

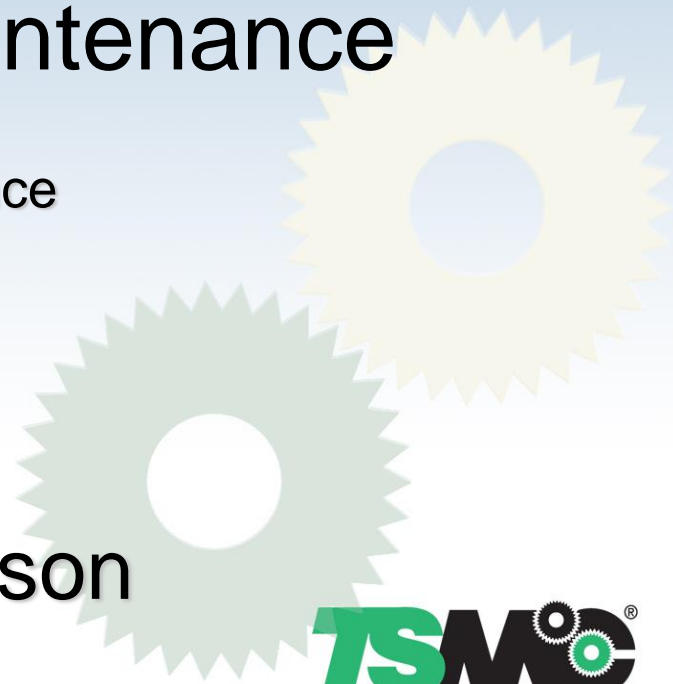


Life Cycle Costing in Asset Management and Maintenance

Omaintec Conference

October 2019

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Life Cycle Cost – Examples



Wind Turbine:
Maintenance cost is
approx. 1/3 of the
Life Cycle Cost

AC motor:
Acquisition cost 2 – 4 % of
the Life Cycle Cost





Life Cycle Cost – Life Cycle profit

Agenda:

- What is Life Cycle Cost?
- Definitions and interest rate calculation
- Iceberg models
- Exercises

Closing of the workshop



Net Present Value

Definition 1:

Net Present Value is all the costs and income from an asset, or an investment referred back to the year of investment

Objectives for a Life Cycle Cost Analysis

Life Cycle cost is a process for:

- Comparing difference alternatives for an investment
- Identification of expected future cost for operation and maintenance in the life cycle of the investment
- Impact the expected future cost for operation and maintenance

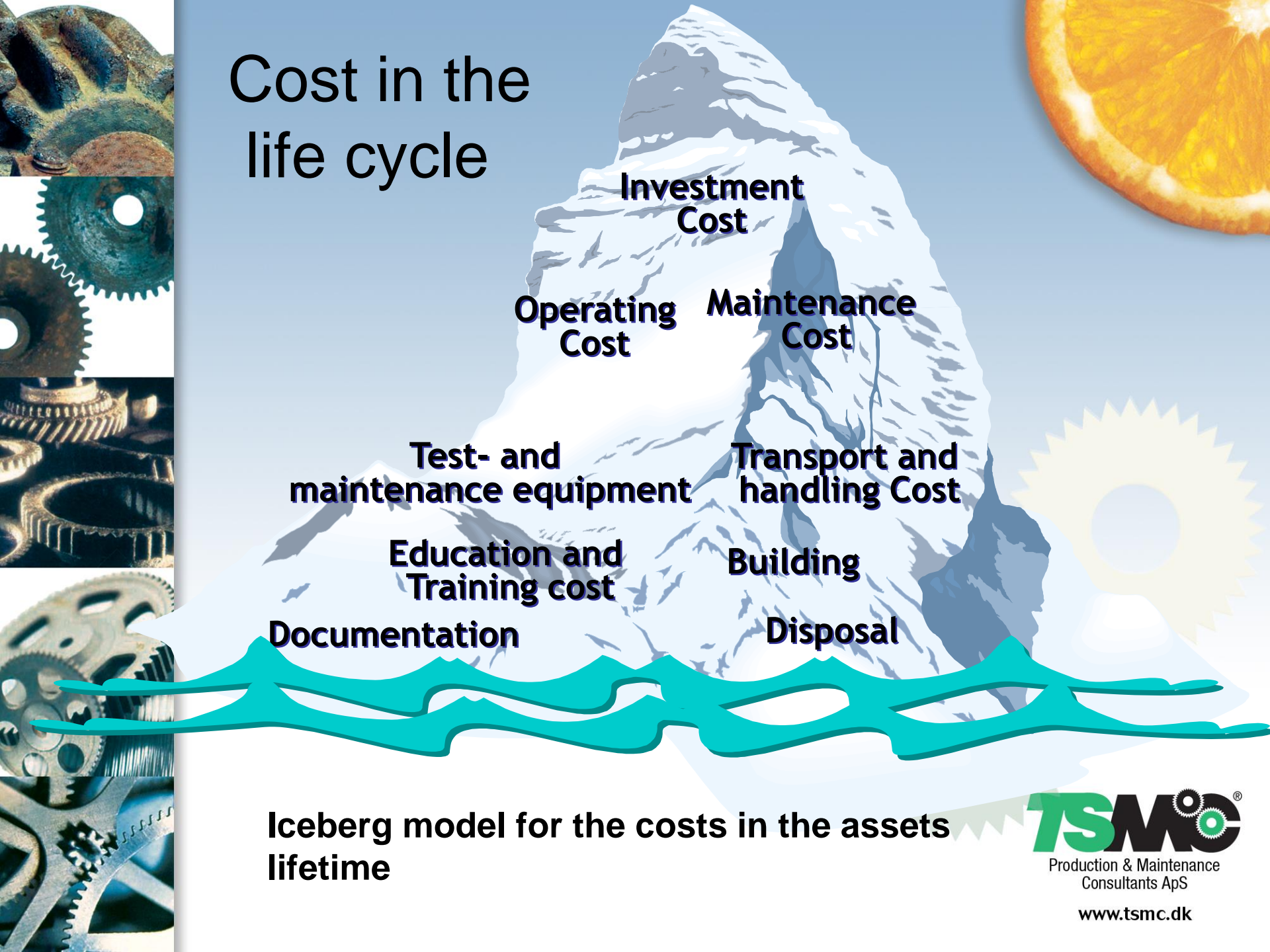
Life Cycle Cost, Turbine - 20 Years		
Sum investment in maintenance	DKK	945.000
CYM Sum annual maintenance cost	DKK	5.607.995
Sum disposal cost - Maintenance adjustment Y1 and 2	DKK	-
Sum Operating cost	DKK	-
Sum Modifications	DKK	-
Sum Downtime costs - lost margins	DKK	26.918.374
Total Life Cycle Cost	DKK	33.471.369

Cost in the life cycle



Iceberg model for the costs in the assets lifetime

Cost in the life cycle



Iceberg model for the costs in the assets lifetime



Scope for a LCC/LCP Analysis

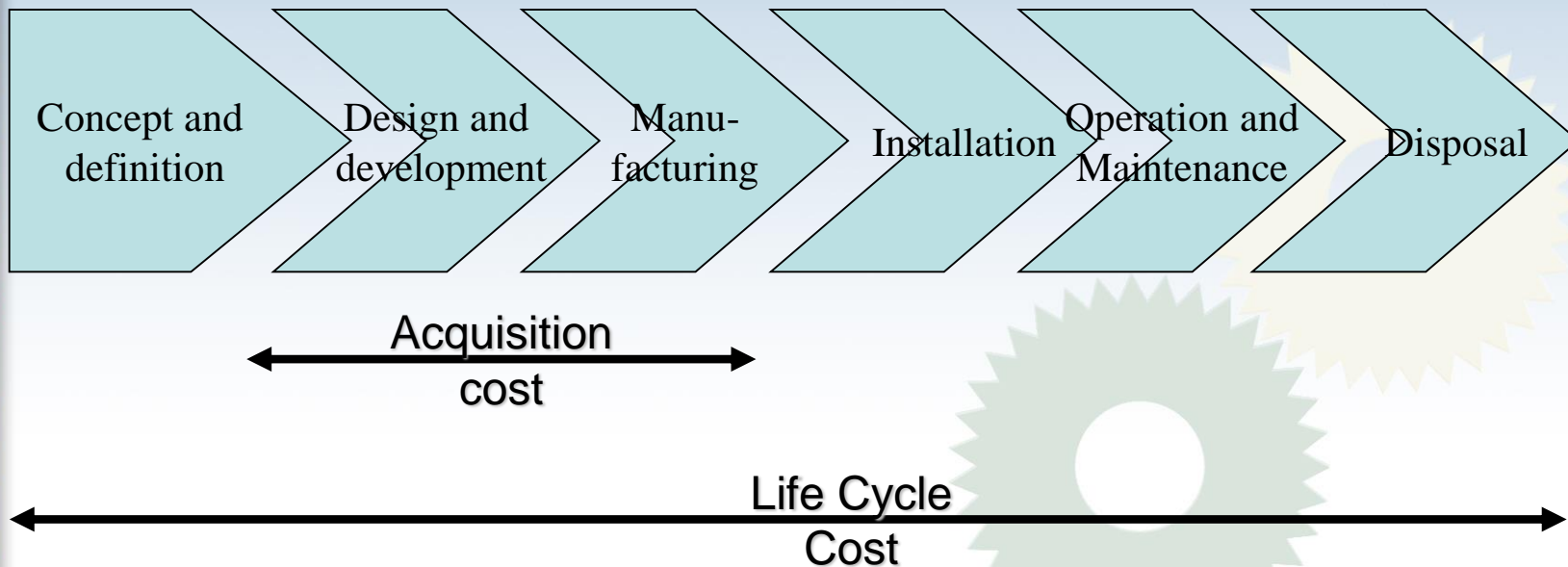
Example 1:

LCC/LCP scope:

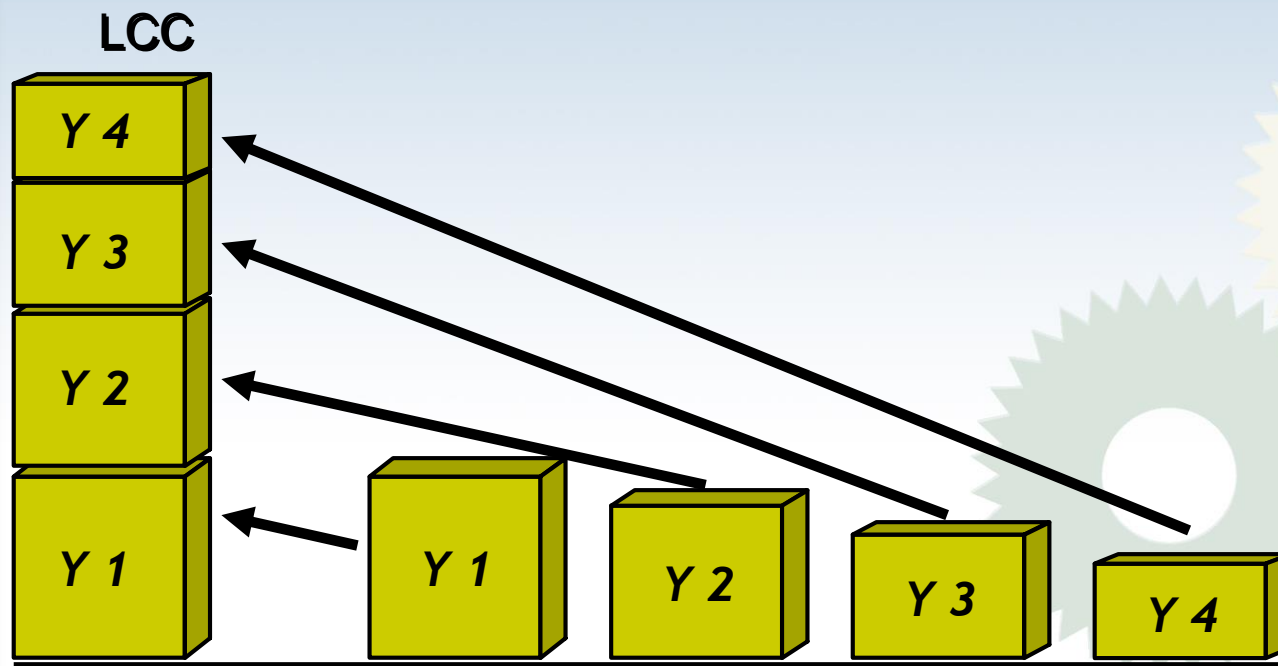
1. Investment – Capital
2. Annual Maintenance cost
3. Annual operating cost
4. Annual fixed cost
5. Disposal cost
6. Annual income - or losses

Every LCC(LCP analysis must describe and define the terms used by the company

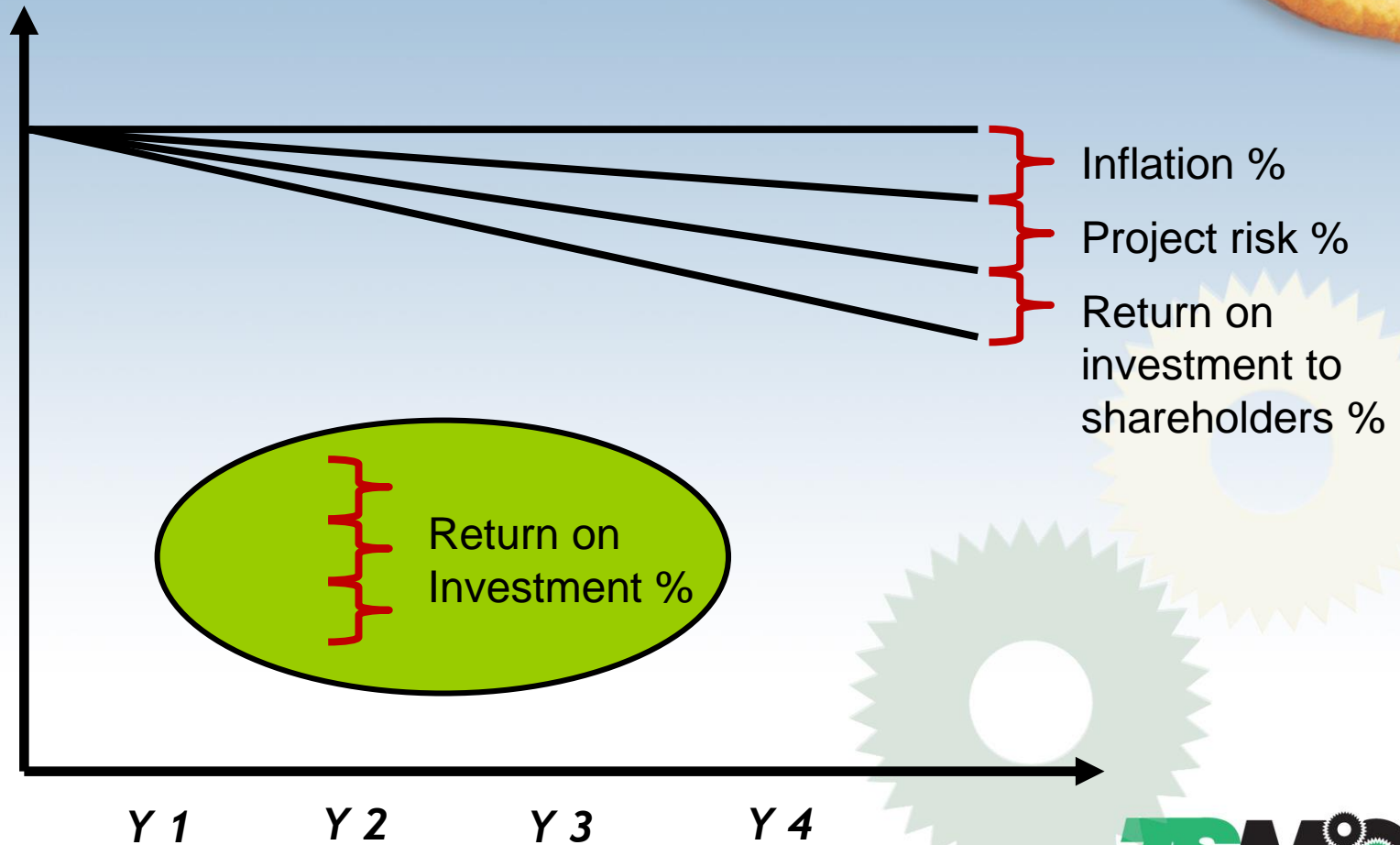
Life Cycle Cost



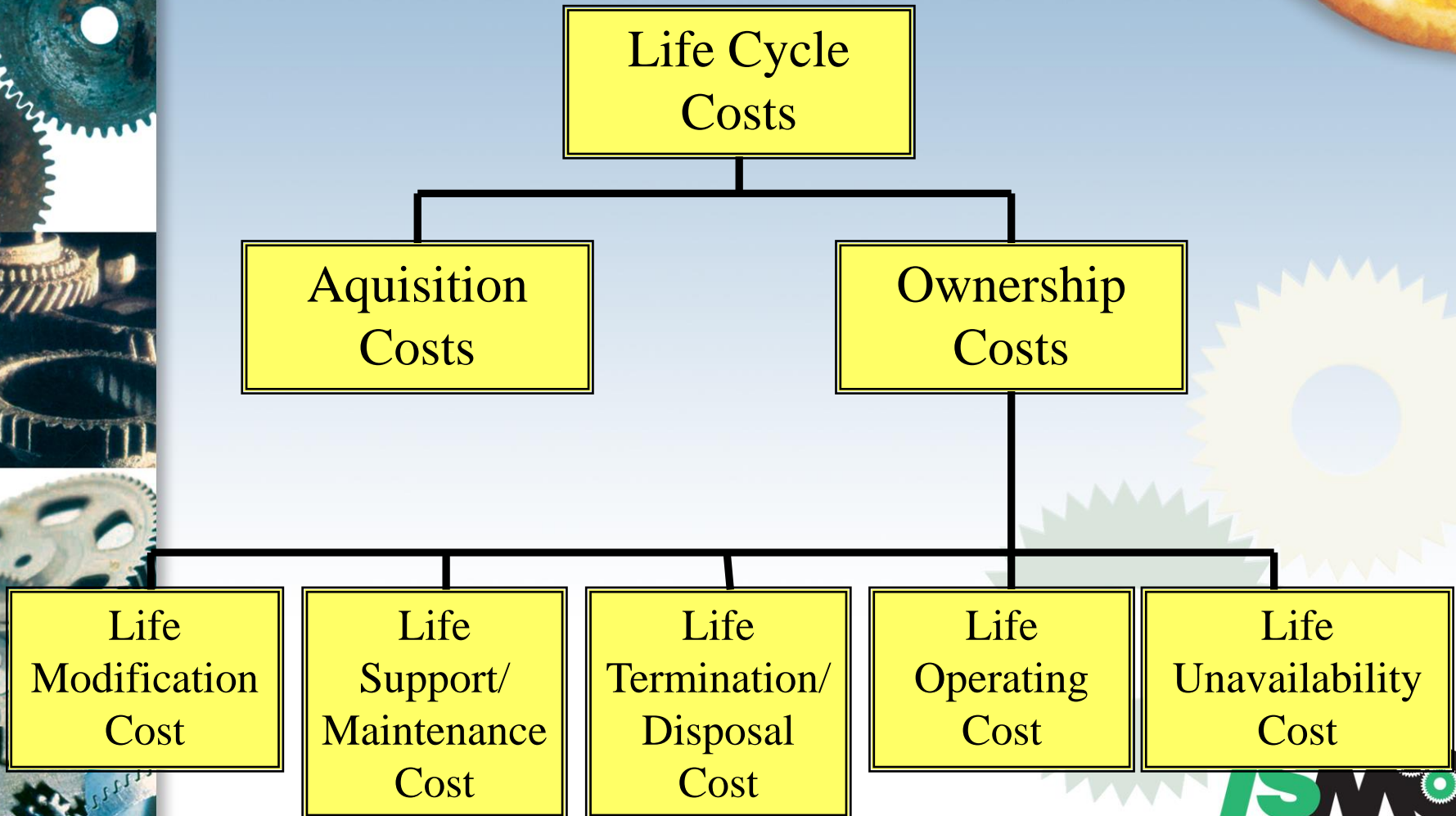
"Net Present Value is all the costs and income related to an asset or investment referred back to the year of investment!"



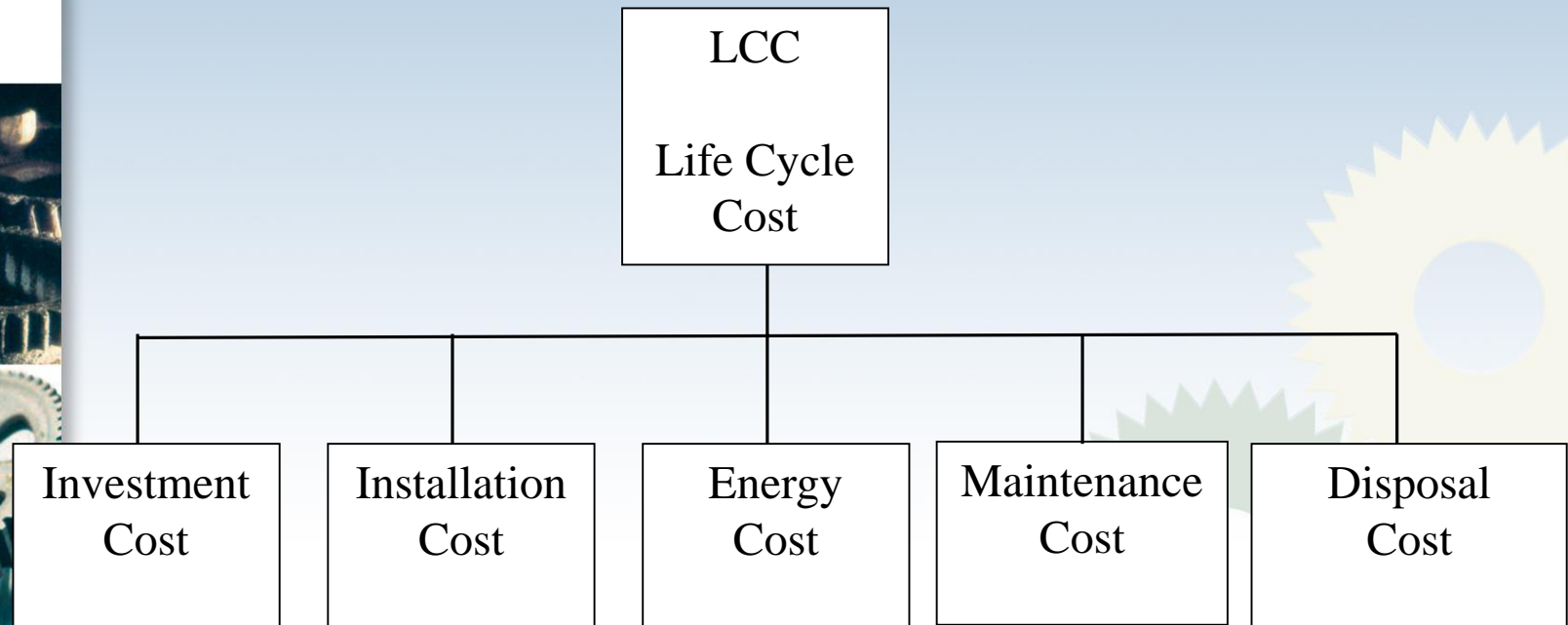
Company interest rate



LCC model



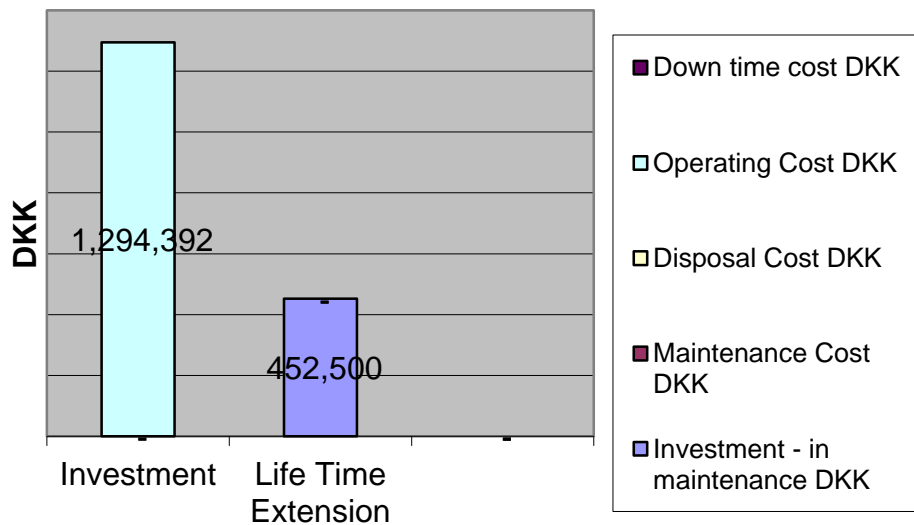
LCC model example



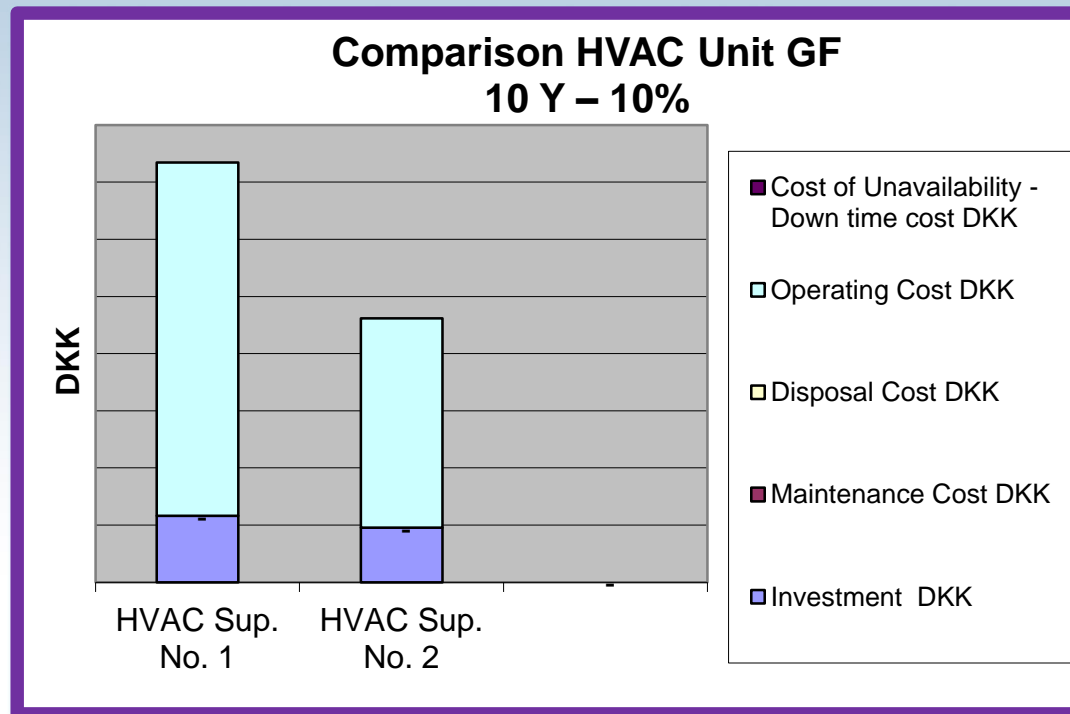
Life Time Extension Passenger bridge



Sammenligning investering



Investment in a HVAC Unit for a Pharmaceutical unit



Thanks for your attention!



Question and comments?

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