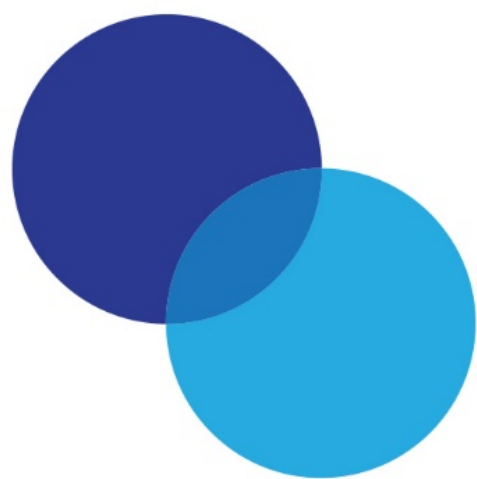


Measuring impact: motives, challenges and interpretations

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OSIRIS

OSLO INSTITUTE FOR RESEARCH
ON THE IMPACT OF SCIENCE

Aims of my presentation:

- Present some general points about why we measure societal impact of research and the problems with doing so
- Add some reflections about how such measurements can be interpreted, framed and used

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OSIRIS is an 8-year research centre:

- Focused on understanding impact processes primarily seen from the non-research side
- We have done case studies in industry, policymaking and hospitals, a large-scale survey among policymakers and more

Why do we measure impact?



Accountability, summative evaluation



Learning, formative evaluation, governance



Lobbying, securing support, leveraging resources



Insight, understanding impact with no immediate use

“I am strongly convinced that the core values of Horizon 2020 and its successor have to be **Excellence, Openness and Impact.** (...) We have an obligation and an incentive to be much better at understanding and communicating the impact of what we do. Not only to ministers of finance, but to the general public!”

*Carlos Moedas, European Commissioner for Research,
Science and Innovation, 2015*



Most impact assessments?



If this is a relevant depiction:

- The potential for learning in the research system and for policy development is not realised
- Impact assessment as a knowledge base for insight is fragmented and unsystematic
- Impact is politicised
- This is a pity, since impact measurement is very costly

ountability

obbying

Common impact assumptions...



The potential for societal impact from research is not fulfilled



Research needs to be steered more explicitly towards societal goals



Impact is there but it is invisible and needs to be shown



There are disconnects or mismatches between research and society

... tied to fundamental perspectives

Research → Society

- Research *can* be relevant
- Better communication
- 'Enlightenment' versus transfer of ideas

Society → Research

- User needs shape knowledge
- Organisational structure of knowledge shapes policy
- Capacity of the demand/user side

Research | (parts of) Society

- Distinct spheres and logics
- Meetings are often accidental
- Need to construct boundary meeting places

Many research (including impact) evaluation systems make *implicit* descriptive and normative assumptions like this

Should they be made more explicit to facilitate more efficient systems?

Measuring impact is difficult

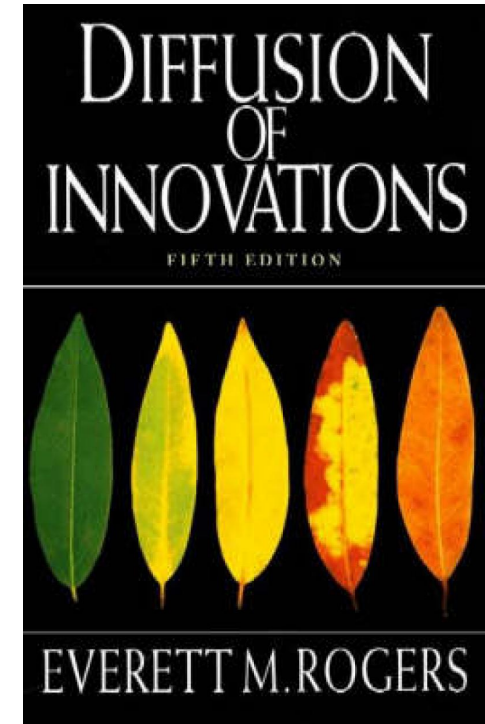
- **Attribution/contribution:** how much of a specific outcome or impact can be attributed to the research versus other aspects?
- **Timelines/latency:** how can we measure impact when so many examples of it outline a process that can last for many years, if not decades?
- **Output indicators:** what if the main characteristics of impact are difficult to capture with traditional economic indicators or lack consistency over time or over types of effects?
- **Causality:** in many cases, the main drivers of impact processes are not directly tied to the research

The **temporality** of impact:

Use and subsequent impact tied to windows of opportunity, sense of urgency, confluence, maturation

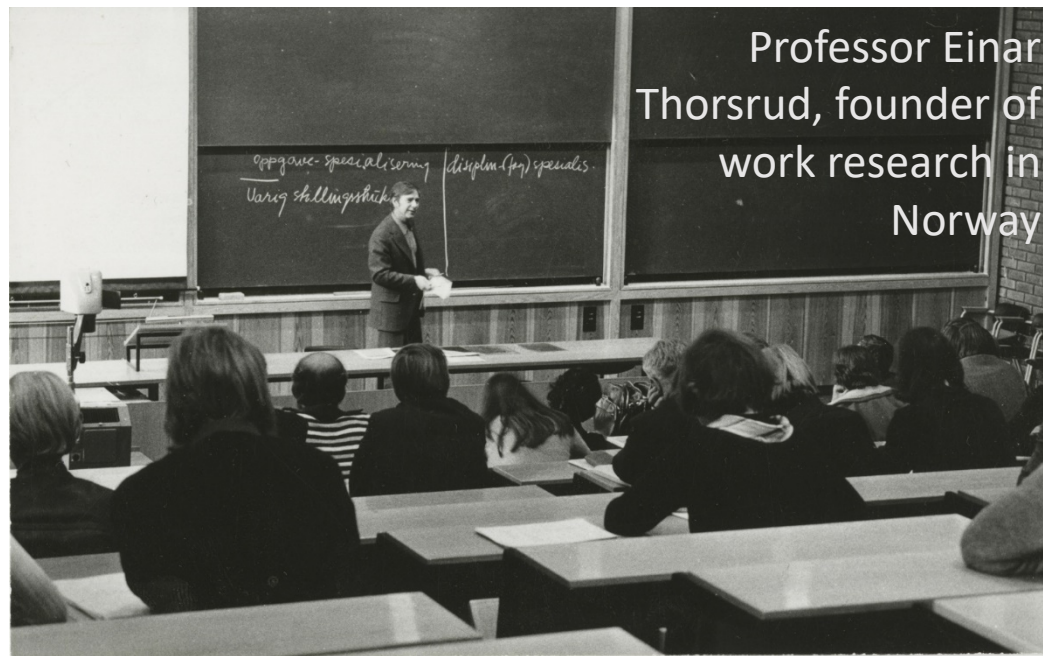
The value associated with impact may not always be stable over time

...personally interviewed for my PhD dissertation research rejected all of the chemical innovations that I was then studying: weed sprays, cattle and hog feeds, chemical fertilisers, and a rodenticide. He insisted that his neighbours, who had adopted these chemicals, were killing their songbirds and the earthworms in the soil. I had selected the new farm ideas in my innovativeness scale on the advice of agricultural experts at Iowa State University; I was measuring the best recommended farming practice of that day. The organic farmer in my sample earned the lowest score on my innovativeness scale, and was categorized as a laggard.” (Rogers 1994:425, quoted in Greenhalgh et al. 2007, p. 53).





Workers' cafeteria,
Freia chocolate
factory in Oslo, 1934



Professor Einar
Thorsrud, founder of
work research in
Norway

Large-scale
experiments in
new forms of
organisation
involving research
organisations,
unions, employer
organisations and
many firms from
the 1960s until
early 2000s

- Industrial and economic impacts: new work organisations in many Norwegian firms with large productivity increases (and abroad!)
- Policy impacts: the Working Environment Act (1977) and other central legislations and regulations
- Cultural/societal impacts: the Norwegian HR profession used research results as its «stone tablets», the “Norwegian model” of variation, learning, influence, recognition, connectivity and future orientation in all jobs

- **Multiple types and pathways** of impact
- **Several research organisations** (most of them applied) were involved and through repeated and accumulated projects
- Favourable **institutional preconditions** such as political values and training systems conducive to radical forms of industrial organisation
- Initiatives came from **users** rather than science
- Impact **measurement challenges**: unit of analysis/input, attribution, time scale, output indicators, driving forces

It may be claimed that major impacts from Norwegian research have followed similar patterns (e.g. fish farming, GSM, object-oriented programming, various energy technologies)

Interpreting impact measurements

- What do the numbers mean?
 - “1 Euro invested in research X gives us 5 Euro back”
 - “The annual social rate of return on investment in research Y is $>50\%$ ”
 - “Research Z generates 1000 new jobs every year”
- What do the impact cases tell us?
 - Research X happened and can be tied to impact Y
 - Impact Y happened and research X contributed to it
 - Research X and impact Y are related because Z happened
- How can these numbers and narratives be used in science policy?



1 krone til petroleumsforskning gir 30 kroner tilbake til staten

Forskningsrådets petroleumsforskning samfunn, og den fremtidige avkastning miljøgevinster.

Av Vivill Vinsrygg | Publisert 03.02.2020

En ny rapport skisserer potensielle og realiserbare på om lag 4,8 milliarder kroner rettet mot petroleum. As har skrevet rapporten på oppdrag for Forskningsrådet.



ALL RETURNS: HYBRID INNOVATIONS¹

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“No matter how we calculate them, there is little doubt that the over-all social returns on publicly supported technological research have been very high. It is not clear, however, whether or not this fact has any normative implications. I am afraid it has very few.”
(Griliches 1958 p. 430)

My point: numbers and narratives often have no anchor or reference and are very difficult to use beyond saying giving ex post credit or ex ante justifications

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elig verdiskaping. Dette er
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er av energiforskning, tar for seg
Mens det så langt er skapt verdier for
om inngår i studien, er det fremtidige
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Some reflections

- Can we make goals and assumptions of impact measurement more explicit and – when possible – beyond justifying past or future R&D expenditures?
- Can we challenge research organisations to make meaningful articulations of their own purpose (to form the basis for measurements) more than fancy statements about their impact?
- Can numbers and narratives to include the **how** in clear ways?
- Can measurements include aspects outside of research and not frame society as a passive recipient of research results but as an active participant in producing impact? And include industrial R&D?
- Can impact measurements be tied more closely to science policy processes (priority-setting in particular, perhaps)?
- Does impact have to be framed as something national?

Thank you for your attention

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Web page: <http://www.sv.uio.no/tik/english/research/projects/osiris/>

Here you can find a report on our policymaker survey, a blog, lists of publications and more