

# FROM TRIPLE HELIX TO QUADRUPLE HELIX

The first step to a general scheme  
for analyses

Harm Hofman  
Duurzaam Heiloo

Qualitative and Quantitative Analysis of Scientific and  
Scholarly Communication

Loet Leydesdorff

## The Evolutionary Dynamics of Discursive Knowledge

Communication-Theoretical Perspectives  
on an Empirical Philosophy of Science

OPEN ACCESS

 Springer

# Core difference between Leydesdorff with Luhmann and sociological AGIL scheme of Parsons with Habermas

Core Concept	Loet Leydesdorff	Niklas Luhmann	Jürgen Habermas
Communication	Measuring knowledge flows	Autopoietic systems	Communicative rationality
Rationality	—	—	Communicative rationality
Self-organization	Patterns in citations, publications, patents	Autopoietic systems	—



## Triple Helix:

Collaboration between government, industry, and universities.

## Goal:

Drive innovation and knowledge sharing

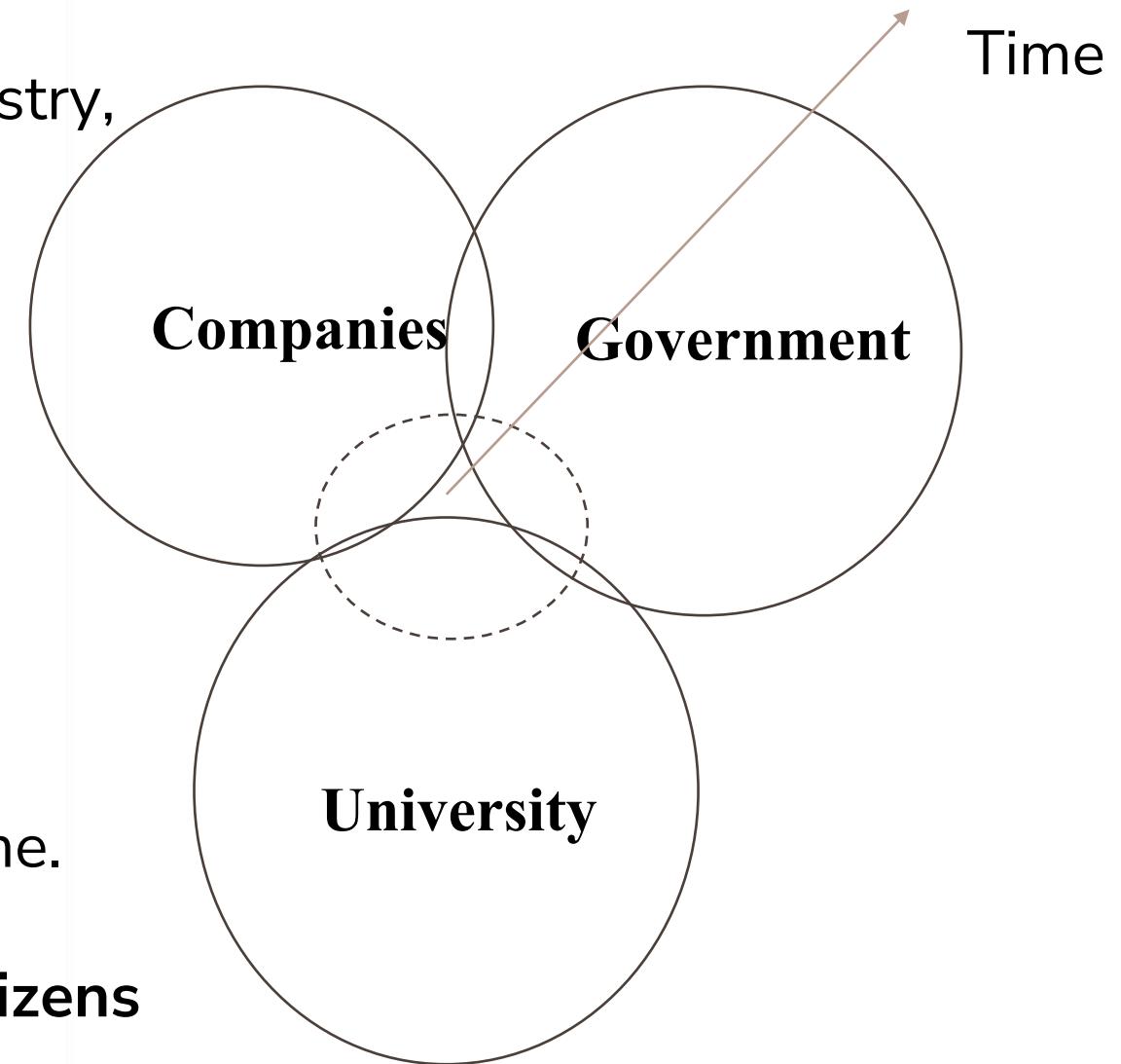
## Intersection:

Co-creation and joint projects.

## Time:

Relationships evolve and deepen over time.

## Foundation for Quadruple Helix: adding citizens

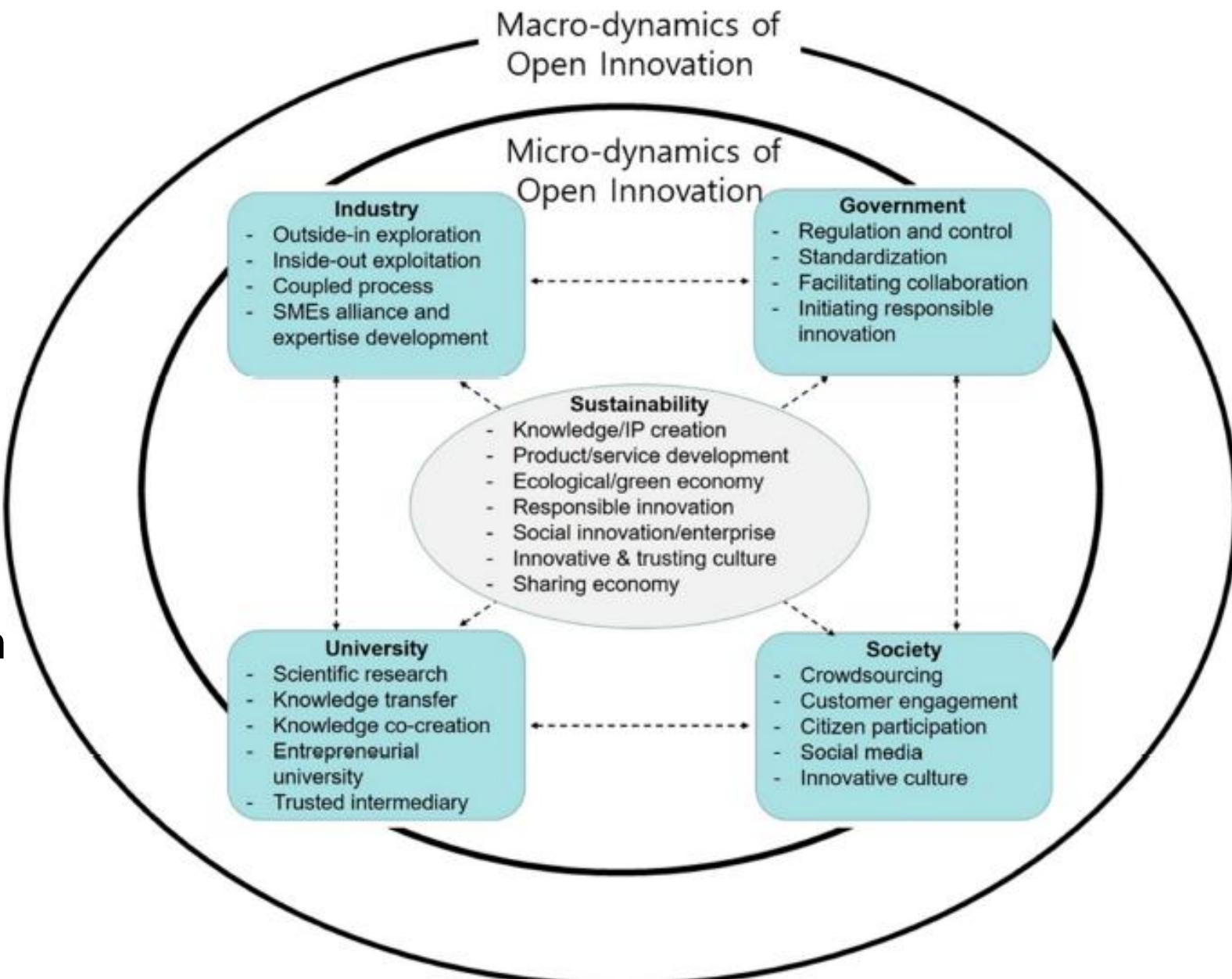


## Triple Helix (Leydesdorff

# Micro- and Macro-Dynamics of Open Innovation with a Quadruple-Helix Model

JinHyo Joseph Yun  
and Zheng Liu

- SME Aliances in industry
- University
- Knowledge
- Intellectual Property creation



## Smaller regions without university,

- less academic
- still requires knowledge
- adapted to the local situation

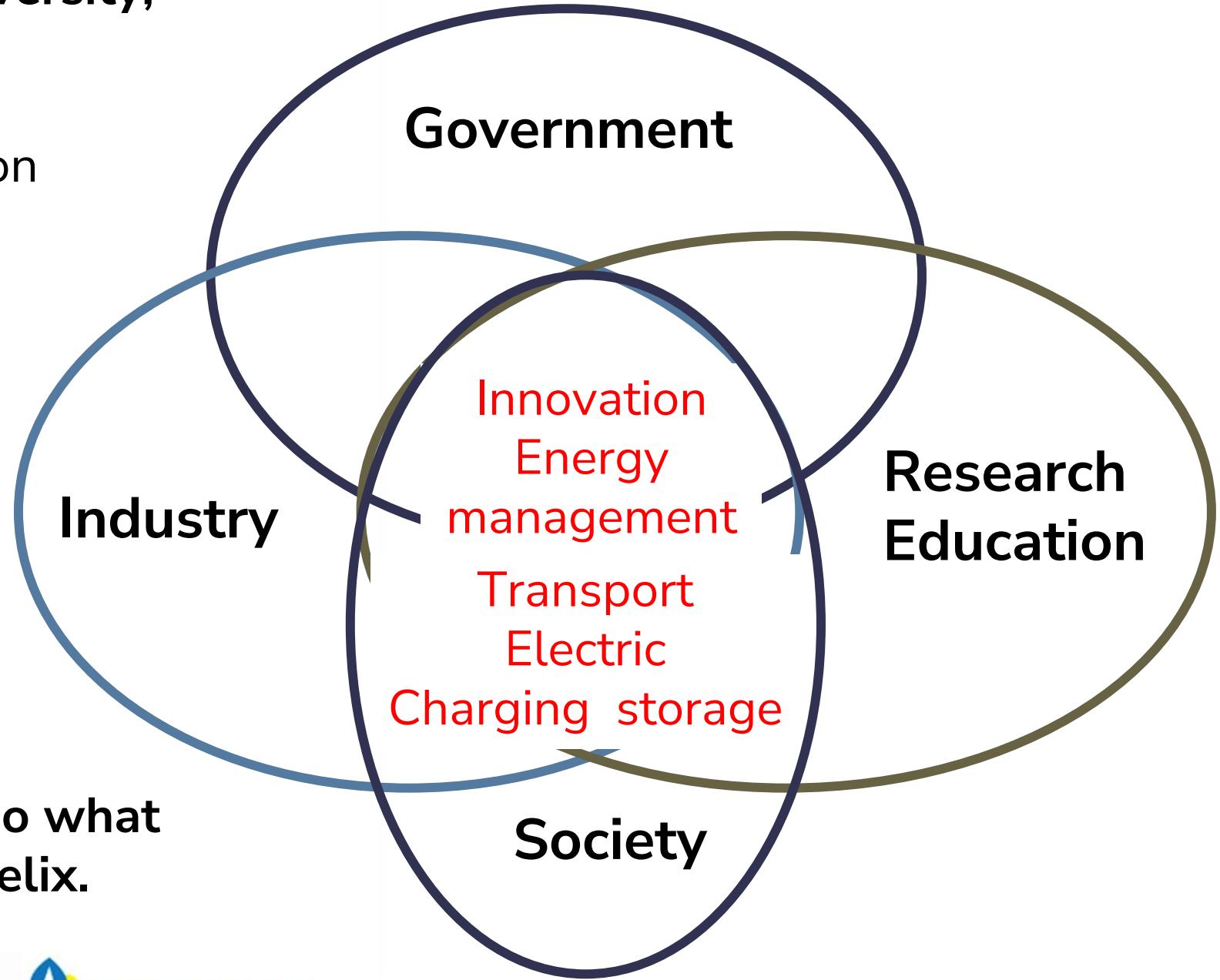
## Communication is less about

- publications and
- patents

## More about solutions

- for local communities
- with local problems
- local companies .

Important what region can do what fits in the middle of the helix.



# THIS WAS THE QUADRUPLE HELIX FROM TRIPLE HELIX BASED ON LUHMANN

Next step is to social  
systems of Habermas

Harm Hofman  
Duurzaam Heiloo

# Niklas Luhmann INTRODUCTION TO SYSTEMS THEORY

Translated by Peter Gilgen