

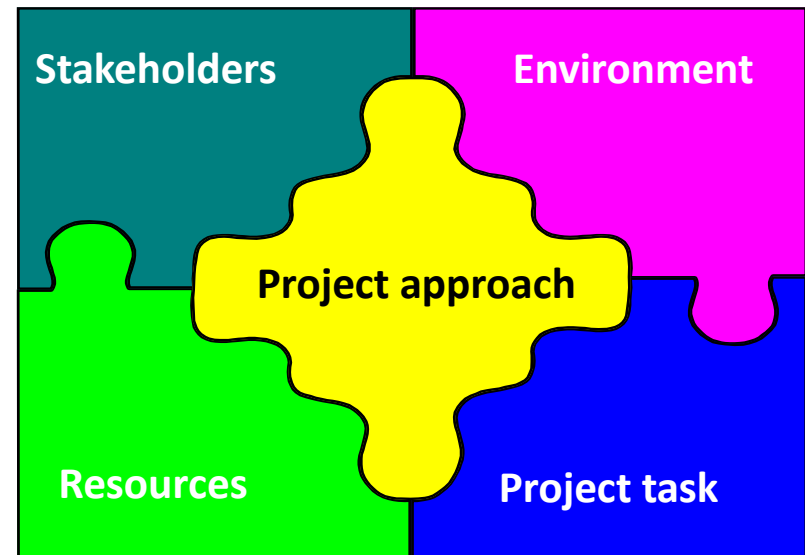
# Before the project is initiated



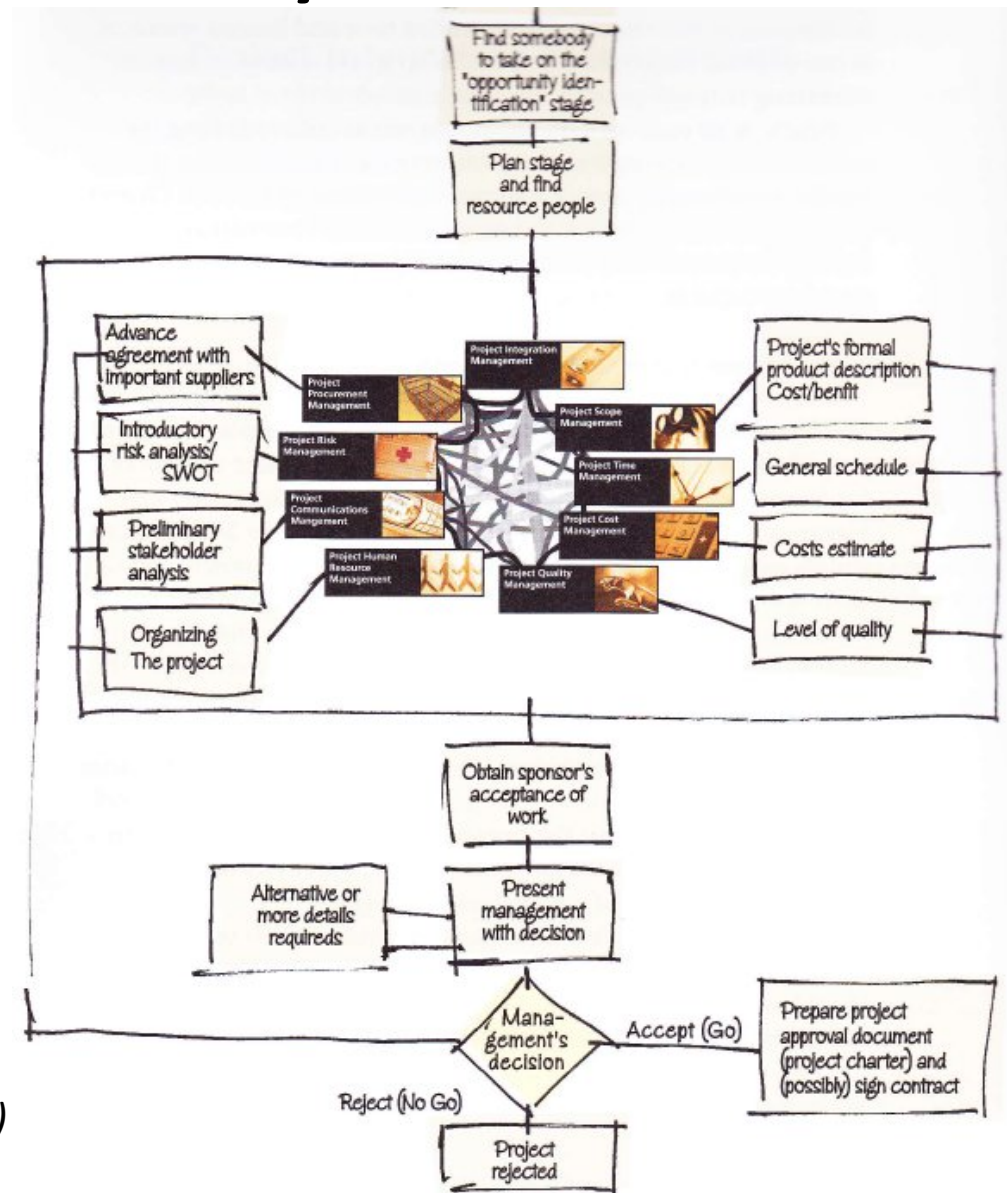
- the Opportunity Identification stage

# Before the project is decided

- Consider using a pre-project or feasibility study to:
  - Evaluate an idea, proposal or a system
  - Create the basis for a decision to start a project
- Ensure a systematic evaluation of:
  - Economy
  - Technology
  - Market
  - Business value
  - Organization
- State exactly the project's:
  - Prerequisites
  - Purpose
  - Scope
  - Context
  - Results
  - Contingencies



# Opportunity identification stage



Kousholt (2012e: 156)

# Documents needed for a decision

- The Project Charter:
  - Project description (purpose, scope and objectives)
  - Product description (preliminary requirements specification)
  - Business case (incl. Cost/Benefit analysis)
  - Preliminary budget
  - Preliminary schedule
  - Project organization (resource/competence requirements)
  - Preliminary stakeholder analysis
  - Risk analysis
  - Quality plan (quality level/goals/characteristics)
  - Subcontracts (proposal/agreement with subcontractors)
  - Technologies and platforms

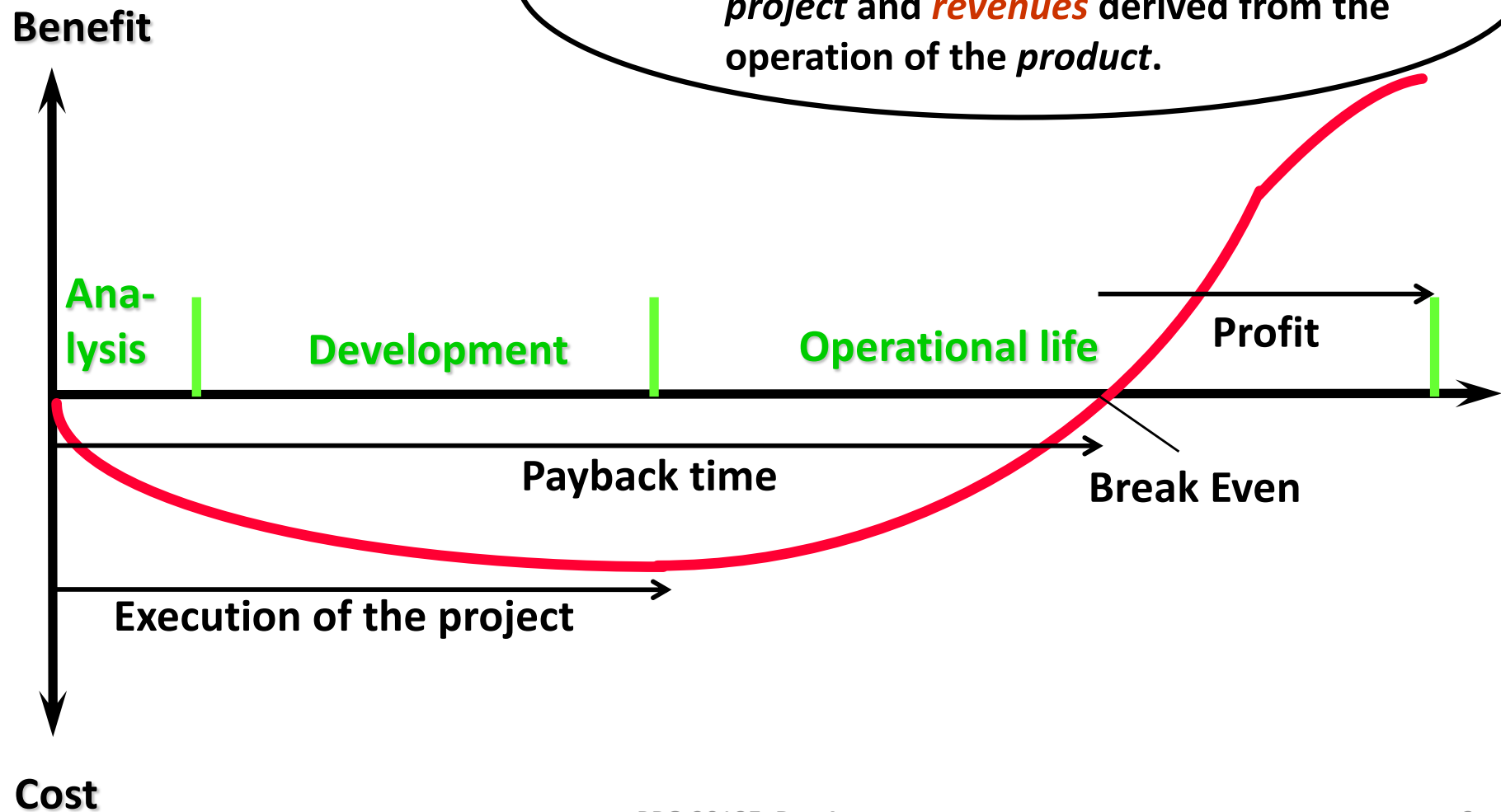
*See Kousholt (2012e: 209)*

# Cost-Benefit of the project



# CBA = Cost/Benefit analysis

Quantitative calculation based on **costs** derived from the execution of the *project* and **revenues** derived from the operation of the *product*.



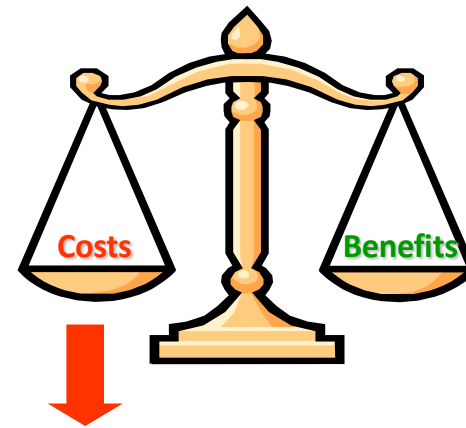
# Cost analysis

## Development of the new system / service

- Salaries and overhead
- Consultants
- Training
- Computer time and tools
- Recruitment of new competences
- Office space and equipment
- Travel costs

## Implementation of the new system / service

- Training of users
- Database conversion
- Site installations
- Installation team
- Approval by the authorities
- Parallel operation



## Operational costs

- Hardware, networks etc.
- Software
- Production staff
- Marketing and cost of sales
- Maintenance
- Facilities

## Financial costs

- Interest on loans / existing funds
- Opportunity costs

# Benefit analysis

## Increased sales / profit

- Increased number of transactions
- Improved margin
- Retaining customers ↑

## Customer satisfaction

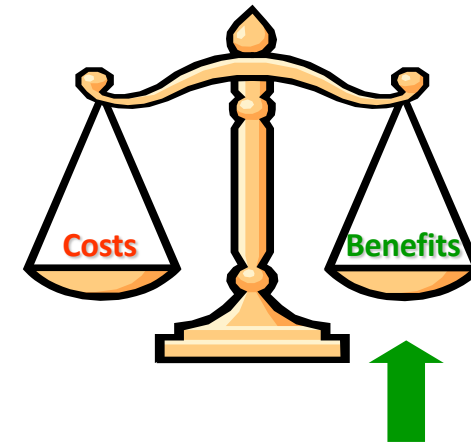
- Perception of increased value
- Better opening hours / availability
- Decreased response time

## Better quality

- Better and updated information
- Increased reliability – fewer defects

## Increased security

- Firewall, virus protection etc.



## Strategic advantages

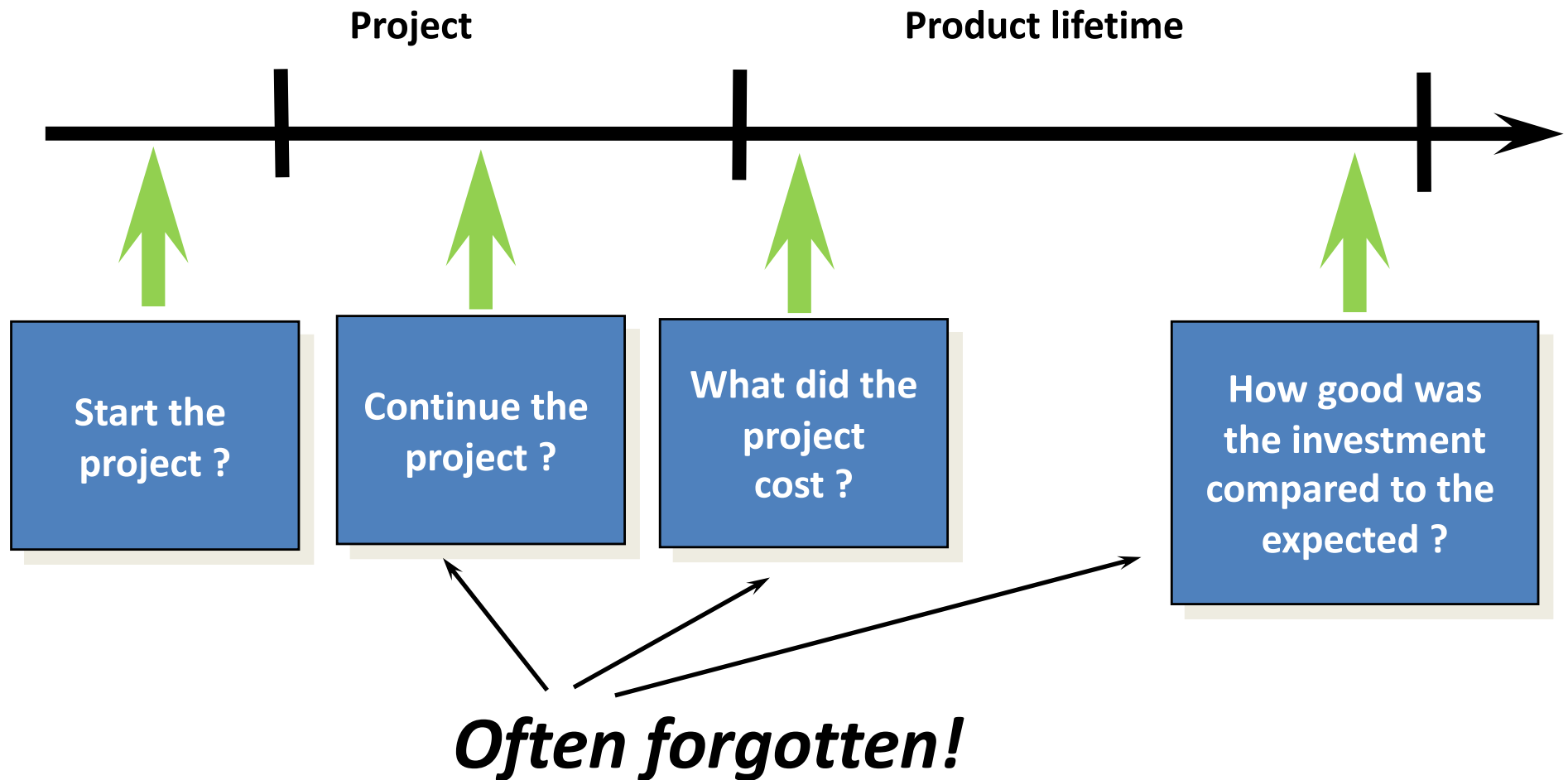
- “First mover advantage”
- Competitive advantage
- Strategic flexibility

## Reduced costs

- Fewer employees
- Avoiding to hire more
- Upgraded methods/tools/systems
- Lower operational costs



# When should you perform a CBA?



# NPV analysis

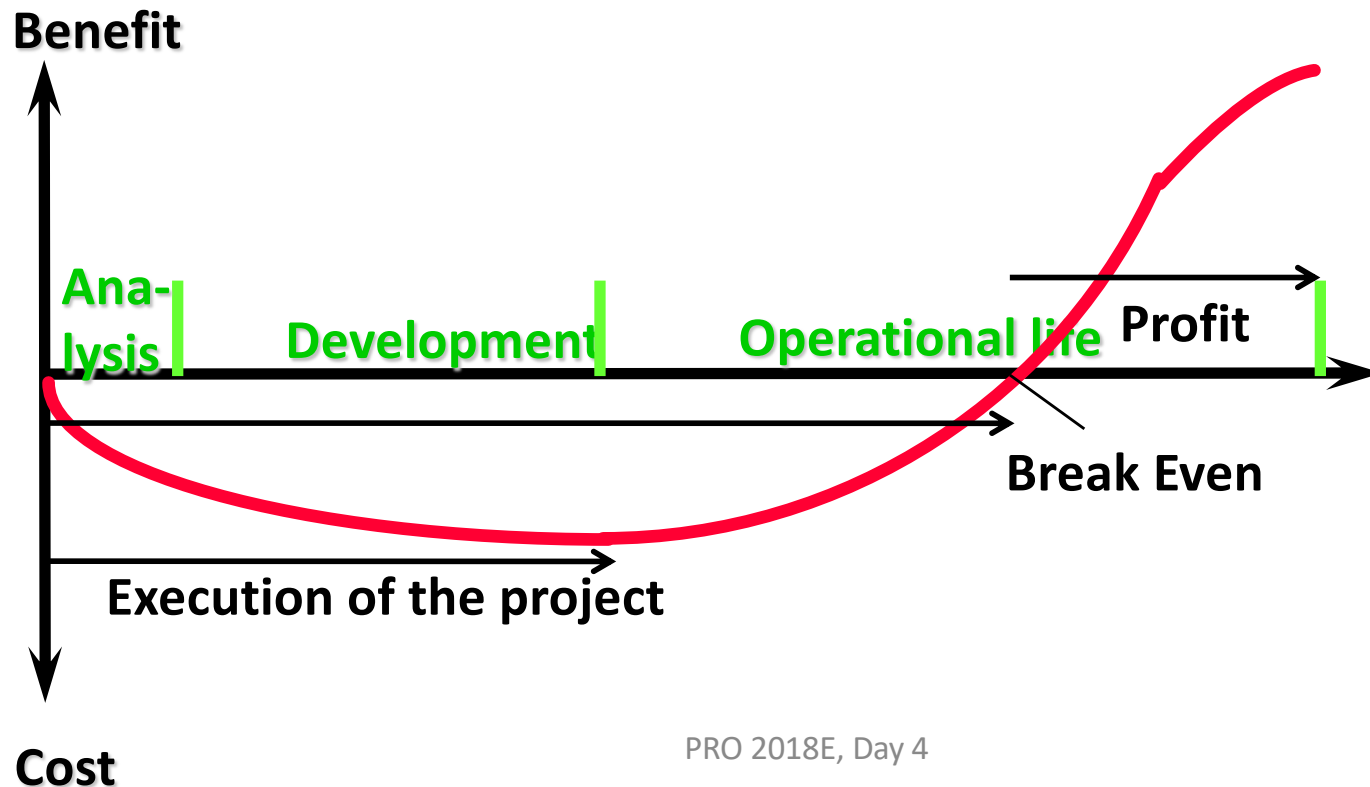
- NPV = Net present value

$$NPV = PV * (1+r)^{-n}$$

PV = the amount that is to be carried back (discounted)

n = number of payments

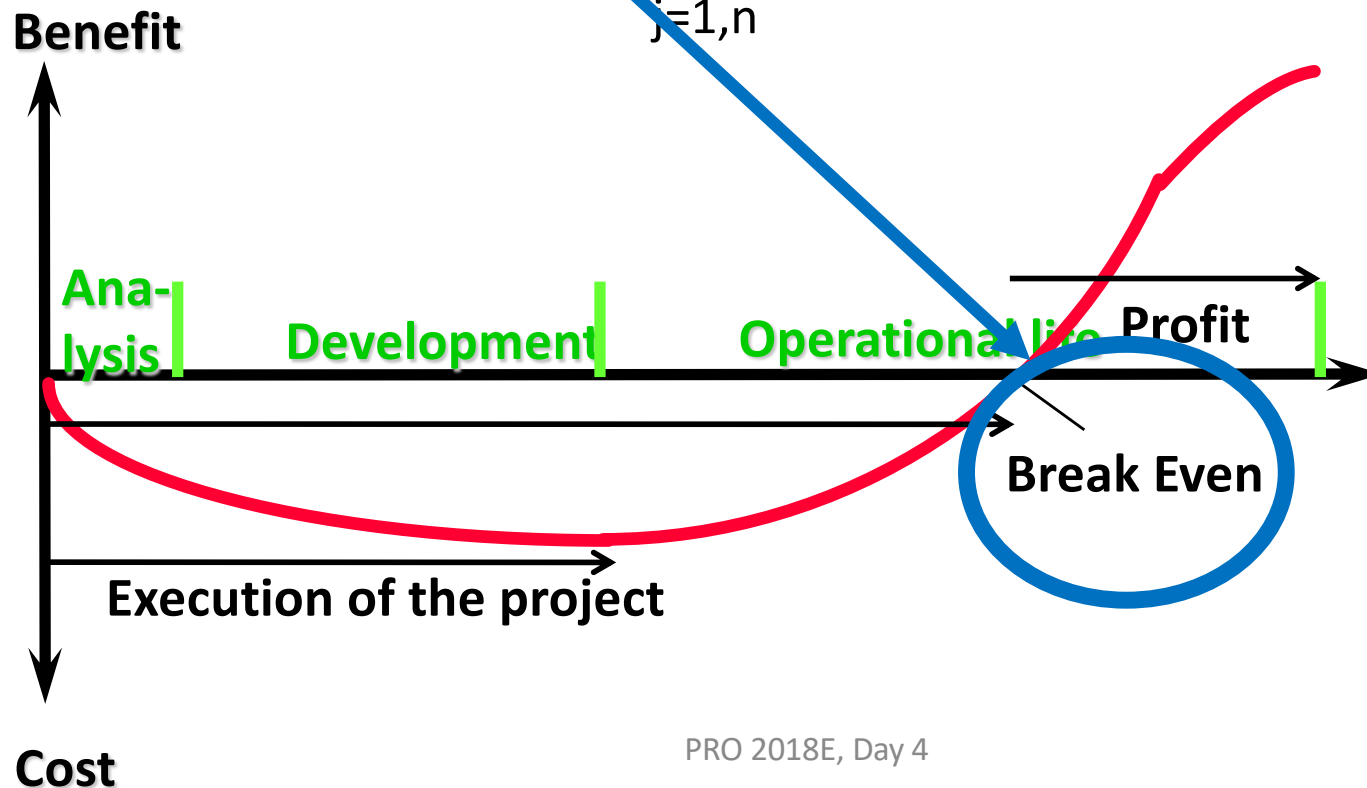
r = discount interest rate



# IRR analysis

- IRR = Internal rate of return
  - The internal interest on the capital invested
- The interest rate that gives a value in use of 0 i.e:

$$\text{Investment} = \sum_{j=1,n} (\text{Revenue}_j * (1+\text{IRR})^{-j})$$



# CBA example

## Net present value:

Year	Investment	Profit	Discount factor	Net present value
0	- 700,000.00	0		- 700,000.00
1	0	500,000	$(1 + 0.20)^{-1} = 0.833$	416,666.67
2	0	400,000	$(1 + 0.20)^{-2} = 0.694$	277,777.78
3	0	300,000	$(1 + 0.20)^{-3} = 0.579$	173,611.11

Value in use = - 700 + 417 + 278 + 174 = 169

*Kousholt (2012e: 173)*

## Internal Rate of Return:

$$700 = 500 * (1+IRR)^{-1} + 400 * (1+IRR)^{-2} + 300 * (1+IRR)^{-3}$$

Gives an IRR of app. 36% over 3 years

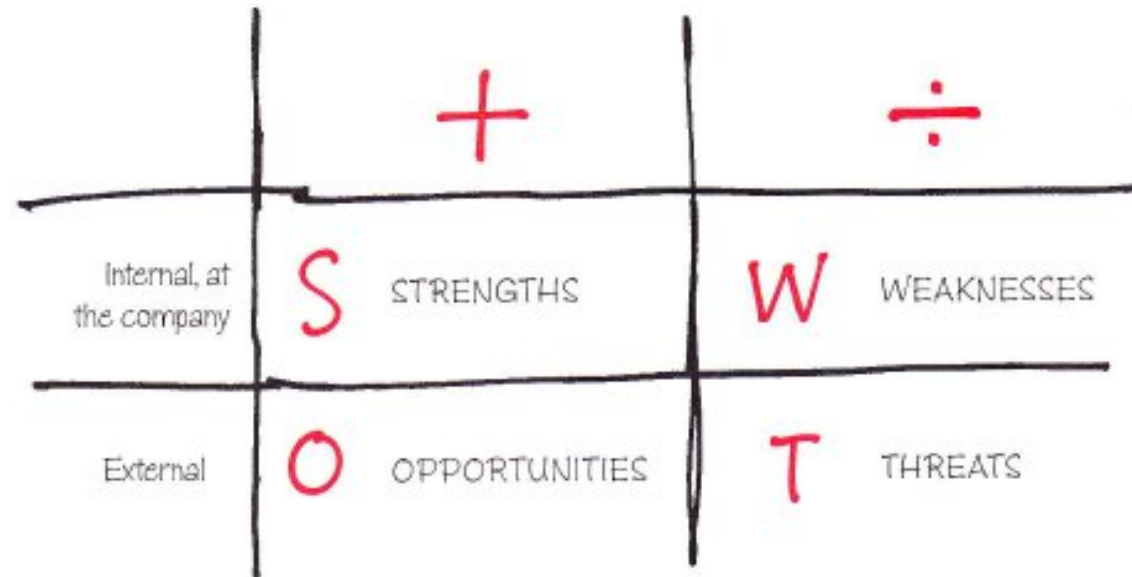
# Sensitivity analysis

- How sensitive is the project to any uncertainties and changes in circumstances?
- All cost and benefit items must be analyzed under varying conditions e.g:
  - increased man-hours
  - delays
  - decreased sales price

# SWOT analysis

Simple and preliminary risk analysis

- Do we have the right skills
- Do we have the necessary resources
- What is the potential for the product
- What competition is out there



Note:

SWOT does not replace a regular risk analysis

*Kousholt (2012e: 216)*

See examples in Kousholt (2012e: 218 & 298)

# Exercise 1: Cost-Benefit Analysis



- Talk together in pairs
- (Re)read the SAP case description in Kousholt (2012e: 44 & 52)
- Costs:
  - Identify relevant costs
  - Reflect over what kind of data are needed to quantify each of them
- Benefits:
  - Identify relevant benefits
  - Reflect over what kind of data are needed to quantify each of them
- Sensitivity:
  - In what areas will the project be sensitive to uncertainty or changed conditions
- Summary in the plenary