

# RIHR/TIP Report on Impact Assessment

*Some observations based on current RIHR/TIP work*

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## Nature and purpose of Impact Assessment (IA)

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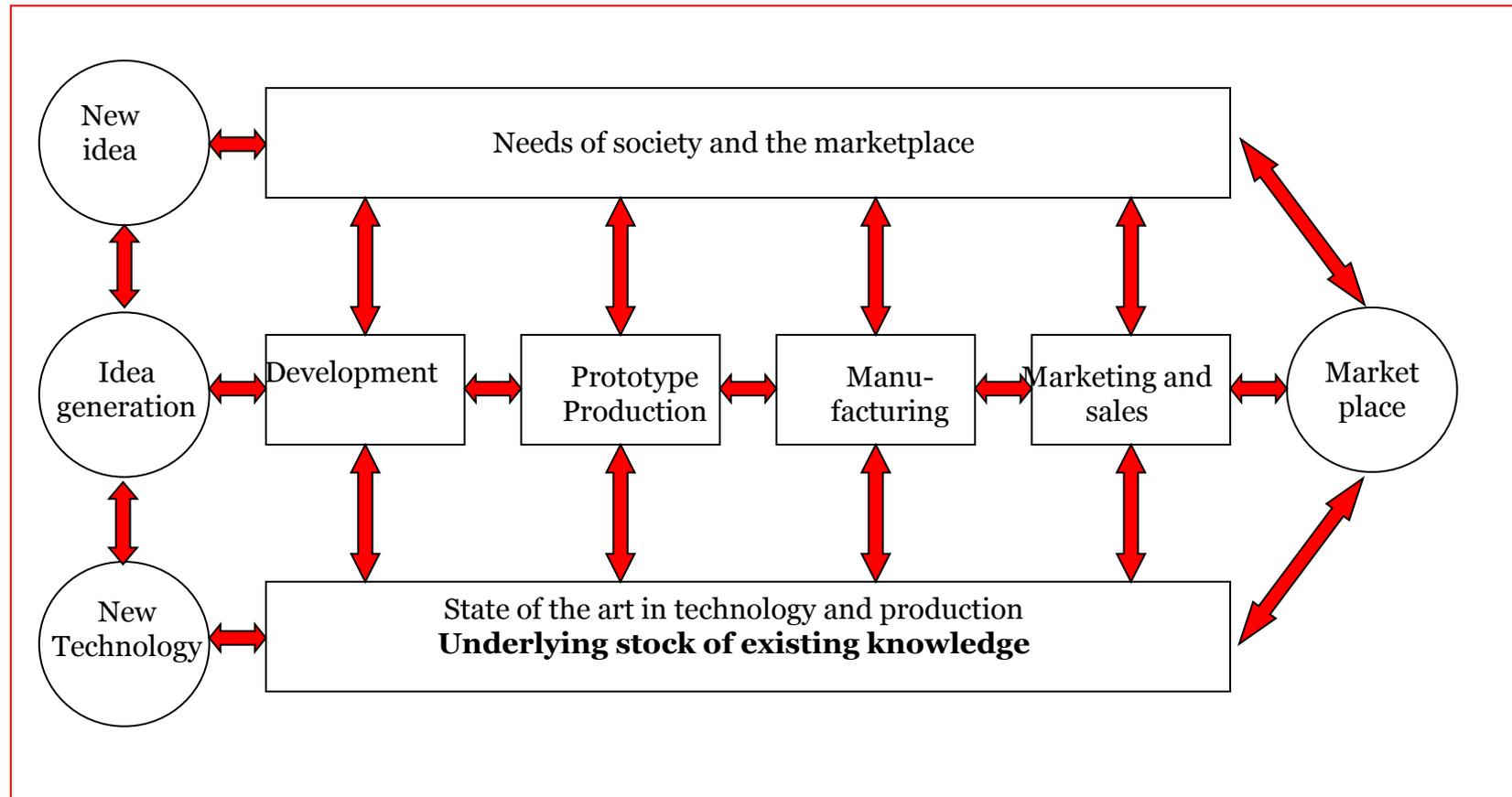
- For the purpose of this discussion, it is *ex post*
  - It's part of the evaluation and management activity of the policy cycle – so it's a managerial tool not something done for its own sake
  - Since it explores the effectiveness of intervention design, it needs to consider the *theory of change* behind the policy or programme
  - IA is a theory-based activity
    - *Not only in the sense of being based on a theory of change*
    - *But also in the sense that 'theories of change' depend upon beliefs and theories about how impacts come about*
  - Since the context affects the way interventions operate, IA needs to consider context and not only the intervention
  - IA is not neutral either in the sense that it can cause *observer effects*, affecting the events it is trying to measure
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## The idea of 'impact assessment' is itself problematic

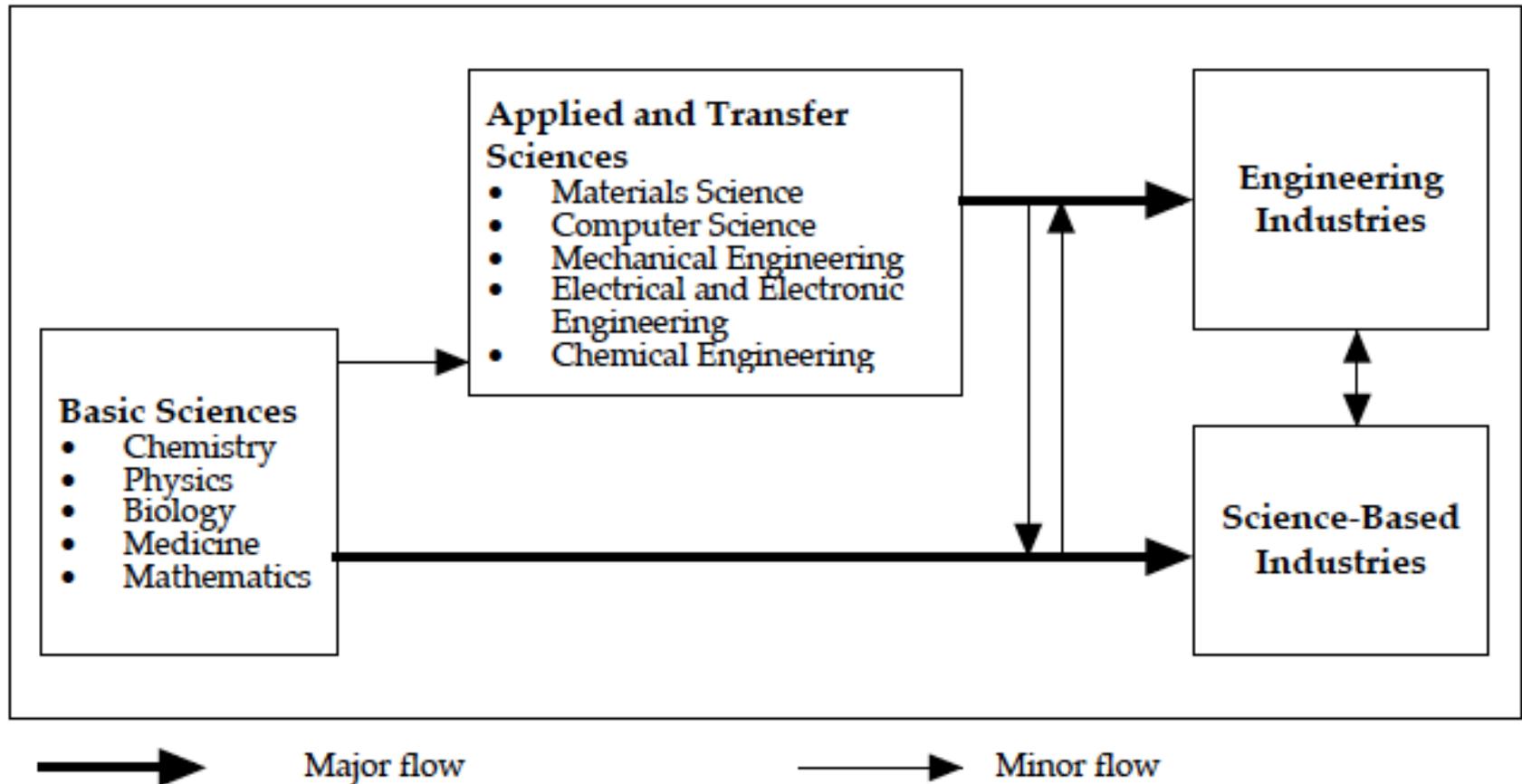
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- While it seems to make sense under a 'linear model' of the link between research and innovation ...
- For most of history, the 'social contract' between research and society has aimed to have society in the driving seat ... so we can as easily talk about the impact of society on research as vice versa
- The linear model isn't often a good representation – real-life research-innovation interaction is complex and non-linear ... so what impacts what?
- Most state research funding systems mix researcher- and socially-initiated research funding via research councils and innovation/mission agencies, in response to this non-linearity

## Typical 'complex' model of research-innovation interaction



## Different fields can have different paths to impact



## But if we stick with the idea of ‘impact assessment’, there are perhaps six kinds of mechanisms to consider

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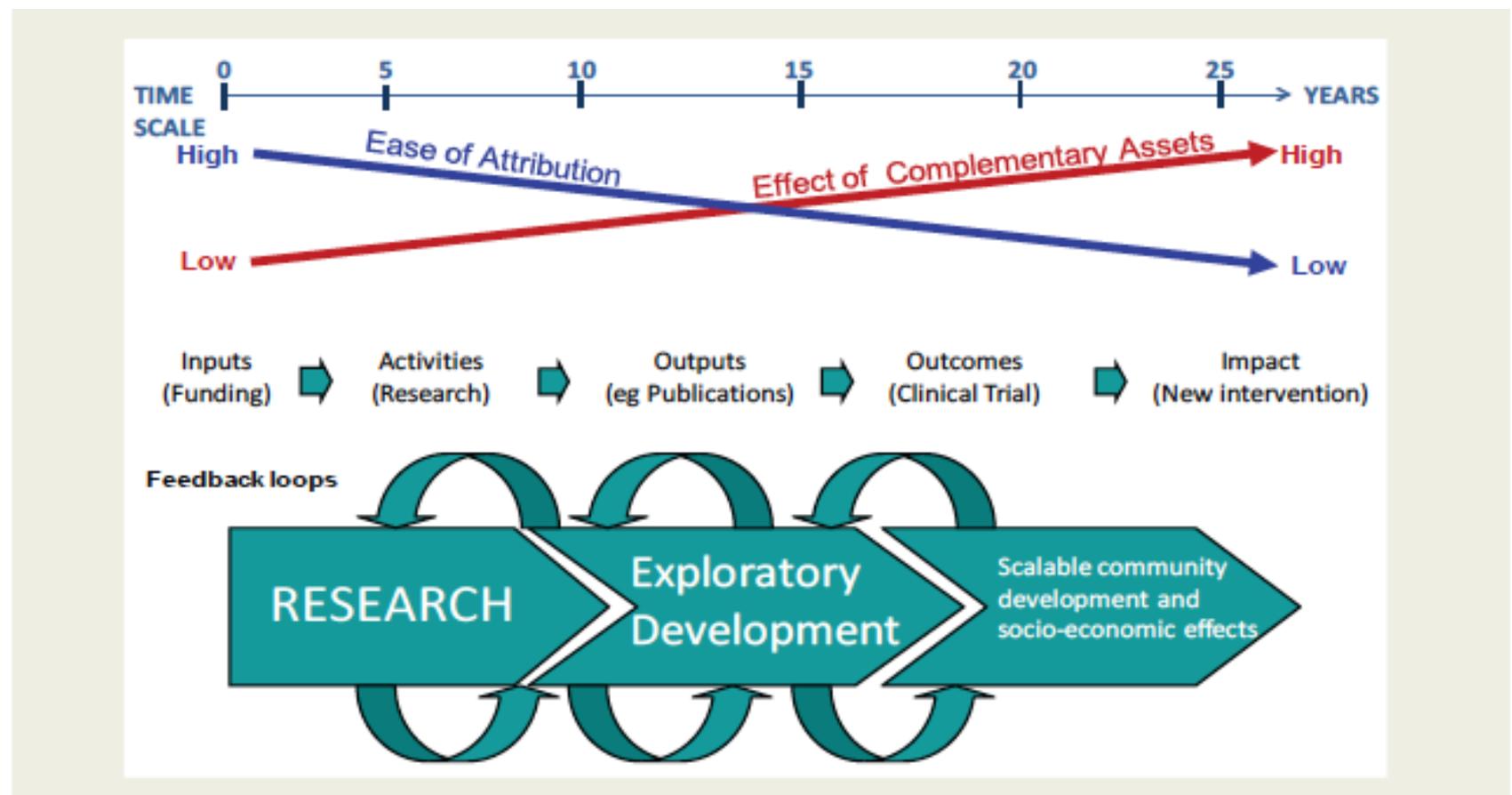
- Industrial innovation (including innovation in services as well as products and processes)
- Research-influenced changes in policy, agenda-setting
- Tackling ‘grand’ or societal challenges, that impede social and economic development or provide existential threats (e.g. climate change)
- The provision of improved public goods (and potentially the provision of associated state services)
- The improved exercise of professional skill, for example in research-based improvements in medical practice
- Human capital development – which is not orthogonal to the other categories but tends to feed into them

## Issues in IA

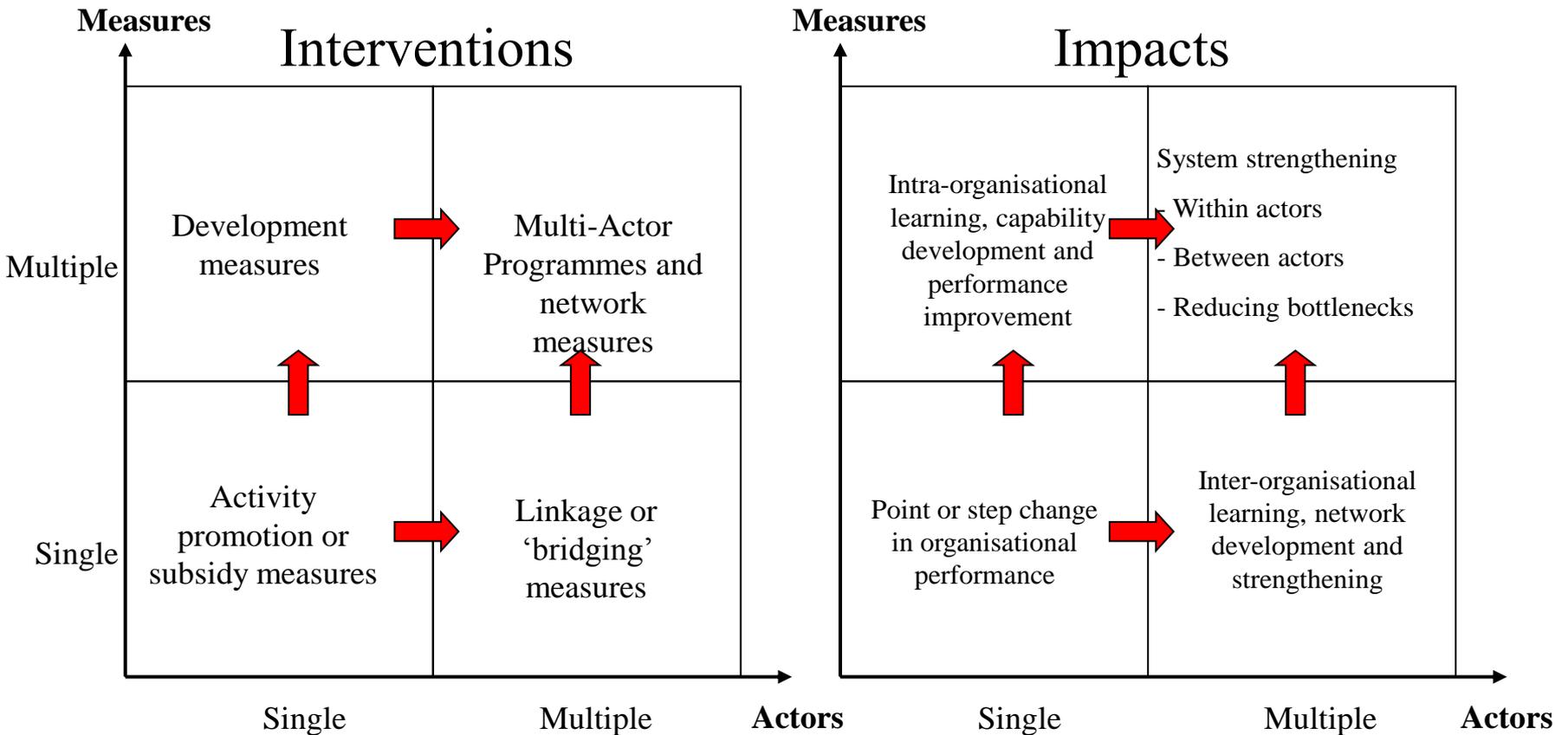
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- Causality
  - *Dead weight, net effects and the counter-factual*
- Attribution and multiple causality
- Circular causality
  - *Including 'endogeneity' in econometric analysis*
- Difficulty and hence unreliability of making valid effectiveness comparisons
- Non-substitutability of interventions, so searching for the one with the biggest RoI rarely helps determine policy
- Timing of impacts

## The joy of attribution ...



## Research and innovation policies are starting to overlap and to become more systemic – complicating IA



And it becomes even more complicated when we try to do impact analysis on the grand, societal challenges, cf H2020

## Issues for multiple impact assessments

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- Identifying and testing overlaps in intervention logics
- Multiple causality
  - *More than one intervention may have impact*
  - *How to combine or attribute responsibility when steps in the logic are 'necessary but not sufficient'?*
- Difficulties in finding 'clean' control groups in developed countries
- Avoiding multiple counting – otherwise you get the paradox that the more impact analyses you do, the bigger the total impacts

## Approaches

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- Following the money
  - *Computable general equilibrium (CGE)*
  - *Production functions*
  - *(Micro)econometrics*
  - *Cost-benefit analysis*
- Understanding impacts
  - *Tracing*
  - *Surveys, interviews*
  - *Case studies*
- Focusing on particular outcomes
  - *Human capital*
  - *Scientometrics*
  - *Altmetrics and Webometrics*
  - *Social Network Analysis*
- Impact assessment for performance measurement
  - *E.g. university performance-based research funding systems*

## What next?

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- Better non-linear intervention logics and impact models
- Figure out to how to analyse the grand challenges
- Tackle the neglected areas: public goods; professions, skills and public services; human capital
- Increase the ability of economic approaches to explain causality / intervention logic
- Find ways to integrate macro and micro approaches to impact analysis, aiming better to explain and quantify at the same time

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Thank you

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