

Concept Symposium 2008

Design and Decisions – Rationality and Chance

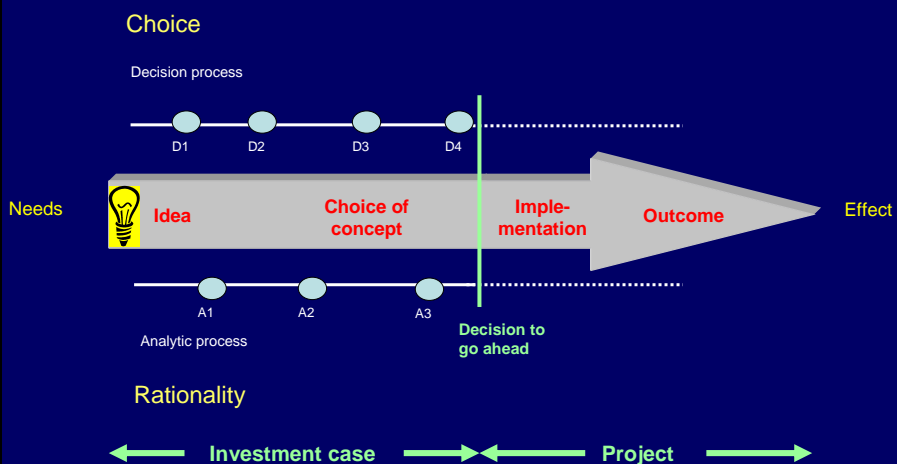
26 Cases Reviewed

Knut Samset

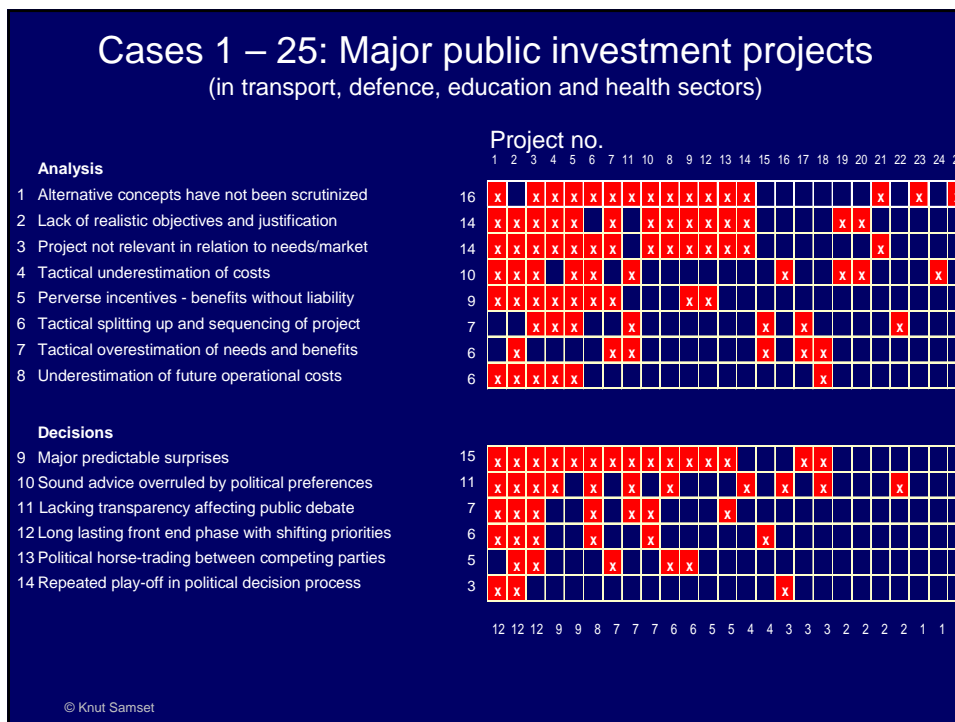
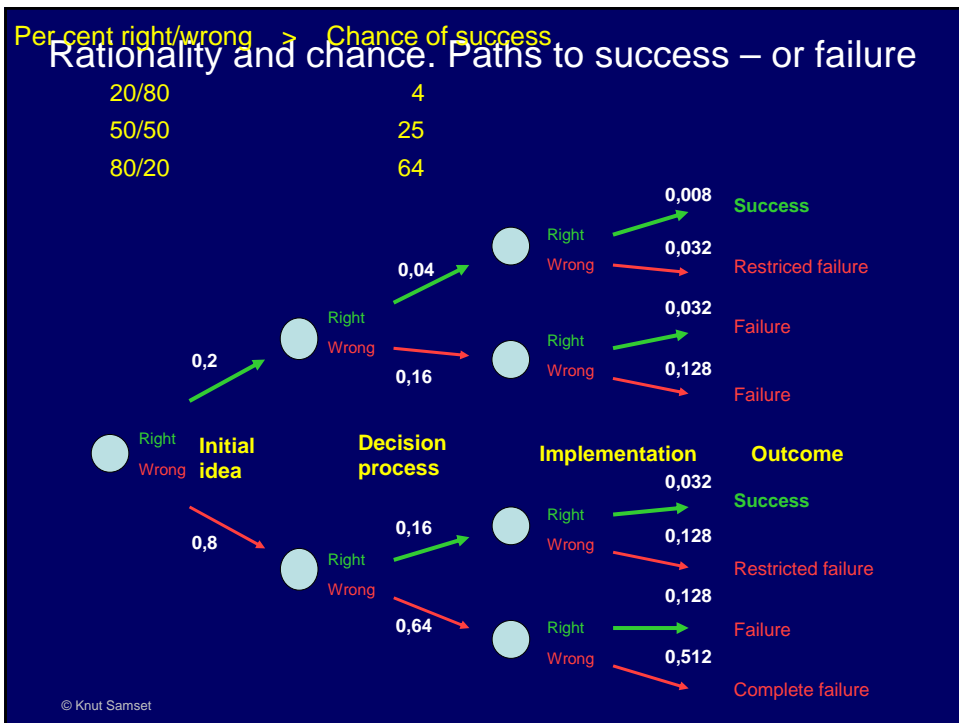
Professor, NTNU, Program Director,
The Concept Research Program

© Knut Samset

Ideas materialized



© Knut Samset



16 cases = 64 %

Analysis

1 **Alternative concepts have not been scrutinized**

- 2 Lack of realistic objectives and justification
- 3 Project not relevant in relation to needs/market
- 4 Tactical underestimation of costs
- 5 Perverse incentives - benefits without liability
- 6 Tactical splitting up and sequencing of project
- 7 Tactical overestimation of needs and benefits
- 8 Underestimation of future operational costs

Decisions

- 9 Major predictable surprises
- 10 Analysis/advice overruled by political preferences
- 11 Lacking transparency affecting public debate
- 12 Long lasting front end phase with shifting priorities
- 13 Political horse-trading between competing parties
- 14 Repeated play-off in political decision process

Zero option



Fossil fuel scenario

Alt. A



Fissile fuel scenario

Alt. B



WW_eW scenario

14 cases = 56 %

Analysis

1 Alternative concepts have not been scrutinized

2 **Lack of realistic objectives and justification**

- 3 Project not relevant in relation to needs/market
- 4 Tactical underestimation of costs
- 5 Perverse incentives - benefits without liability
- 6 Tactical splitting up and sequencing of project
- 7 Tactical overestimation of needs and benefits
- 8 Underestimation of future operational costs

Decisions

- 9 Major predictable surprises
- 10 Analysis/advice overruled by political preferences
- 11 Lacking transparency affecting public debate
- 12 Long lasting front end phase with shifting priorities
- 13 Political horse-trading between competing parties
- 14 Repeated play-off in political decision process

Stated objective: The shipping tunnel should contribute to improved safety and increased transport at sea, which will positively promote employment and new settlement in the area

New settlements

Higher employment rate

???

Increased sea transport

Improved safety at sea

Shipping tunnel completed

Attribution?

14 cases = 56 %

Analysis

- 1 Alternative concepts have not been scrutinized
- 2 Lack of realistic objectives and justification
- 3 Project not relevant in relation to needs/market**
- 4 Tactical underestimation of costs
- 5 Perverse incentives - benefits without liability
- 6 Tactical splitting up and sequencing of project
- 7 Tactical overestimation of needs and benefits
- 8 Underestimation of future operational costs

Decisions

- 9 Major predictable surprises
- 10 Analysis/advice overruled by political preferences
- 11 Lacking transparency affecting public debate
- 12 Long lasting front end phase with shifting priorities
- 13 Political horse-trading between competing parties
- 14 Repeated play-off in political decision process

- User group too small to justify investment (5 cases)
- Duplication of existing facilities (3 cases)
- No longer needed due to technological development (2 cases)
- Wasted due to changed political/military scenario (2 case)
- Marginal supplementary service to existing mainstream solution (2 cases)

© Knut Samset

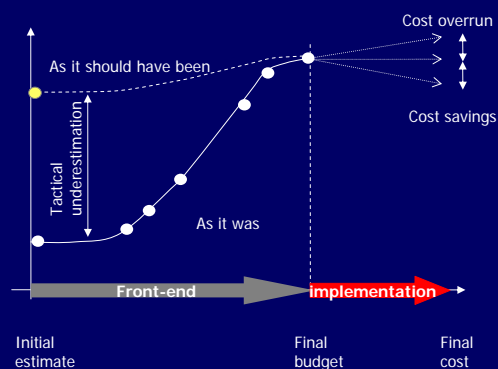
10 cases = 40 %

Analysis

- 1 Alternative concepts have not been scrutinized
- 2 Lack of realistic objectives and justification
- 3 Project not relevant in relation to needs/market
- 4 Tactical underestimation of costs**
- 5 Perverse incentives - benefits without liability
- 6 Tactical splitting up and sequencing of project
- 7 Tactical overestimation of needs and benefits
- 8 Underestimation of future operational costs

Decisions

- 9 Major predictable surprises
- 10 Analysis/advice overruled by political preferences
- 11 Lacking transparency affecting public debate
- 12 Long lasting front end phase with shifting priorities
- 13 Political horse-trading between competing parties
- 14 Repeated play-off in political decision process



© Knut Samset

9 cases = 36 %

Analysis

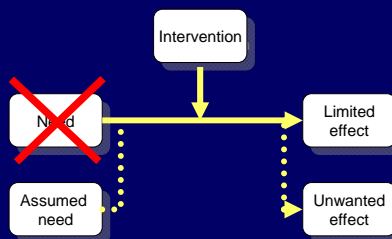
- 1 Alternative concepts have not been scrutinized
- 2 Lack of realistic objectives and justification
- 3 Project not relevant in relation to needs/market
- 4 Tactical underestimation of costs

5 Perverse incentives – benefits without liability

- 6 Tactical splitting up and sequencing of project
- 7 Tactical overestimation of needs and benefits
- 8 Underestimation of future operational costs

Decisions

- 9 Major predictable surprises
- 10 Analysis/advice overruled by political preferences
- 11 Lacking transparency affecting public debate
- 12 Long lasting front end phase with shifting priorities
- 13 Political horse-trading between competing parties
- 14 Repeated play-off in political decision process



© Knut Samset

7 cases = 28 %

Analysis

- 1 Alternative concepts have not been scrutinized
- 2 Lack of realistic objectives and justification
- 3 Project not relevant in relation to needs/market
- 4 Tactical underestimation of costs
- 5 Perverse incentives – benefits without liability

6 Tactical splitting up and sequencing of project

- 7 Tactical overestimation of needs and benefits
- 8 Underestimation of future operational costs

Decisions

- 9 Major predictable surprises
- 10 Analysis/advice overruled by political preferences
- 11 Lacking transparency affecting public debate
- 12 Long lasting front end phase with shifting priorities
- 13 Political horse-trading between competing parties
- 14 Repeated play-off in political decision process



© Knut Samset

6 cases = 24 %

Analysis

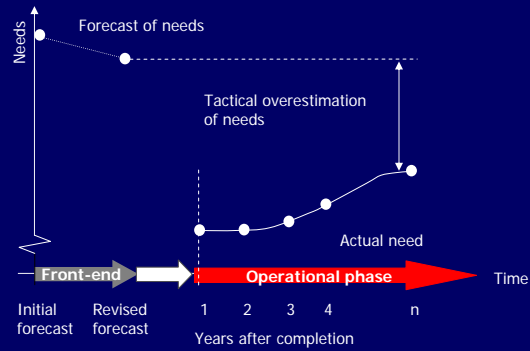
- 1 Alternative concepts have not been scrutinized
- 2 Lack of realistic objectives and justification
- 3 Project not relevant in relation to needs/market
- 4 Tactical underestimation of costs
- 5 Perverse incentives - benefits without liability
- 6 Tactical splitting up and sequencing of project

7 Tactical overestimation of needs and benefits

- 8 Underestimation of future operational costs

Decisions

- 9 Major predictable surprises
- 10 Analysis/advice overruled by political preferences
- 11 Lacking transparency affecting public debate
- 12 Long lasting front end phase with shifting priorities
- 13 Political horse-trading between competing parties
- 14 Repeated play-off in political decision process



© Knut Samset

15 cases = 60 %

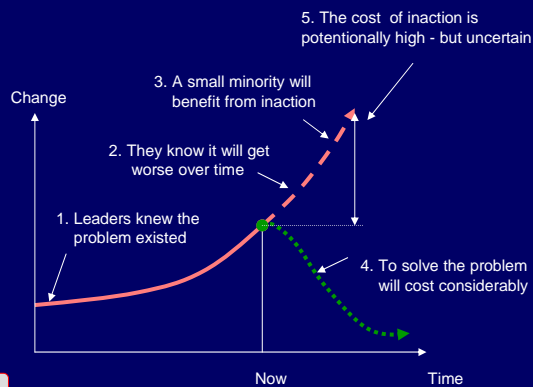
Analysis

- 1 Alternative concepts have not been scrutinized
- 2 Lack of realistic objectives and justification
- 3 Project not relevant in relation to needs/market
- 4 Tactical underestimation of costs
- 5 Perverse incentives - benefits without liability
- 6 Tactical splitting up and sequencing of project
- 7 Tactical overestimation of needs and benefits
- 8 Underestimation of future operational costs

Decisions

9 Major predictable surprises

- 10 Analysis/advice overruled by political preferences
- 11 Lacking transparency affecting public debate
- 12 Long lasting front end phase with shifting priorities
- 13 Political horse-trading between competing parties
- 14 Repeated play-off in political decision process



(Based on: Bazerman and Watson, 2004)



© Knut Samset

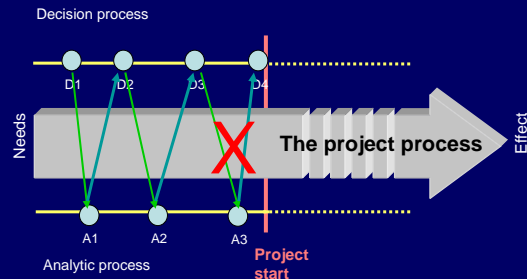
11 cases = 44 %

Analysis

- 1 Alternative concepts have not been scrutinized
- 2 Lack of realistic objectives and justification
- 3 Project not relevant in relation to needs/market
- 4 Tactical underestimation of costs
- 5 Perverse incentives - benefits without liability
- 6 Tactical splitting up and sequencing of project
- 7 Tactical overestimation of needs and benefits
- 8 Underestimation of future operational costs

Decisions

- 9 Major predictable surprises
- 10 Sound advice overruled by political preferences**
- 11 Lacking transparency affecting public debate
- 12 Long lasting front end phase with shifting priorities
- 13 Political horse-trading between competing parties
- 14 Repeated play-off in political decision process



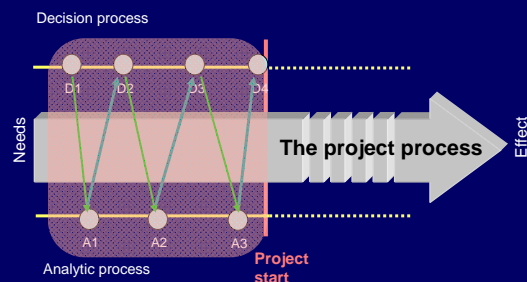
7 cases = 28 %

Analysis

- 1 Alternative concepts have not been scrutinized
- 2 Lack of realistic objectives and justification
- 3 Project not relevant in relation to needs/market
- 4 Tactical underestimation of costs
- 5 Perverse incentives - benefits without liability
- 6 Tactical splitting up and sequencing of project
- 7 Tactical overestimation of needs and benefits
- 8 Underestimation of future operational costs

Decisions

- 9 Major predictable surprises
- 10 Sound advice overruled by political preferences
- 11 Lacking transparency affecting public debate**
- 12 Long lasting front end phase with shifting priorities
- 13 Political horse-trading between competing parties
- 14 Repeated play-off in political decision process



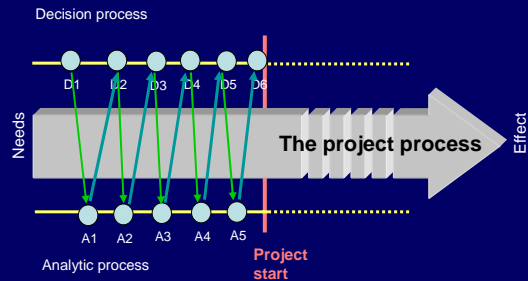
6 cases = 24 %

Analysis

- 1 Alternative concepts have not been scrutinized
- 2 Lack of realistic objectives and justification
- 3 Project not relevant in relation to needs/market
- 4 Tactical underestimation of costs
- 5 Perverse incentives - benefits without liability
- 6 Tactical splitting up and sequencing of project
- 7 Tactical overestimation of needs and benefits
- 8 Underestimation of future operational costs

Decisions

- 9 Major predictable surprises
- 10 Sound advice overruled by political preferences
- 11 Lacking transparency affecting public debate
- 12 Long lasting front end phase with shifting priorities**
- 13 Political horse-trading between competing parties
- 14 Repeated play-off in political decision process



© Knut Samset

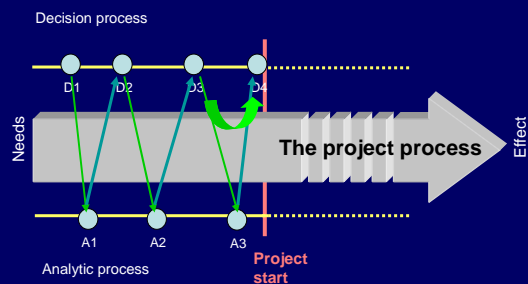
5 cases = 20 %

Analysis

- 1 Alternative concepts have not been scrutinized
- 2 Lack of realistic objectives and justification
- 3 Project not relevant in relation to needs/market
- 4 Tactical underestimation of costs
- 5 Perverse incentives - benefits without liability
- 6 Tactical splitting up and sequencing of project
- 7 Tactical overestimation of needs and benefits
- 8 Underestimation of future operational costs

Decisions

- 9 Major predictable surprises
- 10 Sound advice overruled by political preferences
- 11 Lacking transparency affecting public debate
- 12 Long lasting front end phase with shifting priorities
- 13 Political horse-trading between competing parties**
- 14 Repeated play-off in political decision process



© Knut Samset

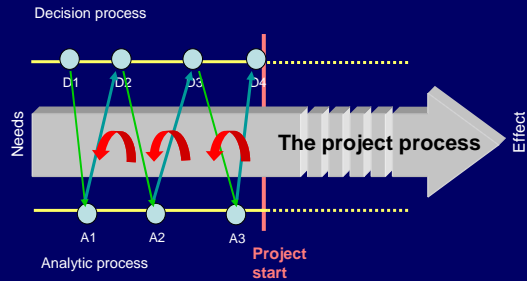
3 cases = 12 %

Analysis

- 1 Alternative concepts have not been scrutinized
- 2 Lack of realistic objectives and justification
- 3 Project not relevant in relation to needs/market
- 4 Tactical underestimation of costs
- 5 Perverse incentives - benefits without liability
- 6 Tactical splitting up and sequencing of project
- 7 Tactical overestimation of needs and benefits
- 8 Underestimation of future operational costs

Decisions

- 9 Major predictable surprises
- 10 Sound advice overruled by political preferences
- 11 Lacking transparency affecting public debate
- 12 Long lasting front end phase with shifting priorities
- 13 Political horse-trading between competing parties
- 14 Repeated play-off in political decision process



© Knut Samset

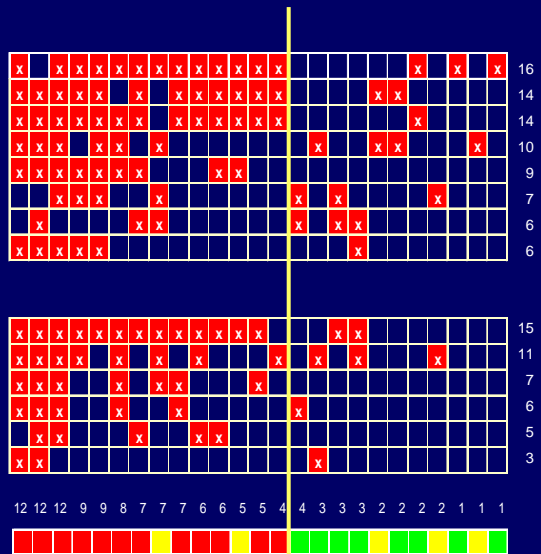
Success and failure

Analysis

- 1 **Alternative concepts** have not been scrutinized
- 2 Lack of **realistic objectives** and justification
- 3 Project not **relevant** in relation to needs/market
- 4 Tactical underestimation of **costs**
- 5 **Perverse incentives** - benefits without liability
- 6 **Tactical splitting up** and sequencing of project
- 7 Tactical overestimation of **needs** and benefits
- 8 Underestimation of future **operational costs**

Decisions

- 9 Major **predictable** surprises
- 10 Sound advice **overruled by political preferences**
- 11 Lacking **transparency** affecting public debate
- 12 Long lasting front end phase with **shifting priorities**
- 13 **Political horse-trading** between competing parties
- 14 **Repeated play-off** in political decision process



Success rating

© Knut Samset

Causes and effects

Analysis

- 1 Alternative concepts have not been scrutinized
- 2 Lack of realistic objectives and justification
- 3 Project not relevant in relation to needs/market
- 4 Tactical underestimation of costs

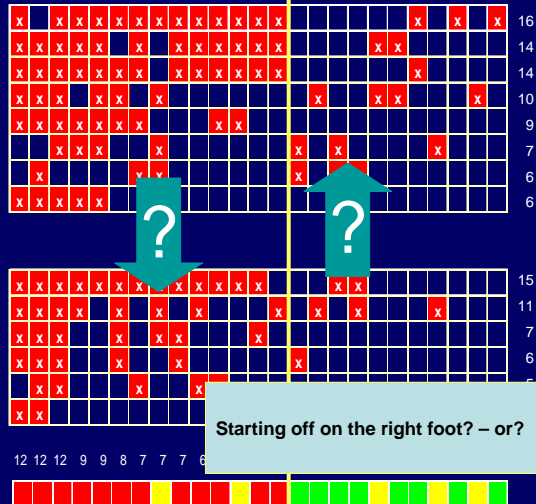
Starting off on the wrong foot? - or,

Decisions

- 9 Major predictable surprises
- 10 Sound advice overruled by political preferences
- 11 Lacking transparency affecting public debate

Messing things up along the road?

Sorting things out along the road?



Success rating

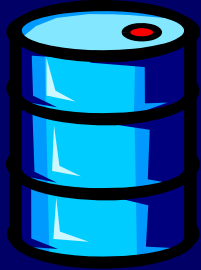
© Knut Samset

Some observations

- There is a strong tendency to choose the initial concept and stick to it
- Incremental improvements of an inferior solution - rather than fundamental change
- There is an overwhelming inertia: once set in motion - always impossible to stop
- The window of opportunities is usually larger than envisioned - and probably largely unexplored

© Knut Samset

Case 26: The power engine - a runaway project



200 liters

Hummer SUV 5 Km. per liter



© Knut Samset

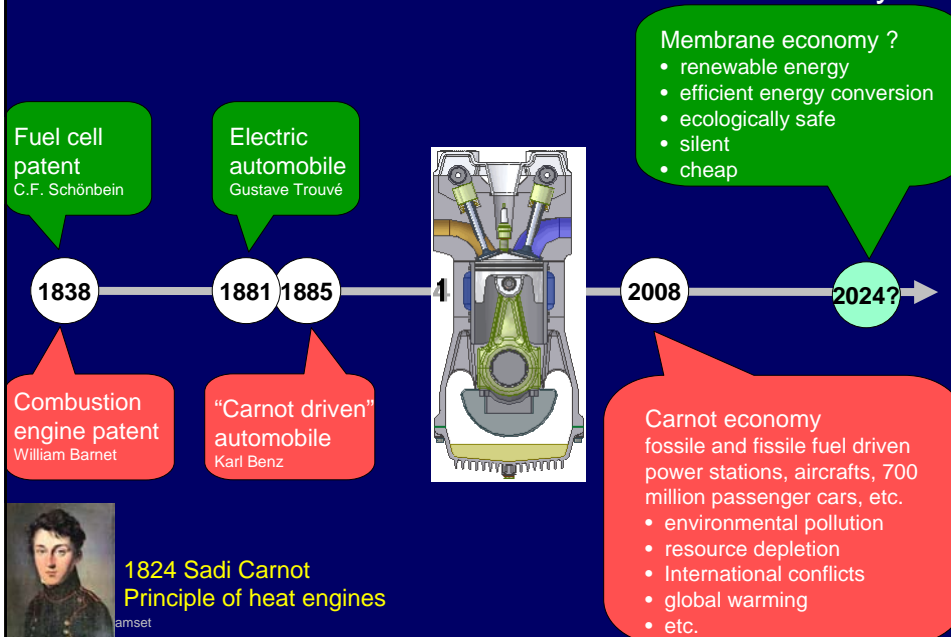
One way travel by car
Paris - Amsterdam (1000 km)

0,2 liters

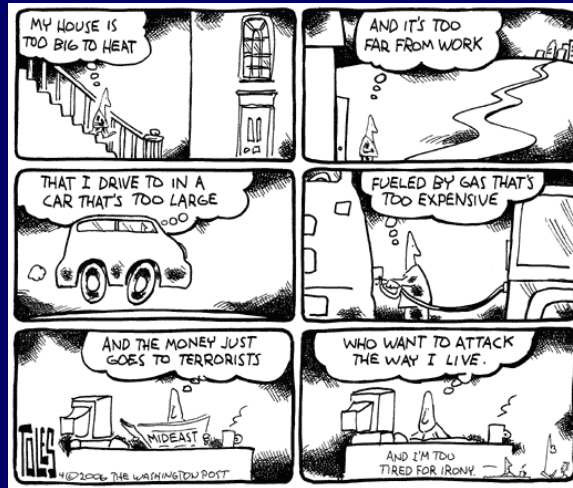
Shell eco-marathon winner 2007
5385 Km per liter



Case 26: The front-end – a bit of root cause analysis



Case 26 Alternative A



Source: The Washington Post

© Knut Samset

Case 26 Alternative B



The window of opportunities is wide open

© Knut Samset

Thank you for your attention

www.concept.ntnu.no

© Knut Samset