How advanced bibliometrics can support science policy analysis (discussant)

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Advanced bibliometrics and mission orientation

| Context | Mission area | • Scientific research can contribute to achieve mission
• Policy intervention needed to achieve mission-orientation |

Scope — Identification of research portfolio that can support mission

Analysis — Characterization of research portfolio:
 - combining bibliometric and non-bibliometric datasets
 - characterizing structure, dynamics and societal connections

Utilization — Utilization of information as knowledge resource in the policy cycle

Co-creative process

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Utilization in the policy cycle

🟨 **Agenda setting**
Provide comparative insights into research portfolio characteristics

🟦 **Evaluation**
Provide insights into how research portfolio characteristics have changed following intervention

Application area
Funding programs and research policies that aim to connect science and society

http://www.cs.unc.edu/~jbs/talks/pasa2009/policy-cycle.html
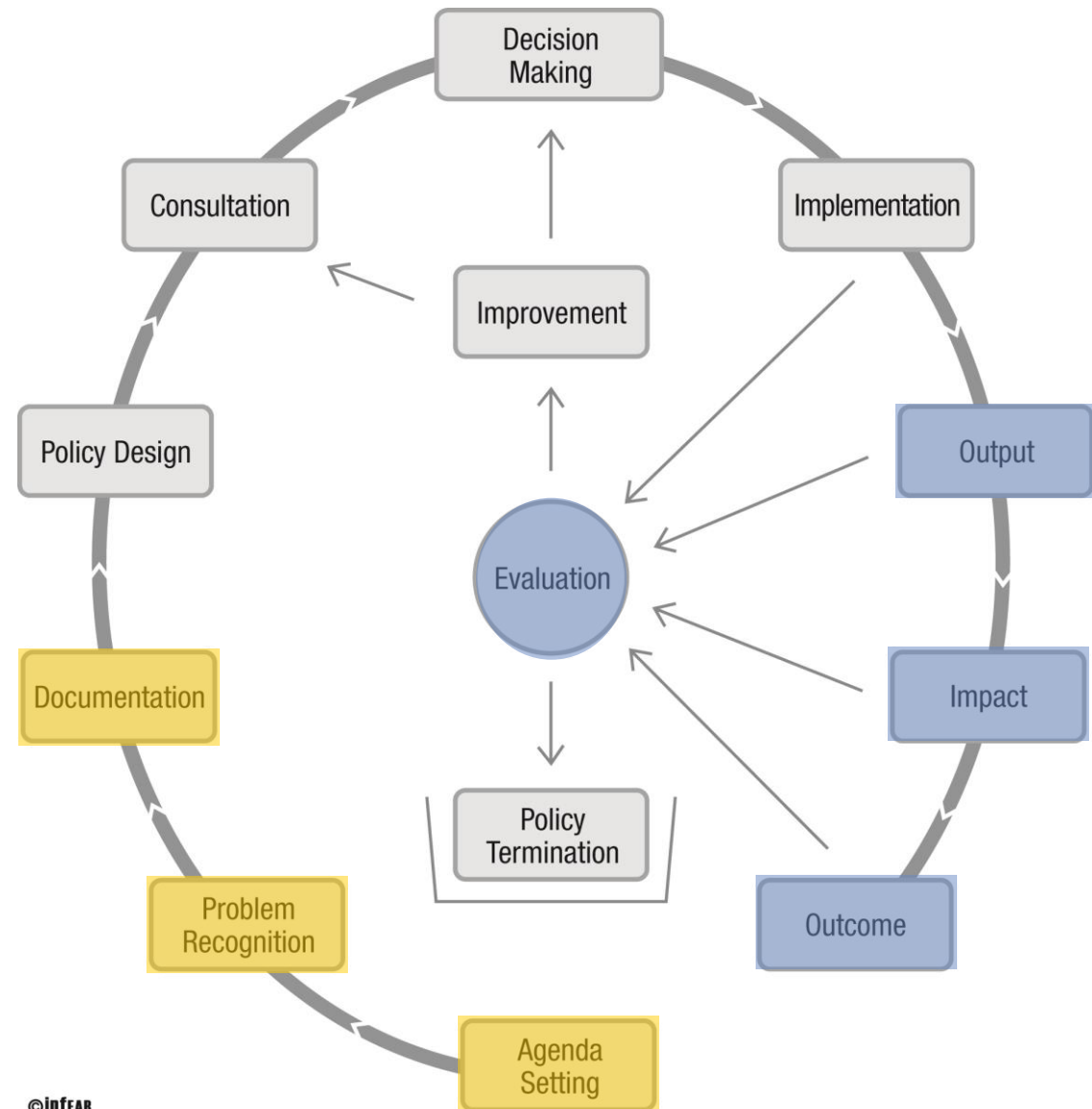
Contributions

- Use of diverse set of bibliometric and non-bibliometric data to characterize research portfolios

- Combining different quantitative and qualitative methods

- Development and interpretation in collaboration with stakeholders (co-creation)

- Modest approach with regard to claims-making (contextualisation)

Challenges

- Role of scientific research in mission-oriented policy depends on nature of problem

- Demarcation of research areas that can support missions

- Understanding research in terms of problem-solving activities

- Relevant 'demand' benchmarks to assess which structures, dynamics and societal connections indicate and/or contribute to mission-orientation

Challenges in cancer research mission

- Cancer types might differ in research-intensity of solutions needed

- Solutions needed for same cancer type might differ per country

- Research might not be oriented to single cancer types

- Valuable research might contribute to solutions with low burden of disease (e.g. orphan diseases)

Analysis of structure, dynamics and connections using RISIS dataset some ideas

Collaboration and proximity

- Addressing complex societal problems through collaborative and distributed modes of knowledge production (Gibbons et al. 1994)

  - Bridging cognitive, institutional, geographical, social and organisational proximity

- Use of proximity framework (Boschma 2005; Frenken et al. 2009) to understand structure and dynamics of research portfolios

Examples

- Changing importance of geographical proximity in EU collaborative research (Hoekman et al. 2010)

- Importance of proximities in collaborative research on obesity in EU and US (Hardeman et al. 2014)
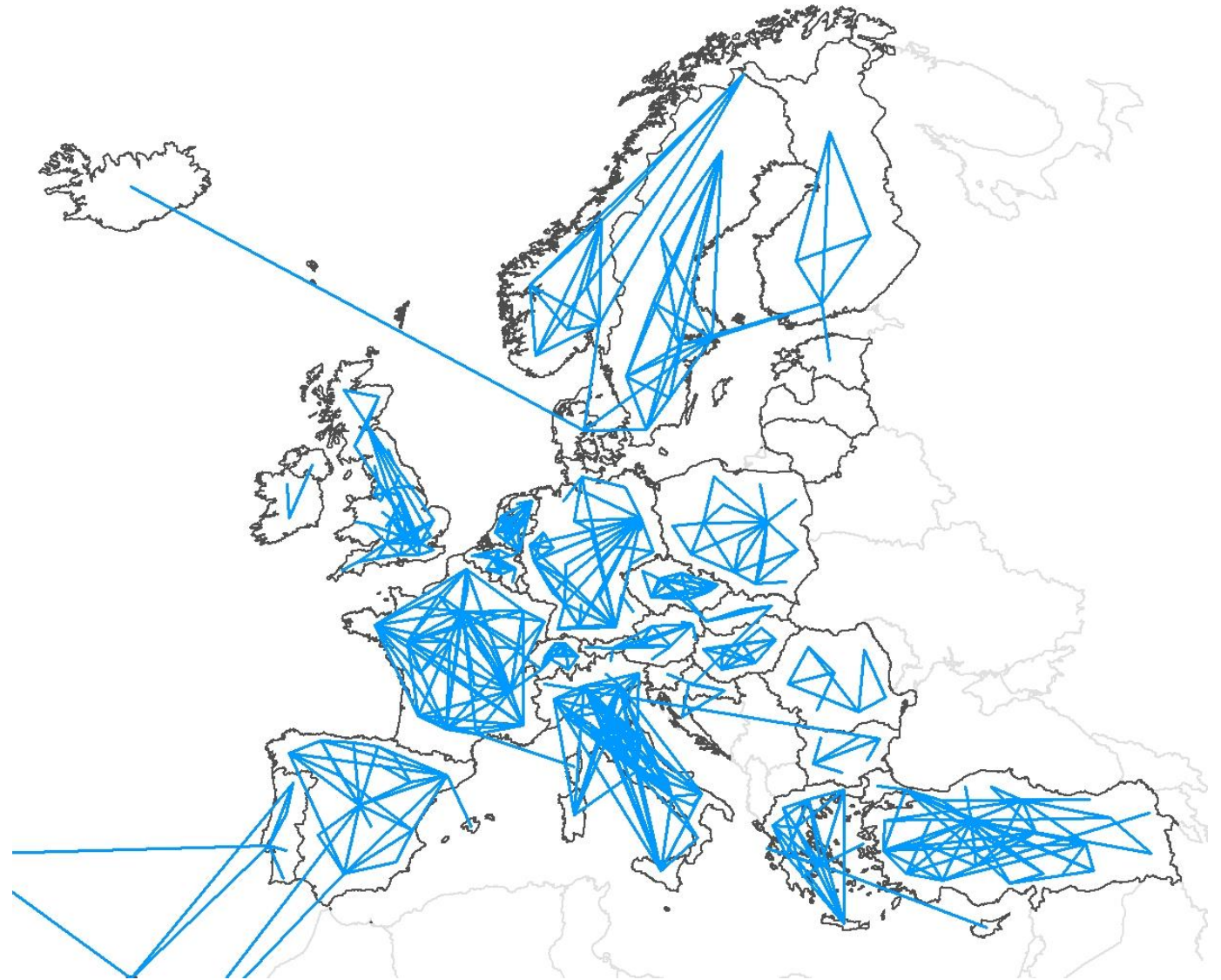
Hoekman et al. 2010

Questions for advanced bibliometrics and mission-orientation

- Characterization of missions according to (changing) importance of proximity dimensions

- Proximity needs of different research approaches and solutions

- Role of funders in (changing) the importance of proximity dimensions in mission-oriented research

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Characterizing solutions in medical research

- Dominance of pharmacological interventions

- Upstream, midstream and downstream interventions

- Socio-material configurations of complex interventions (e.g. gene- and cell-based therapies, community health programmes)

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Thanks for the attention

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