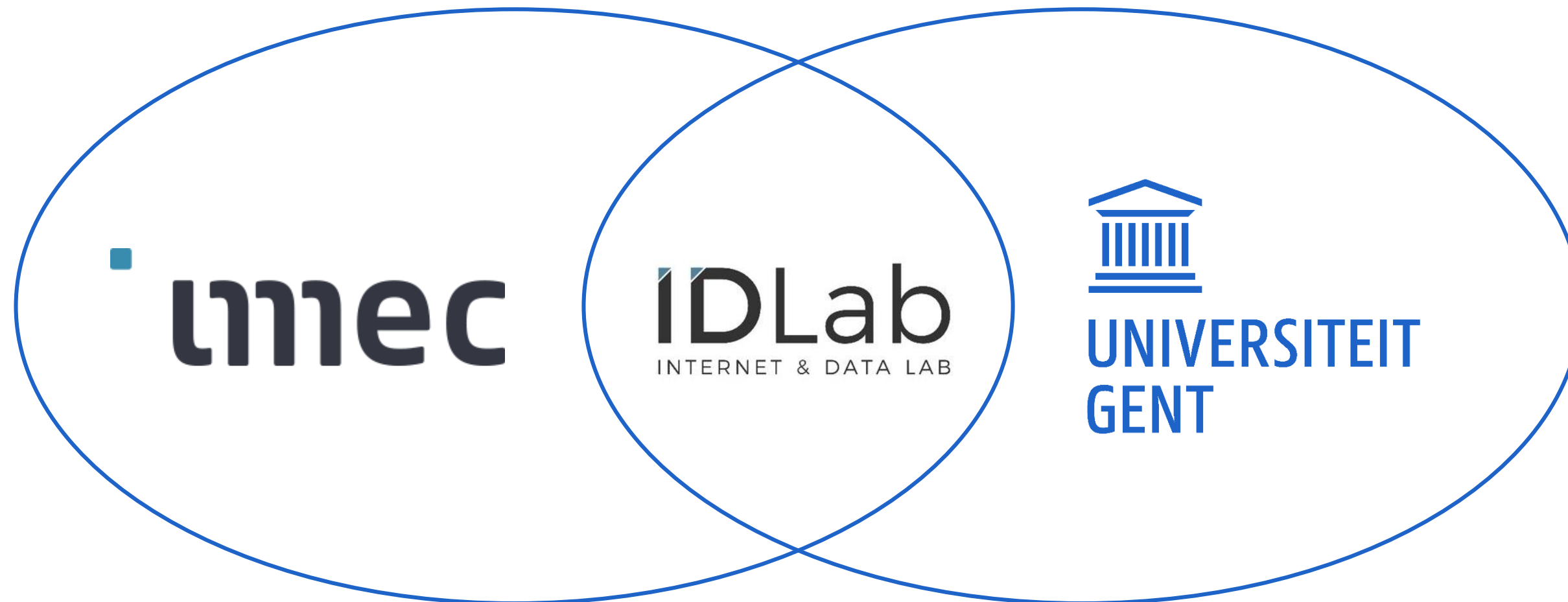




*"Supporting decision makers by translating technological innovation into business opportunities and challenges in different application domains"*

# TECHNO-ECONOMIC RESEARCH GROUP IS PART OF IDLAB



# ABOUT TECHNO-ECONOMICS



## **Multi-disciplinar research group**

The Techno-Economic research group consists of both engineers and economists

## **Our team**

Sofie, Marlies, Frederic, Jonathan, Thibault, Asma, Axl

# DIFFERENT TYPES OF TOPICS

## Techno-Economic Analysis



Business  
models and  
business cases

e.g. health care



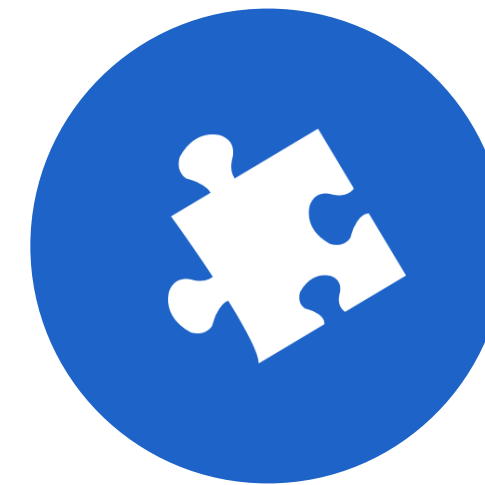
Techno-  
economic  
comparison

e.g. self-driving car



Conceptual  
work

e.g. use of game  
theory



Implementation  
focus

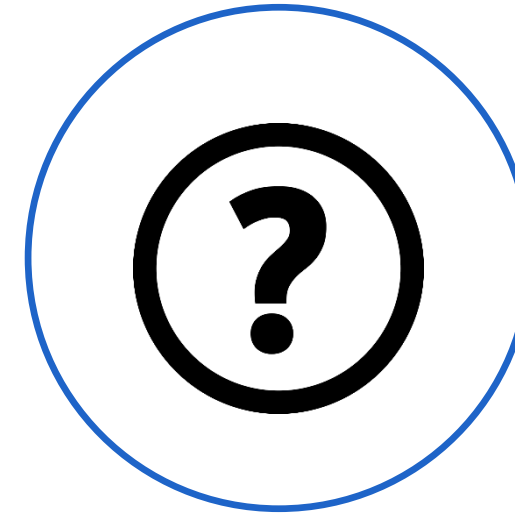
e.g. telecom network  
planning library

# TECHNO-ECONOMIC ANALYSIS

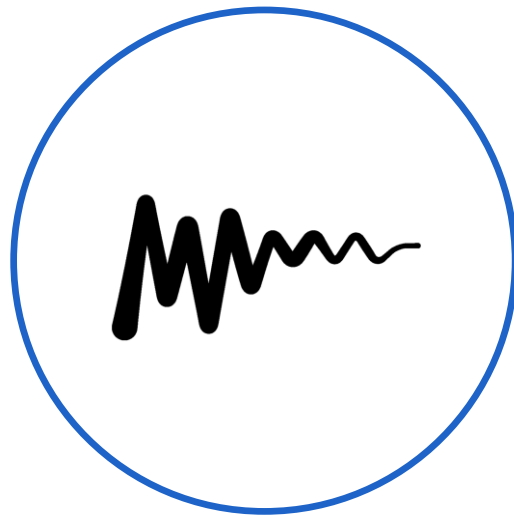
Much more than a straightforward calculation exercise



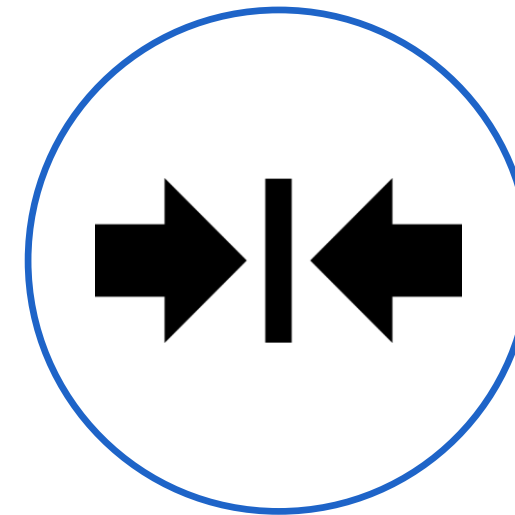
Multi-actor



Uncertainty



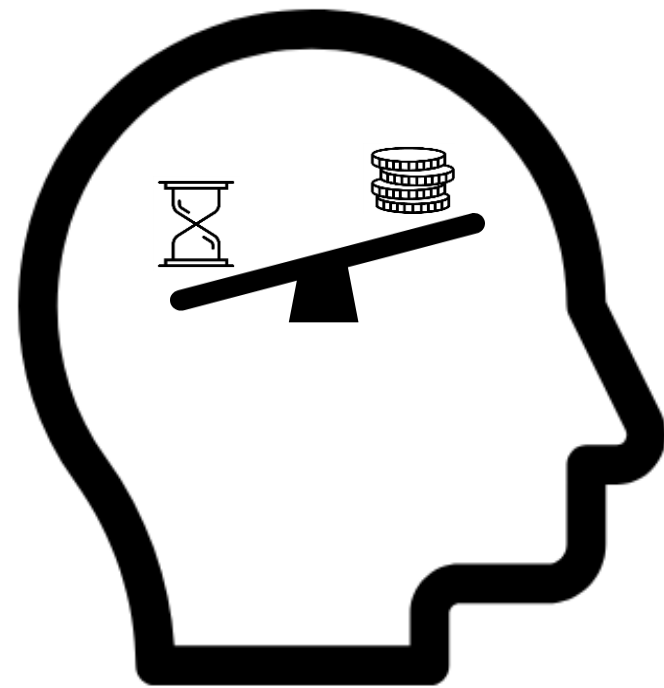
Dynamics



Case-specific  
constraints

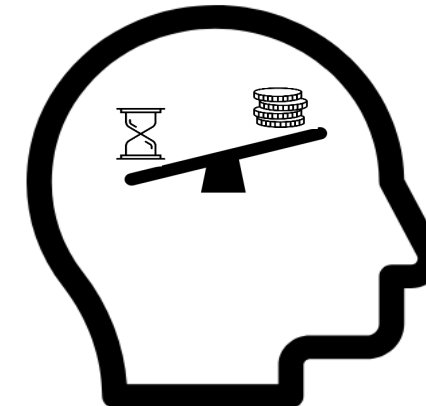
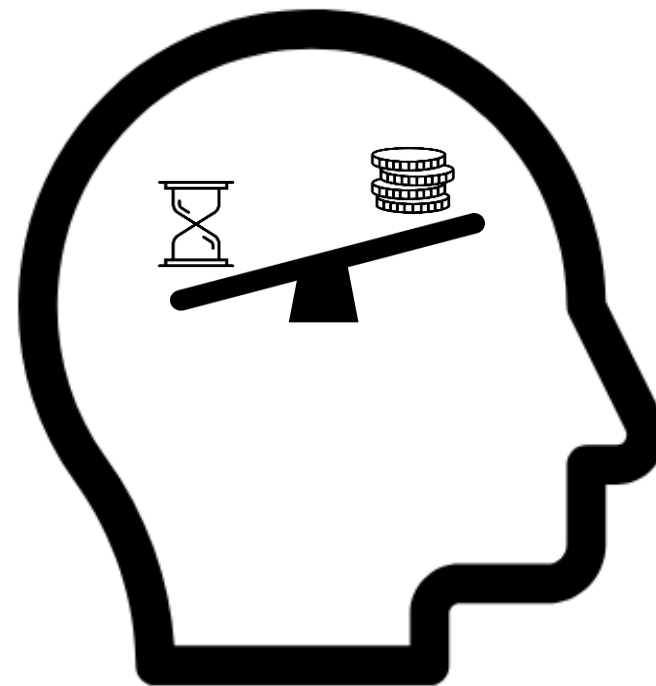
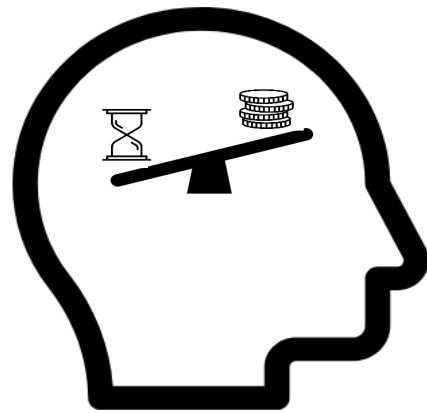
# TECHNO-ECONOMIC ANALYSIS

Insights in investment decisions



# TECHNO-ECONOMIC ANALYSIS

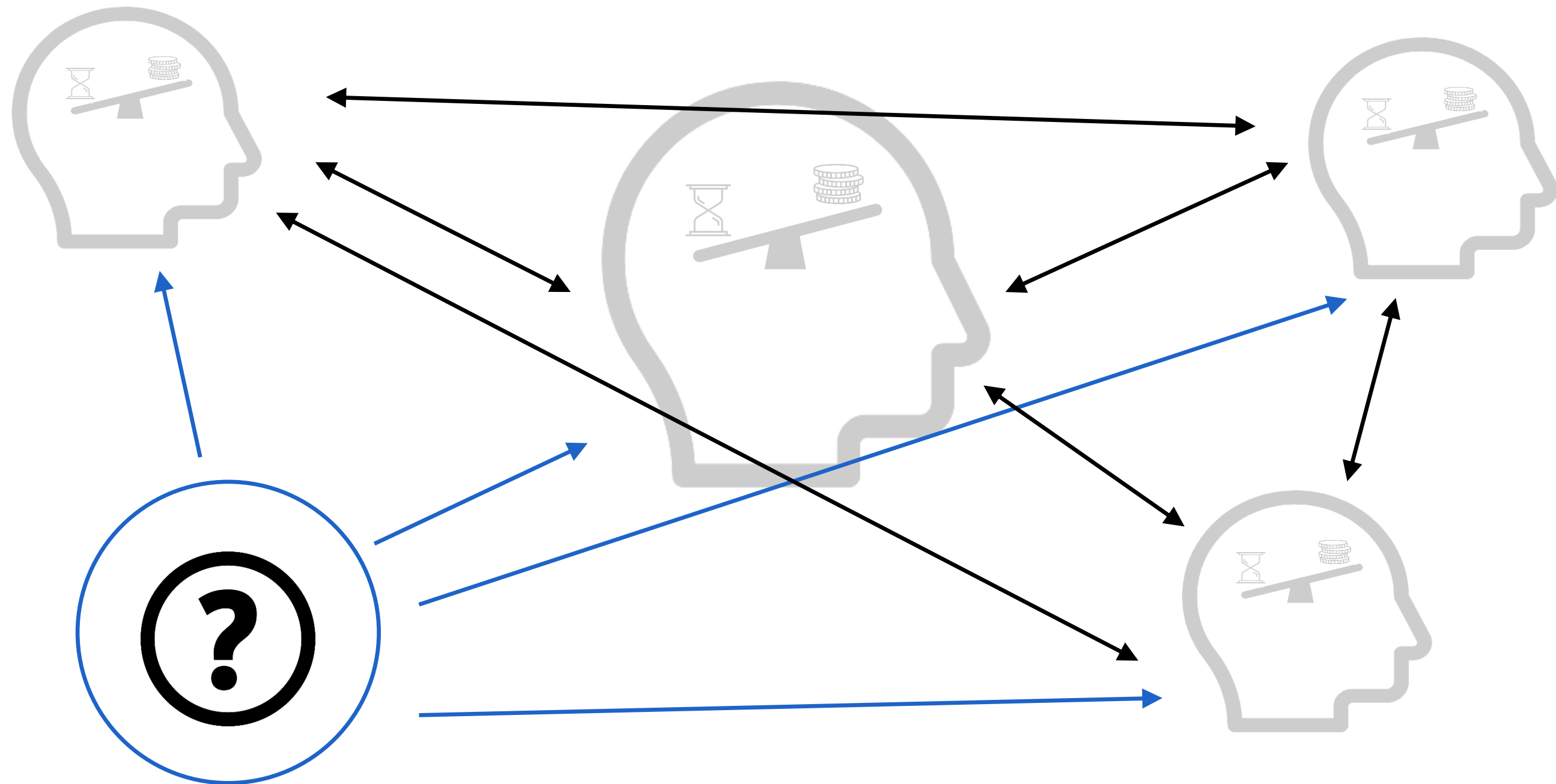
Quantitative extension to business modeling





# TECHNO-ECONOMIC ANALYSIS

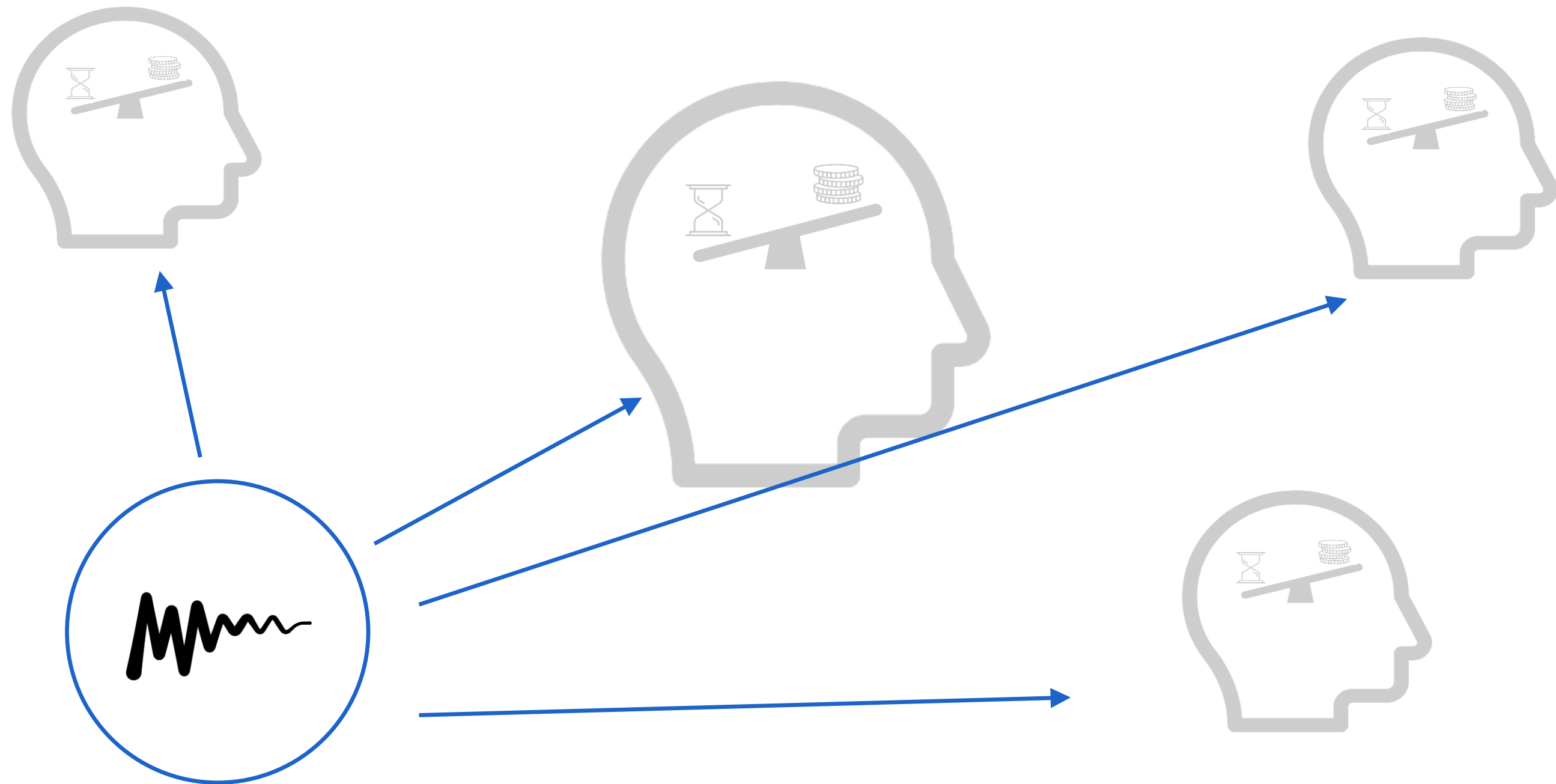
.. by focusing on impact of uncertainties





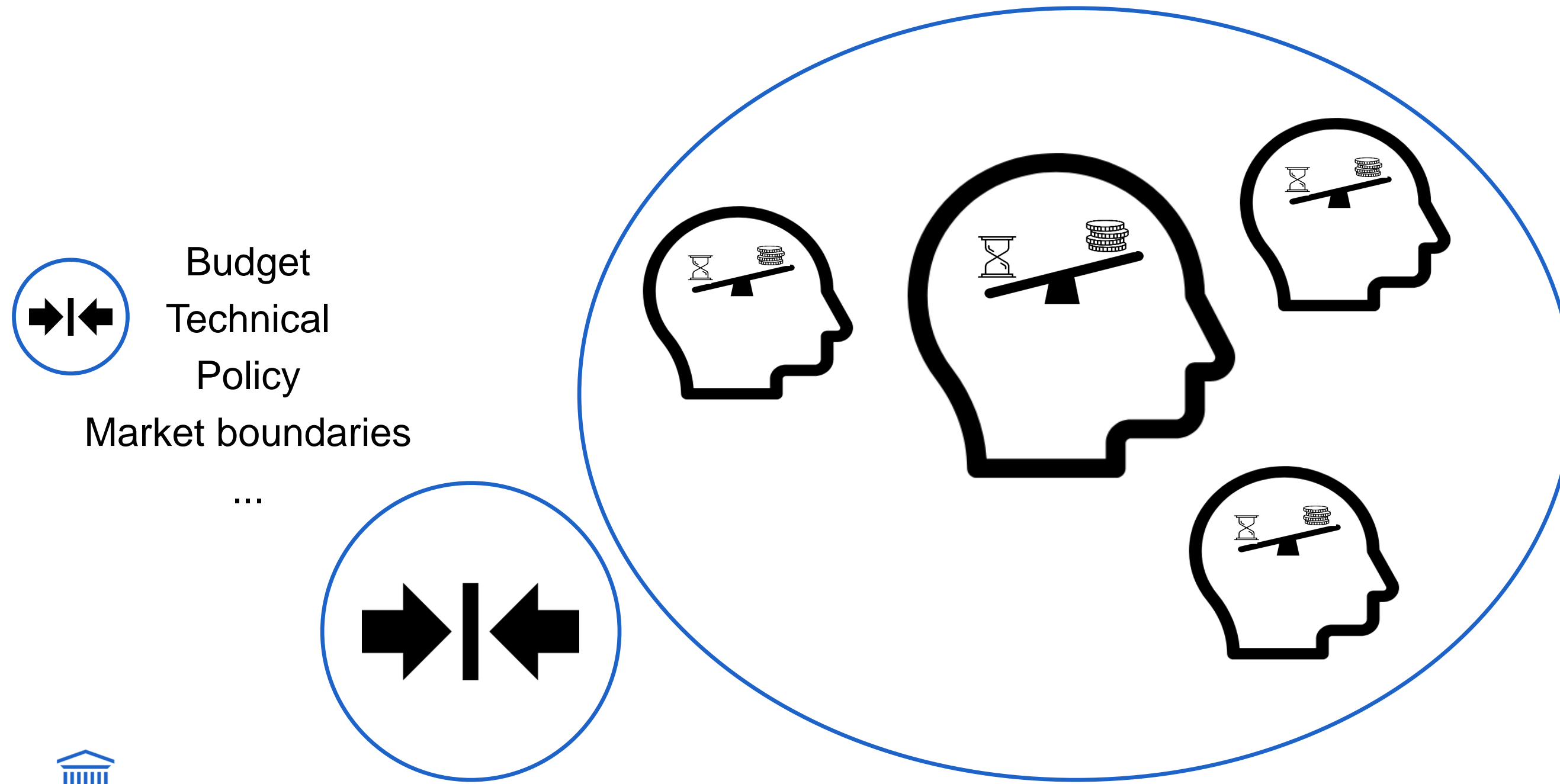
# TECHNO-ECONOMIC ANALYSIS

... by taking into account market and customer dynamics



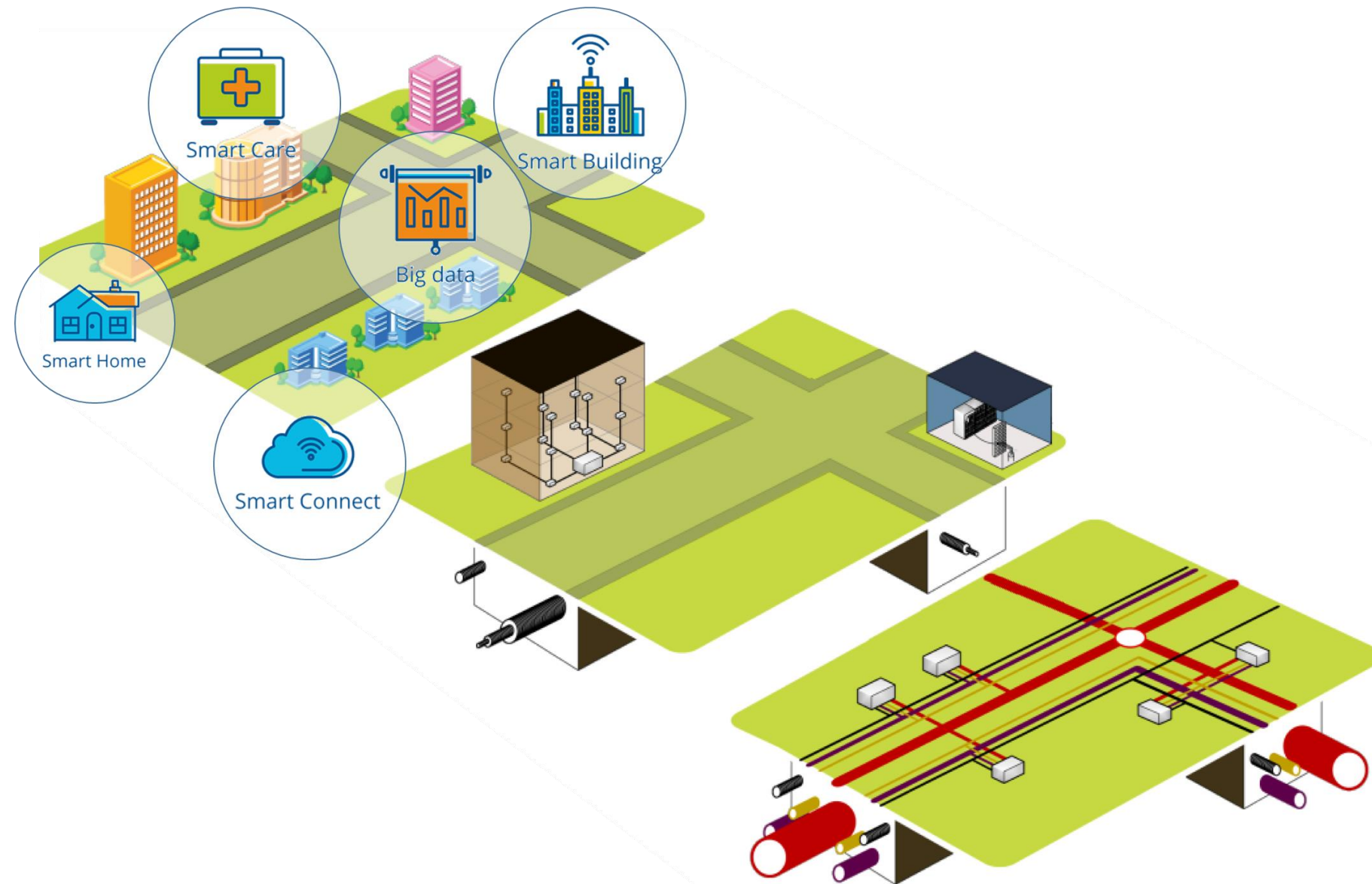
# TECHNO-ECONOMIC ANALYSIS

... and by adapting to boundary conditions



# TECHNOLOGICAL INNOVATION

Leads to business opportunities and challenges



How do **strategic** and **economic** considerations affect the choice of **IoT**-technology?

How to quantify the **savings** obtained by using **smart services**?

What is the impact of network topology choices on **deployment cost**?

What is the impact of software-defined networks on the **operational cost**?

# DIFFERENT APPLICATION DOMAINS



How does the cost of satellite access evolve? Can it offer a better (economic) solution for off-loading 4G/5G networks in rural areas compared to fixed networks?



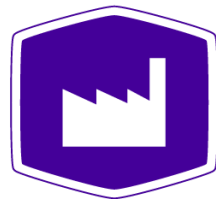
Which combination of transportation methods offer the most cost-optimal solution for end-users and how should payment happen to transport operators?



Can a market be defined for prosumers (end-users which both consume and produce) in virtual connected micro-grids? How will this impact the regular energy market?



Can IoT in emergency rooms lead to more optimized processes and thus better care? How should these improvements be quantified?



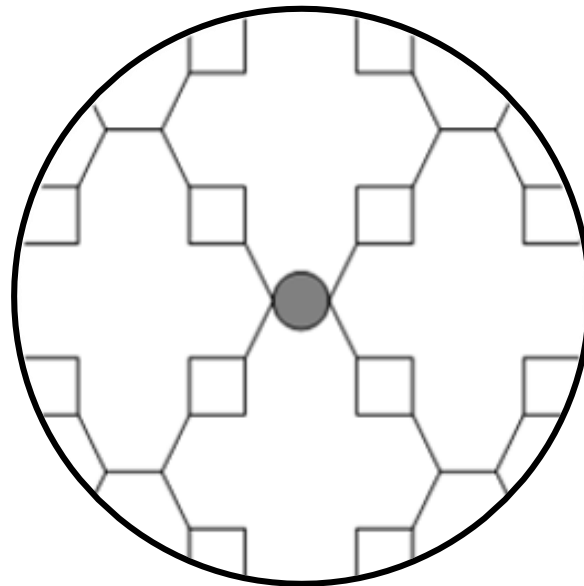
How can manufacturing plants be optimized? Which should be the main focus to increase profit: energy-efficiency, faster production, higher volumes, ...?



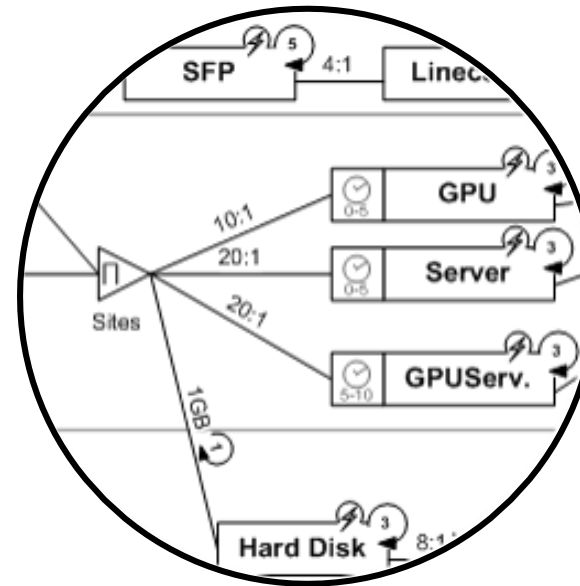
What is the expected long term impact of RLAH in Europe? What about new technologies (e.g. Voice over LTE), is the roll-out of these services still economically viable in the long future?

# A MODELING TOOLKIT

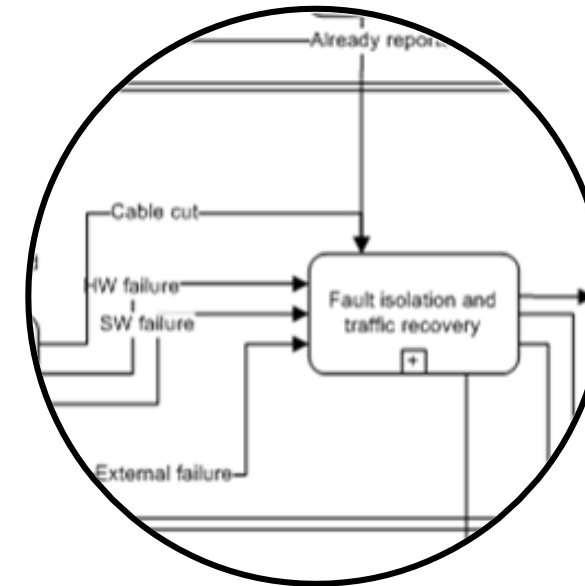
Supports our methodology



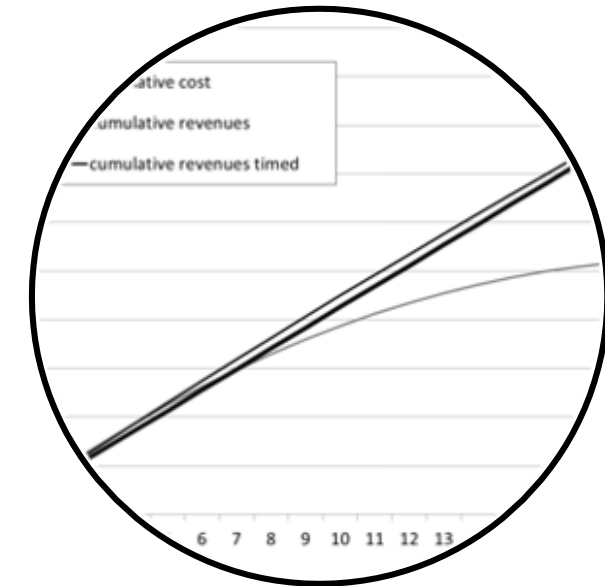
**NETWORK**  
modeling



**EQUIPMENT**  
modeling



**PROCESS**  
modeling



**REVENUE**  
modeling



# COOPERATION WITH INDUSTRY

internships possible for interested students



# HOW TO REACH US?

<http://technoeconomics.ugent.be>

<http://technoeconomicsportal.com>

[sofie.verbrugge@ugent.be](mailto:sofie.verbrugge@ugent.be)



Poster and presentation are available at:

[http://www.technoeconomics.ugent.be/education/open\\_topics.html](http://www.technoeconomics.ugent.be/education/open_topics.html)

**Topic on Plato are always tagged with: techno-economics!**