

# Strategic Fit of Energy Efficiency



Strategic and Cultural Dimensions of Investment Decisions

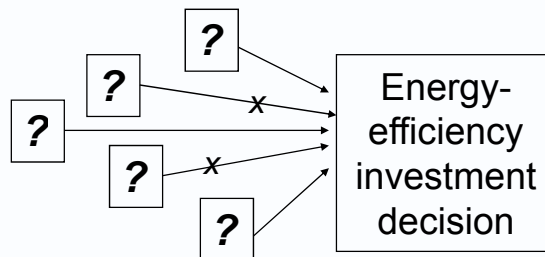
## Outline

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- Background and objectives
- Conceptual framework  
Decision-making in organisations
- Empirical study
- Conclusion:  
make it strategic!

## Background

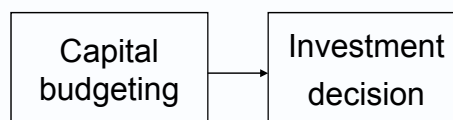
- What are the factors explaining firms' EE investment decisions?
- Why different organizational behaviors?



## Background

**Neo-classical finance (prescriptive) answer:**

the investment decision is the result of a technical evaluation. Profitability is the key.



*“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)*

## Outline

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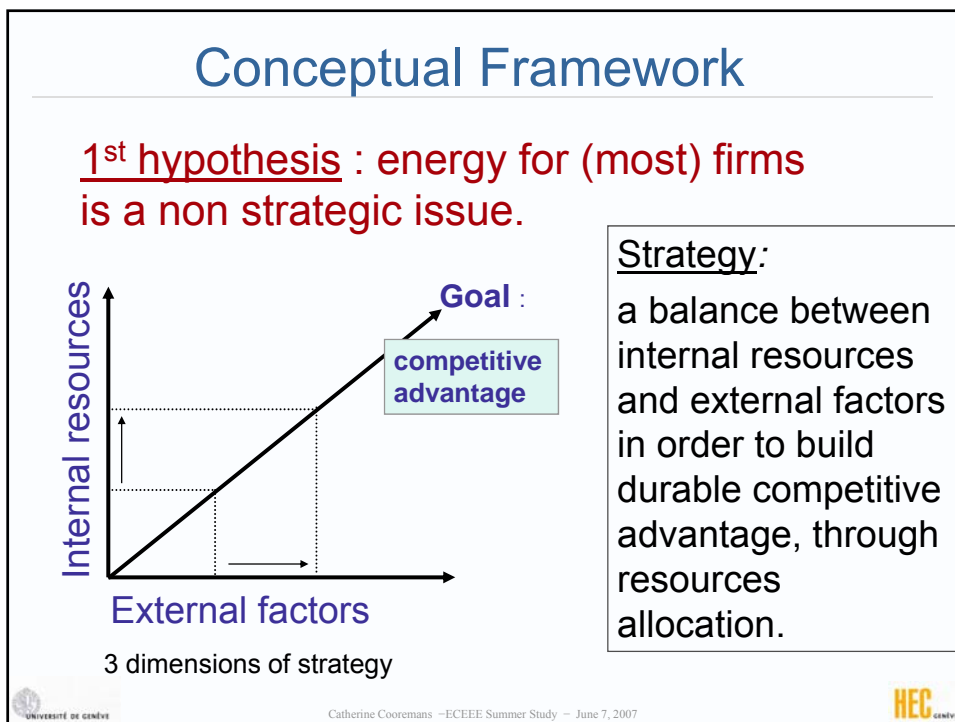
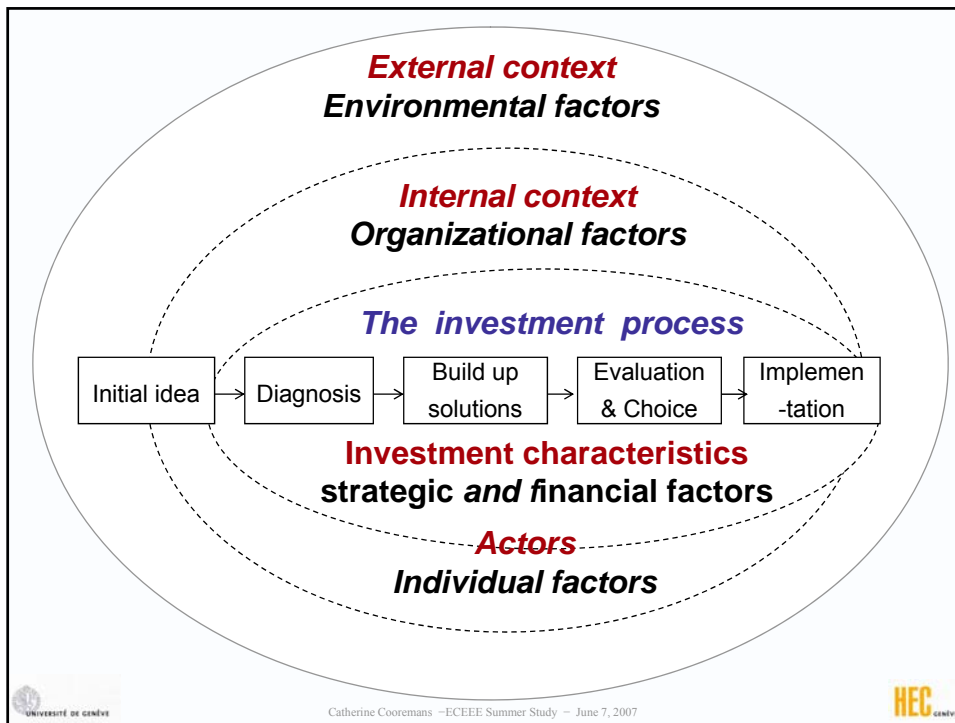
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## Conceptual framework

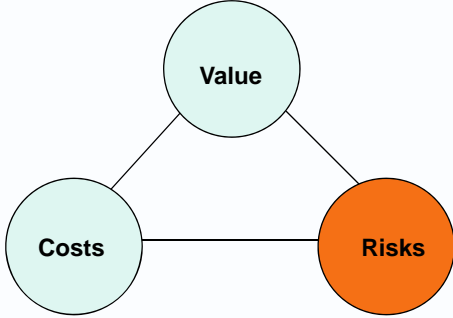
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### *Decision-making in organisations:*

- To decide means making a **choice** between different projects and to translate this choice into action: a decision is “a specific commitment to **action**” (Mintzberg, Raisinghani and Theoret, 1976).
- A decision is the result of a dynamic **process** influenced by the **actors** involved, **context** and **investment characteristics**.



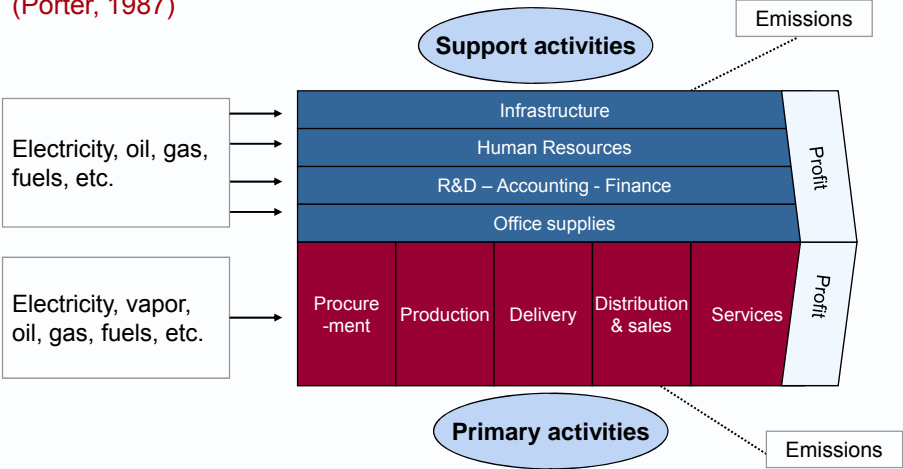
# Conceptual Framework



3 dimensions of the competitive advantage

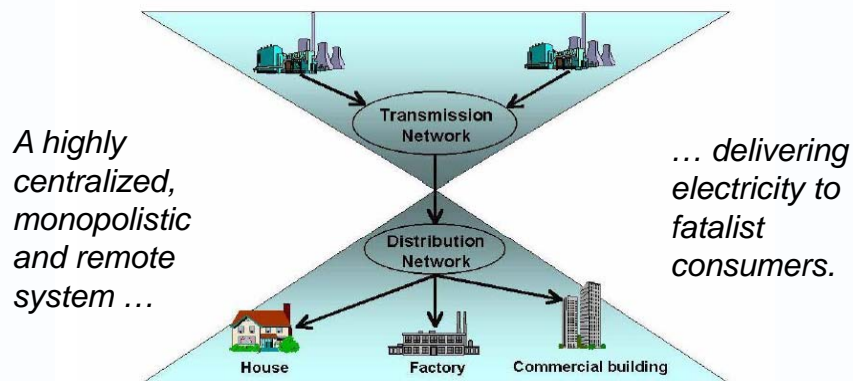
# Conceptual Framework

## The value chain analysis (Porter, 1987)



## Energy culture

**2<sup>nd</sup> hypothesis** : 'energy culture' is influencing the EE investment decision



Source: Alfonso Gonzalez Finat – EU DG Energy and Transport – Conference COGEN Europe Mars 2005

## Conceptual Framework

### Electricity is

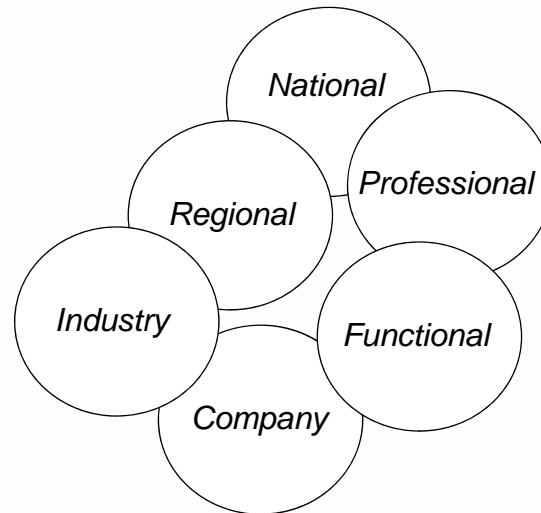
- Unconsciously regarded as readily-available and as free as the air we breathe.
- perceived as out of consumers' control
- a symbol of the 'ever-increasing' way of life (Stern, 1984)



A kind of a 'Fairy Electricity' culture

## Conceptual Framework

*Interacting  
cultural  
spheres of  
influence*



*(Schneider & Barsoux, 1999, 47)*

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## Empirical Study

- **Geneva Canton** : 445.000 people
- **Energy & Carbon Policy**:
  - Nuclear energy banned.
  - Goals by 2010 ( $\Leftrightarrow$ 1990): 10%  $\downarrow$  CO<sup>2</sup> emissions, 0% increase electricity consumption
  - Goal by 2050: 2000 Watts society.
  - 20 actions plans, of which 2 audits programs.
- **Energy market**:
  - Geneva producing 24% of electricity needs
  - SIG, local electricity & gas producer/distributor, getting prepared for market liberalisation.

## Empirical study: NOE

- Geneva Canton Energy Office Planning (SCanE) & local public utility (SIG).
- **Peak DSM**: energy audit proposed F.O.C. to buildings consuming more than **1GWh/yr.**
- **~ 180 buildings / ~ 100 organizations**
- **~ 25%** of the total Geneva Canton electricity consumption.
- **~ 15%** cost-effective energy savings identified by the audits (18-24 months, simple pay-back).



## Empirical Study

- Quantitative & qualitative study.
- Most important data sources:
  - Energy manager:  
in-depth interview + questionnaire
  - Finance manager: questionnaire
- 38 firms / 67 buildings:
  - 21 secondary + 17 tertiary sectors
  - Mostly SME.
  - High diversity

## First Results

- Possible **hidden costs**? Not mentioned.
- Possible **hidden benefits**? Not mentioned.
- **Capital constraint**: not the major problem.
- **Cost** of energy: not a decisive decision factor.
- Security of energy supply **risk**: not considered.
- Energy prices **risk**: not considered.
- **Tenant/owner dilemma**: 2/3 own the buildings.

## First Results: Strategic Dimension

- **Fit with strategy = the 1st decision factor** < finance managers. Financial evaluation = important but not decisive.
- **EE average strategic value score is low:** 16/30.
- Same results in secondary & tertiary sectors.
- Huge **answers differences between firms in the same industry:** 10–26 /30
- **Energy cost** is the most important strategic criteria. BUT often low (1-2% of sales).

## First Results: Cultural Dimension

- NOE & energy efficiency considered differently by energy and finance managers.
- Finance managers:
  - hindering factors to energy-efficient technologies more important
  - Uncertainty on technologies and on prices;
- Energy managers: energy “activists”
- In strong opposition with administrative and/or commercial departments.

## First Results: Energy Management

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- Poor energy management  
7,8 / 21 in average.
- No difference between secondary and tertiary sectors.
- Huge differences within same business sectors seem to confirm influence of corporate culture on energy management.

## Outline

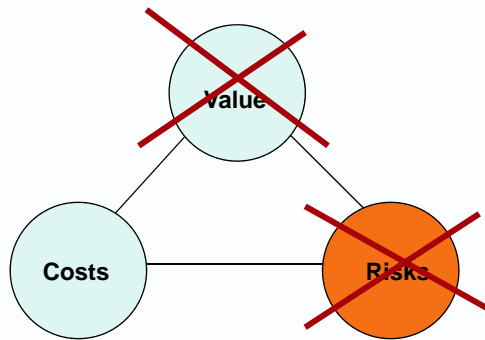
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## Conclusion

**A commodity view of energy.**

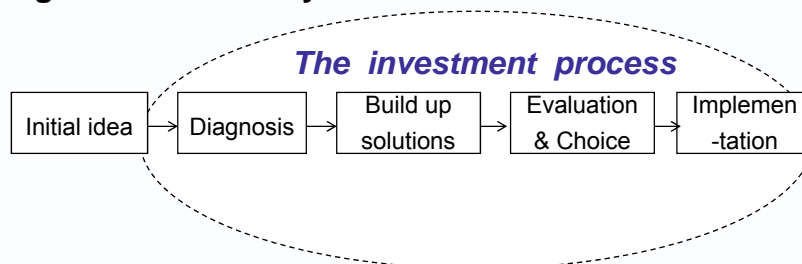
Cost is a decision factor only if the energy/cost reduction measure is not [perceived as] affecting core business.



Three dimensions of the competitive advantage

## Conclusion

**Investment characteristics:**  
Not strategic. Low stimulus.  
But still unstructured and high end uncertainty.



**Actors:** upper management not involved.  
What then is the power of the person in charge of energy?

# Conclusion: Make it Strategic!



CBS News - Rome Black out sept. 2003



NCCR Climate - Grindelwald, août 2005



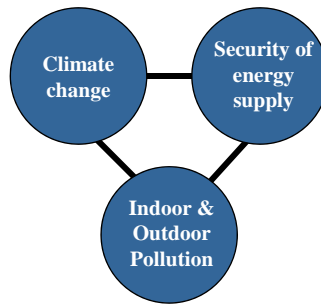
CRE - Prix spot base en Europe 01/04 - 06/05



L'énergie dans le monde en 2000  
J.-P. Cueille, Institut français du Pétrole,  
conférence au CUEPE, 08.01.2004

An unstable and vulnerable energy system ...

3 interrelated problems



Cogen - Le Rhin à sec, Cologne août 2003



New-York Times



Munich Re - Inondations France Sept. 2003



The Economist - 01.09.05, Golfe du Mexique

# Conclusion: Make it Strategic!

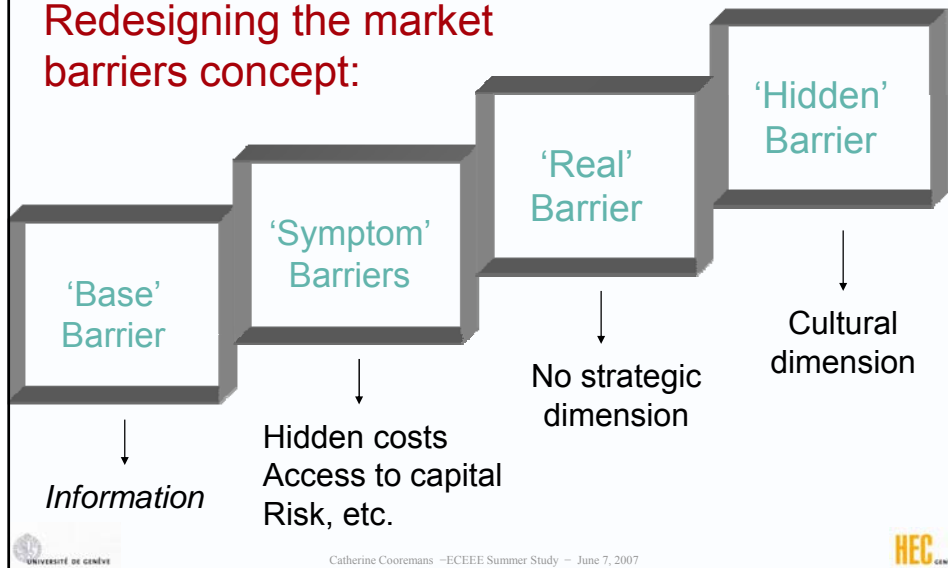
Highlighting connection with core business

Financial Benefits of Green Buildings (per ft <sup>2</sup> )	
Category	20-year NPV
Energy Value	\$5.79
Emissions Value	\$1.18
Water Value	\$0.51
Waste Value (1Year)	\$0.03
Commissioning O&M	\$8.47
Productivity Cat. I	\$36.89
& Health value Cat. II	\$55.33
Green Cost Premium	(\$4.00)
<b>Total 20-year NPV I</b>	<b>\$48.87</b>
<b>Total 20-year NPV II</b>	<b>\$67.31</b>

Source: Capital E Analysis

## Conclusion

Redesigning the market  
barriers concept:



## Conclusion

To overcome the "real" strategic barrier &  
"hidden" cultural barrier to REU by:

- Acting on the **cultural dimension**: information & change management.
- Making **energy visible**: improving energy management.
- Identifying & emphasizing **strategic importance** of energy use for any company.

THANK YOU FOR YOUR ATTENTION