

LEAP4SME – BEHAVE 2020-2021

Energy Investment
and energy management
in for-profit companies

Strategic and cultural drivers of
investment decision-making

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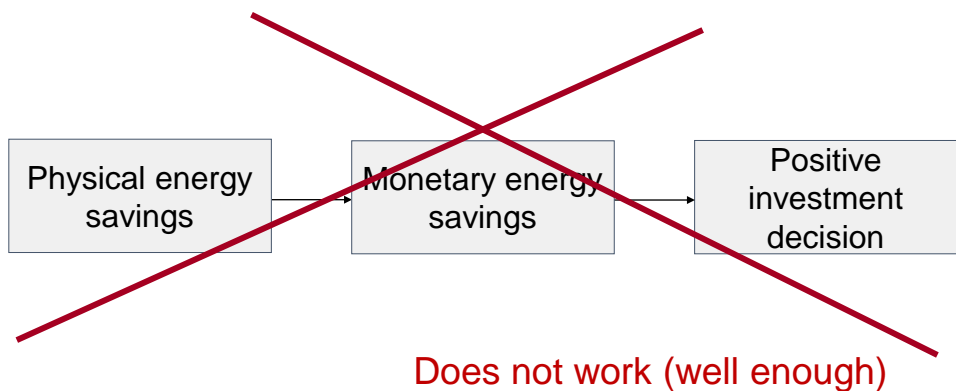
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Outline:

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- Theoretical background
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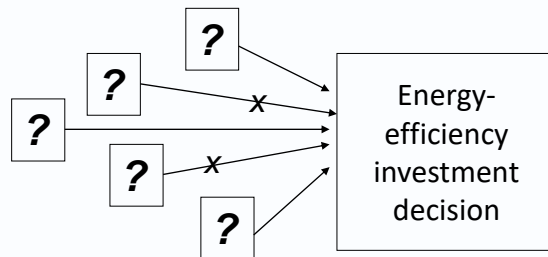
Context

The conventional approach to energy-efficiency projects:



Profitability ?? Debates – Poorly assessed in energy evaluations

- What are the factors (barriers and drivers) explaining firms' EE investment decisions?
- Why different organizational behaviors?



"The finance profession has concentrated on how capital investment decision should be made , with little systematic study on how they actually are made in practice". (Jensen, 1993)

Theoretical background

Organisation behaviour

Organisational decision-making

(Strategic investment decision-making - organisational finance)

- Decision-making is a “behavior of choice”.
- A corporate investment decision is the result of a dynamic process influenced by contexts, the actors involved (or not) and investment characteristics.
- Key factors of influence on investment decision-making:
 - Corporate **culture** and sub-cultures play an important role.
 - **Power** plays an important role: CEO and "core triad of heavyweight functions" (production, marketing & sales, finance).
 - Investment scope/purpose: **strategic character**.

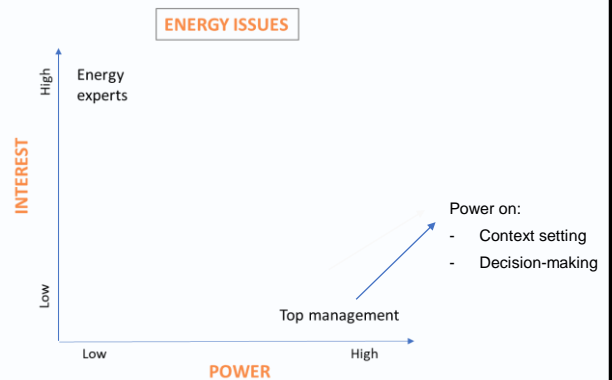
Actors in organisations

Interacting and competing cultures



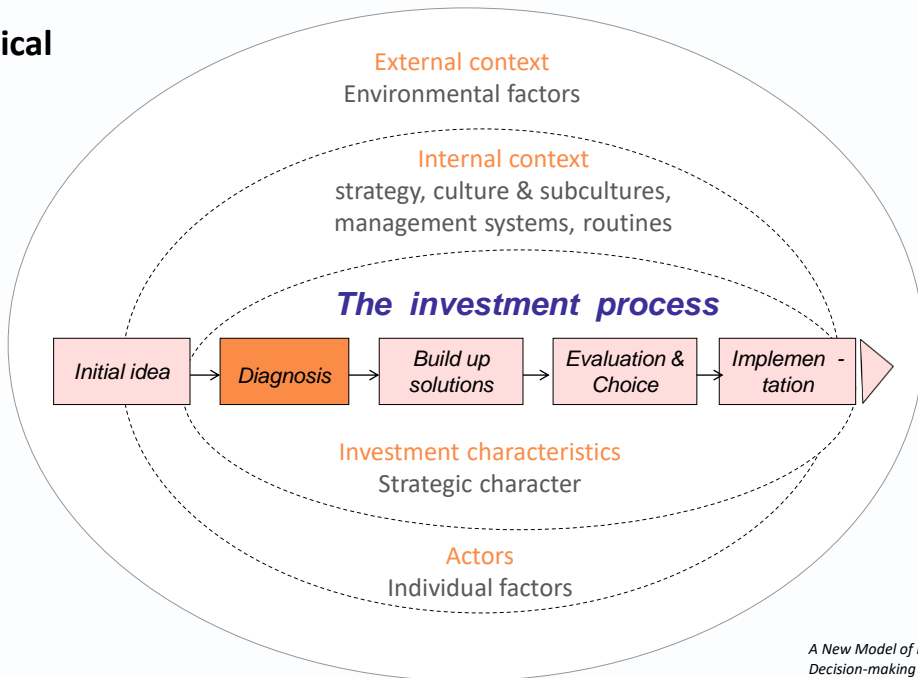
(Schneider & Barsoux, 2003:47)

Interest-influence matrix



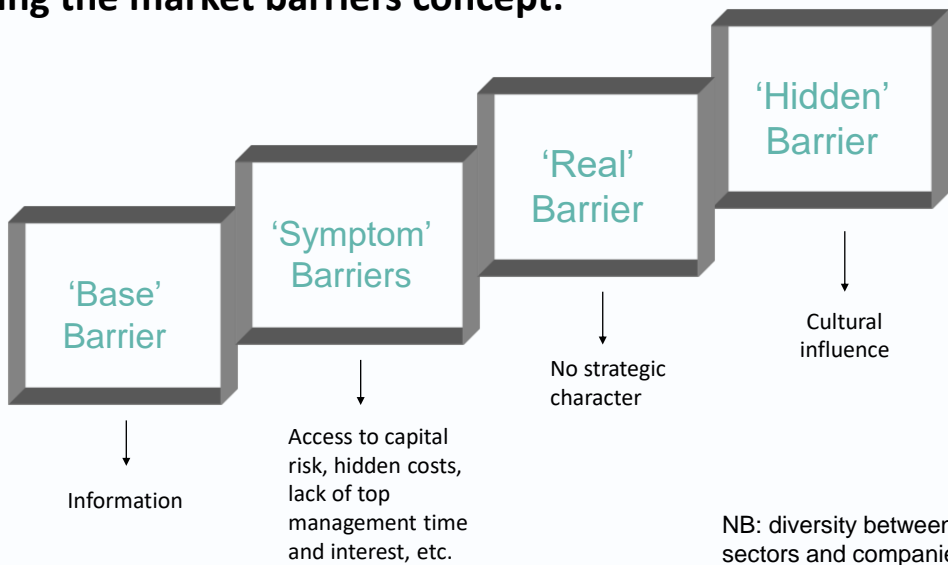
Cooremans (2021) Interest-influence matrix regarding energy issues in for-profit companies (adapted from Reed et al., 2009)

Theoretical model



Redesigning the market barriers concept:

Cooremans, 2012



Empirical confirmation

Research project M-Key: Management as a Key Driver of Energy Performance

- 3 Levels of empirical research:
 - Survey: 305 valid questionnaires out of 3'070 for-profit large-scale energy consumers contacted in 11 cantons, out of a total of approx. 10.000 Swiss for-profit LSECs.
 - Interviews: 26 companies
 - Case studies: 5 companies
- Respondent: energy “manager”
- Confirms Cooremans (2010, 2012) results



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Swiss National Science Foundation (SNSF)
Iten et al., 2017; Cooremans et
Schoenenberger, 2019)

Financial investment evaluation

M-KEY survey	YES		NO	
Payback (simple)	224	88%	31	12%
Net Present Value (NPV)	42	22%	146	78%
Internal Rate of Return (IRR)	52	27%	141	73%

- 22% and 27% companies only apply NPV and/or IRR to assess energy-efficiency investments, which is different from their financial practices regarding “general investment” evaluation (Cooremans, 2012).
- Low financial attractiveness considered as a barrier for 44% only.



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Energy management level is a proxy of strategic character and it is low:

10.2 points on average out of a maximum of 22 points.

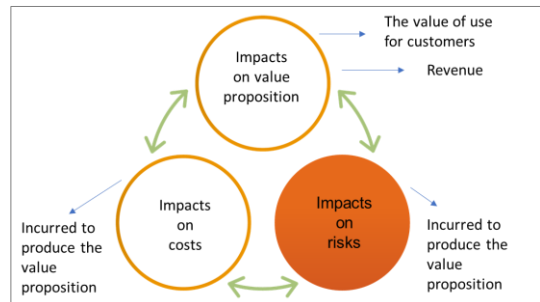


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Energy Management Level	Score	Scale
Energy intensity Which percentage do your energy consumption total costs represent in :		
- Percentage of your general expenses (%)		2 pts if at least 1 answer
- Percentage of your turnover (%)	2	
Did your company make a commitment of a continuous reduction of its energy consumption	2	yes = 2 / no = 0
Did your company undertake any of the following tasks in relation with energy use :		
- Evaluation of energy performance (benchmarking)	1	yes = 1 / no = 0
- Definition of baseline	1	yes = 1 / no = 0
- Definition of key performance indicators	2	yes = 2 / no = 0
- Definition of energy policy	1	yes = 1 / no = 0
- Setting of measurable goals regarding energy consumption reduction	1	yes = 1 / no = 0
- Definition and setting of measures to reach the goals defined	1	yes = 1 / no = 0
- Data collection regarding goals achievement	1	yes = 1 / no = 0
Which resources have been allocated to energy-efficiency measures implementation :		
- Human resources (i.e. project team)	1	yes = 1 / no = 0
- Technical resources (i.e. meters)	1	yes = 1 / no = 0
- Electronic resources (i.e. software)	1	yes = 1 / no = 0
Energy manager :		
- Does the company have an energy manager	2	yes = 2 / no = 0
- Does the energy manager perform other functions in your company	0	yes = -1 / no = 0
- If yes, which one	--	
Does your company establish an internal communication on energy issues	1	yes = 1 / no = 0
Did your company organize the following systems and procedures in relation with its energy policy:		
- Training system for staff	1	yes = 1 / no = 0
- Reward system	1	yes = 1 / no = 0
- Monitoring system of the results in goals reaching	1	yes = 1 / no = 0
- Revising goals procedure	1	yes = 1 / no = 0
TOTAL	22	Maximum score = 22 pts

Strategic investment evaluation

- Other investment more important = the first barrier to energy-efficiency investment (70%).
- Energy-efficiency investments perceived as moderately strategic.
- Energy management level is low.
- NEBs not taken into account in investment evaluations.



The 3 dimensions of competitive advantage,
Cooremans (2011)

Definition: “an investment is strategic if it contributes to create, maintain or develop a sustainable competitive advantage”
(Cooremans, 2011)



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Empirical research conclusions

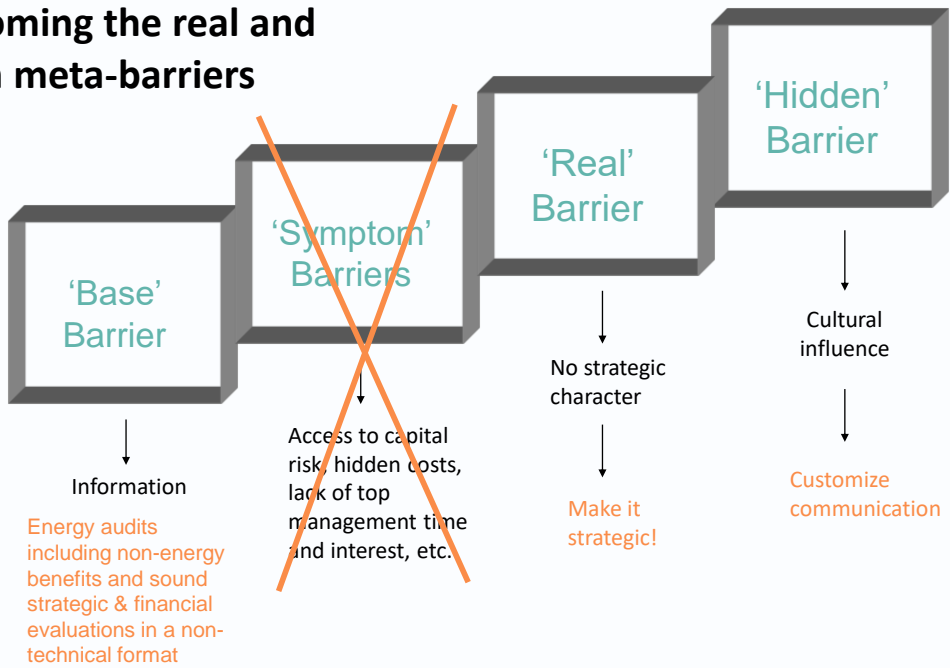
- Strategic logic is more powerful than financial logic.
- Strategic character influences:
 - The competition winner.
 - Financial requirements applied to projects.
 - Energy management levels.
- Energy-efficiency projects are perceived as non-strategic by most companies.
- Legal framework conditions play an important role.

Consequences

- Energy-efficiency projects are often not selected
- Companies waste energy

Solutions

Overcoming the real and hidden meta-barriers



The MBenefits method of analysis



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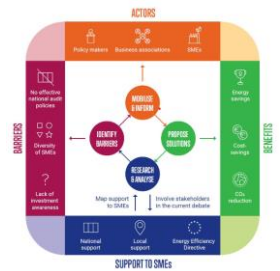
ENERGY EFFICIENCY
in Industrial Processes



Conclusions
Recommandations

Next steps for research

- Sound literature review better than development of new empirical research.
- Stabilization and common definition of concepts and theoretical frameworks.
- Inspiration to be found in other theoretical frameworks.
- Compare treatment of other corporate issues with treatment of energy issues.
- Interview actors located in different functions in companies (not only energy managers) to compare their views.



Policy recommendations

- Increase transparency and reduce complexity of supporting and regulatory schemes.
- Promote monitoring & control systems.
- Promote M-Benefits in energy audits and energy investment evaluation to **overcome financial and strategic barriers**.
- Train energy engineers to be less technical in their communication and to better applying (a few selected) business management concepts and tools to **overcome cultural barriers**.

Thank you for your attention

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