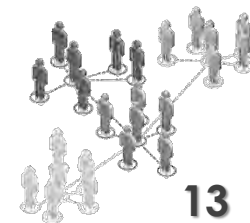
 #1932/3846
 geography



networks of cooperating entities



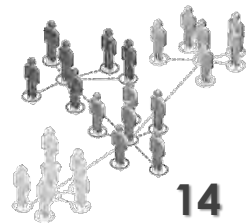
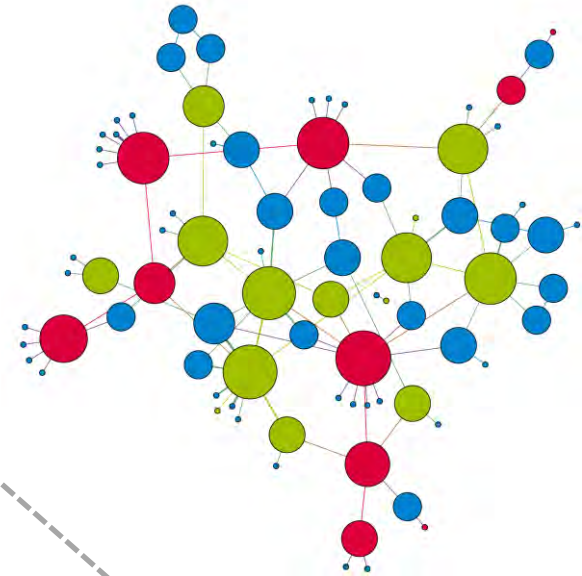
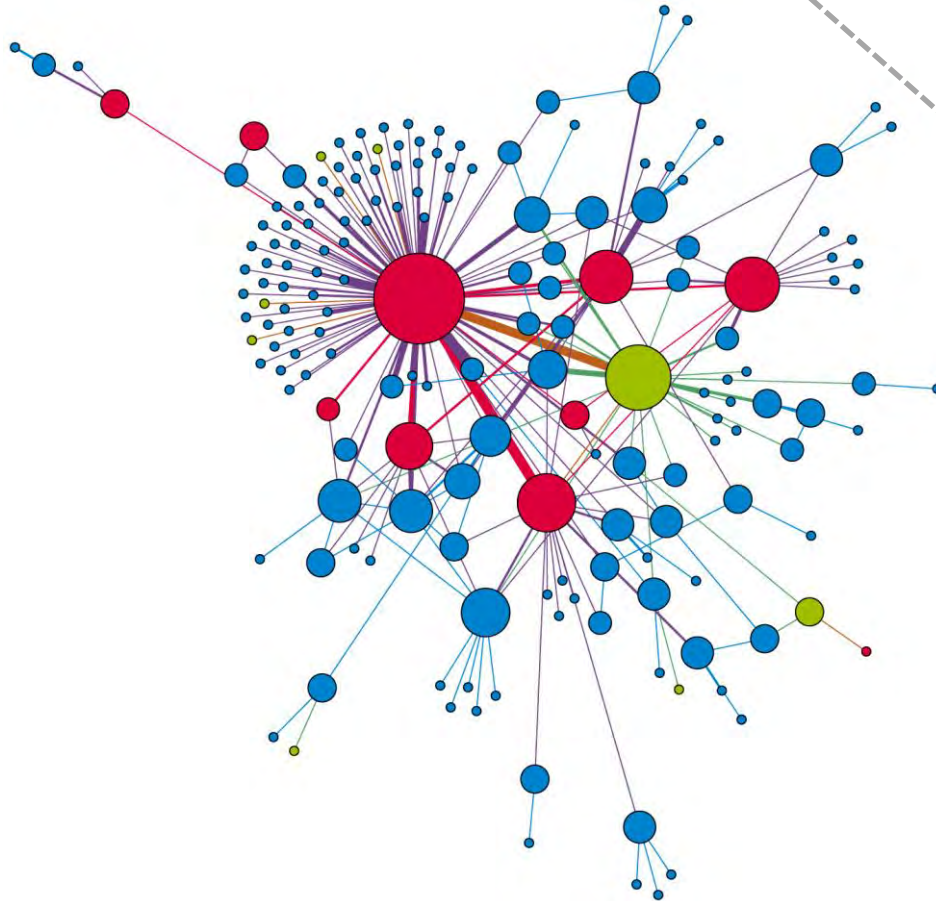
- * #101/500
- * total costs 10M+
- * „knowledge linkages“



networks of cooperating entities

transport engineering

biotechnology, bionics





Thank you!

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