

The logo for Asia Eco-Design Electronics (aeede) features the lowercase letters 'aeede' in a green, sans-serif font. To the left of the text is a light green map of the Asian continent. Below the text, the full name 'asia eco - design electronics' is written in a smaller, lowercase green font.

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Eco-Design - Lessons from industry

Asia Eco-Design Electronics

10th April 2006

Emerald Hotel

Bangkok, Thailand

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Environmental Technology and Management

Linköping University, Sweden

- Concepts for environmental sustainability**
- Life Cycle Thinking
 - Life Cycle Management
 - Design for Environment
 - Cleaner Technology
 - Dematerialization
 - Eco-efficiency
 - Industrial Ecology
 - End-of-Life Management
 - Others

Decision process

- Analytical tools**
- | | |
|---|---|
| <p>Based on physical metrics</p> <ul style="list-style-type: none"> • Life Cycle Assessment (LCA) • Material Flow Accounting / Substance Flow Analysis (MFA/SFA) • Material Intensity per Service unit (MIPS) • Cumulative Energy Requirements Analysis (CERA) • Environmental Input / Output Analysis (IOA) • Environmental Risk Assessment (ERA) • Checklists for Eco-design, eco-audit • Others | <p>Based on non-physical metrics</p> <ul style="list-style-type: none"> • Market analysis • Regulatory assessment • Stakeholder analysis • Issue analysis • Socio-economic assessment • Life Cycle Costing (LCC) • Total Cost Accounting (TCA) • Cost Benefit Analysis (CBA) • Input / Output Analysis • Partial equilibrium models • Optimization models • Applied general equilibrium models • Technology Assessment • Multi Criteria Analysis (MCA) • Others |
|---|---|

- Procedural tools**
- Environmental Management System (EMS)
 - Environmental Audit
 - Environmental Performance Evaluation
 - Environmental labeling
 - Eco-design
 - Environmental Impact Assessment
 - Green procurement
 - Voluntary agreements
 - Quality management system
 - Total Quality Environmental Management
 - Others

- Technical elements**
- | | | |
|--|--|---|
| <ul style="list-style-type: none"> • Allocation models • Mass balance models • Dispersion models • Fate models • Dose-response models | <ul style="list-style-type: none"> • Ecological models • Normalisation models • Evaluation models • Uncertainty analysis • Sensitivity analysis | <ul style="list-style-type: none"> • Scenario development • Idea generation techniques • Backcasting • Others |
|--|--|---|

Data

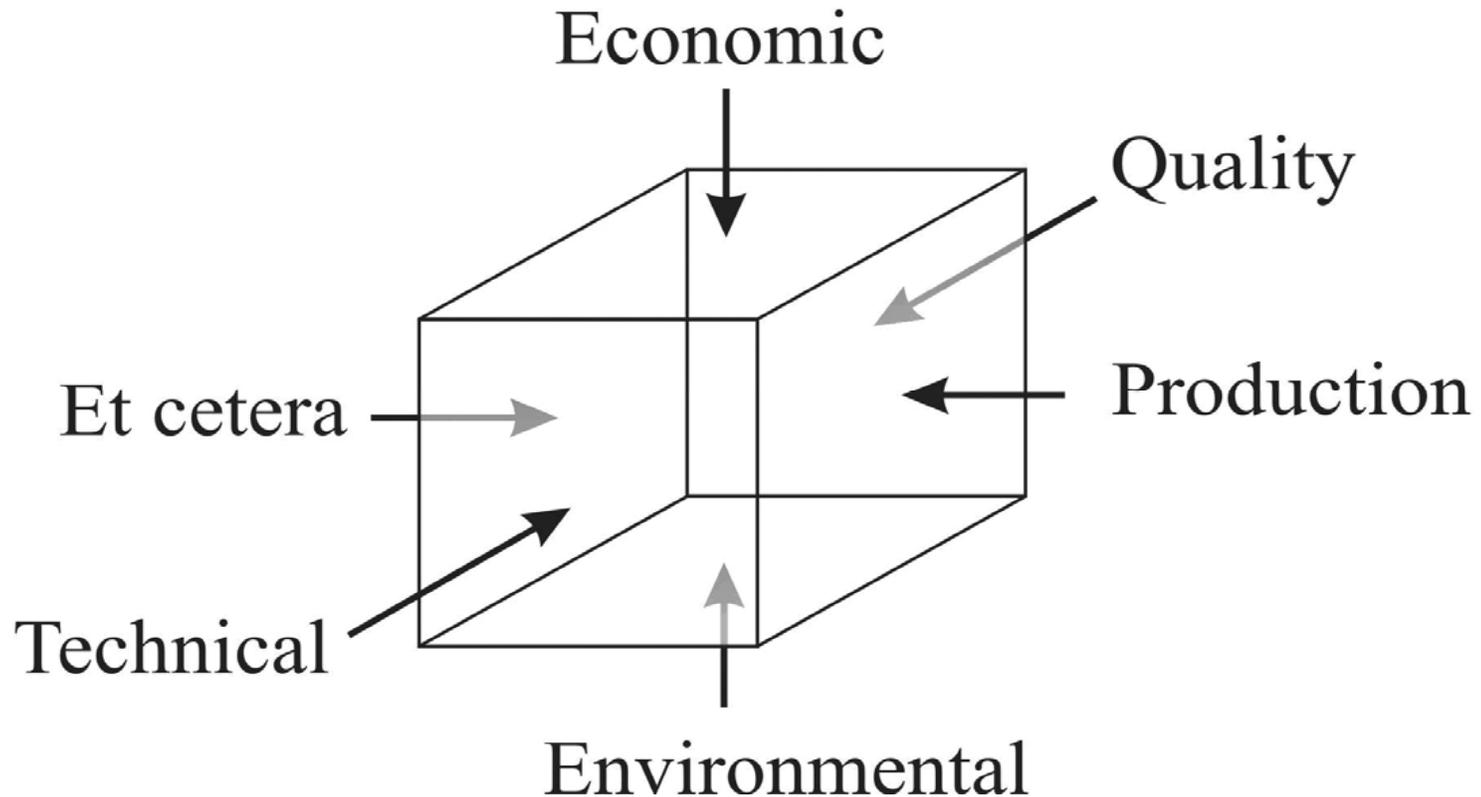


Eco-Design is ...

not a specific method or tool, but rather a way of thinking and analyzing in order to

reduce *environmental impacts* throughout the *whole product's life cycle* through *better product design*

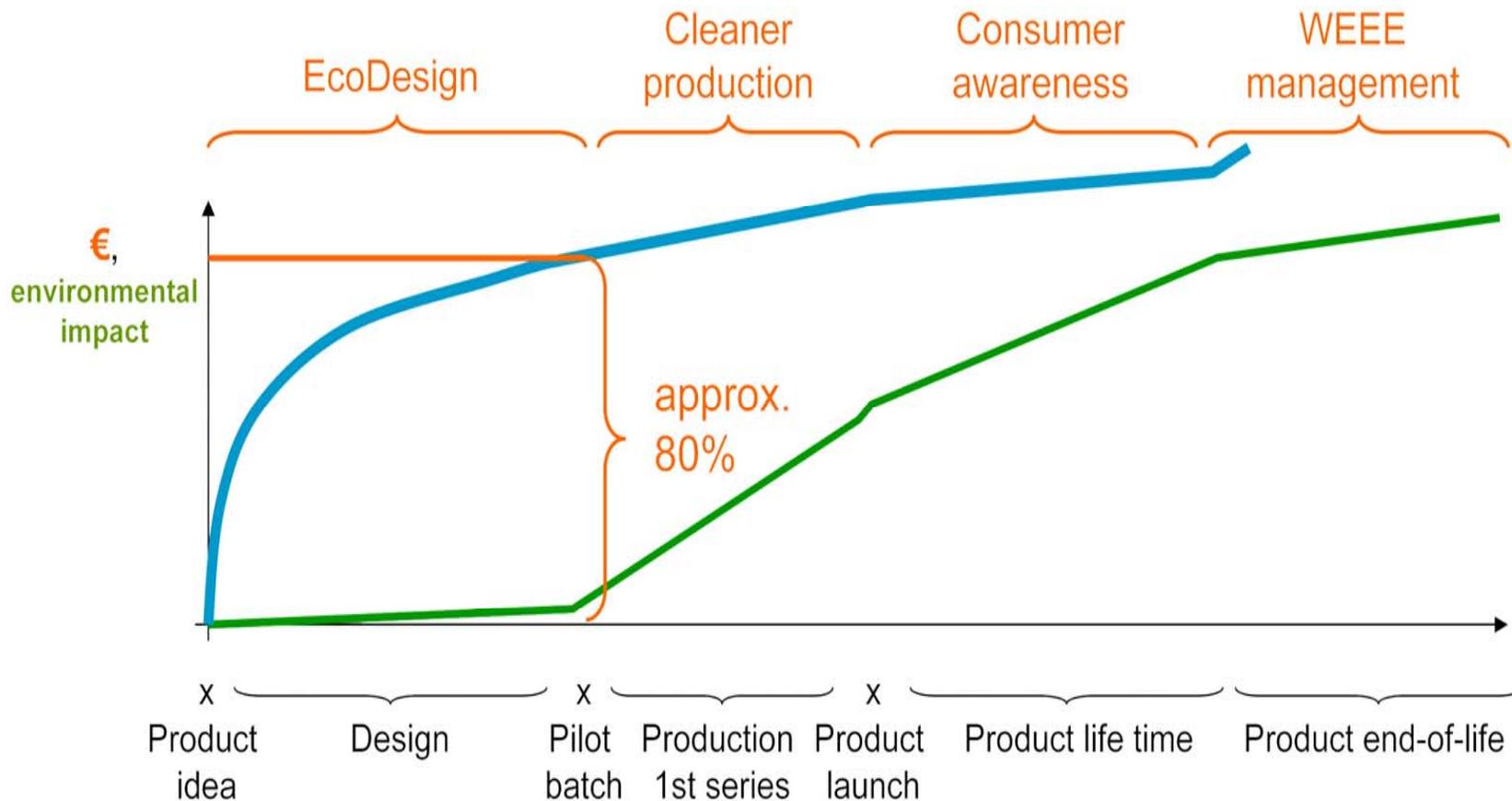
View your products and processes from a new perspective!



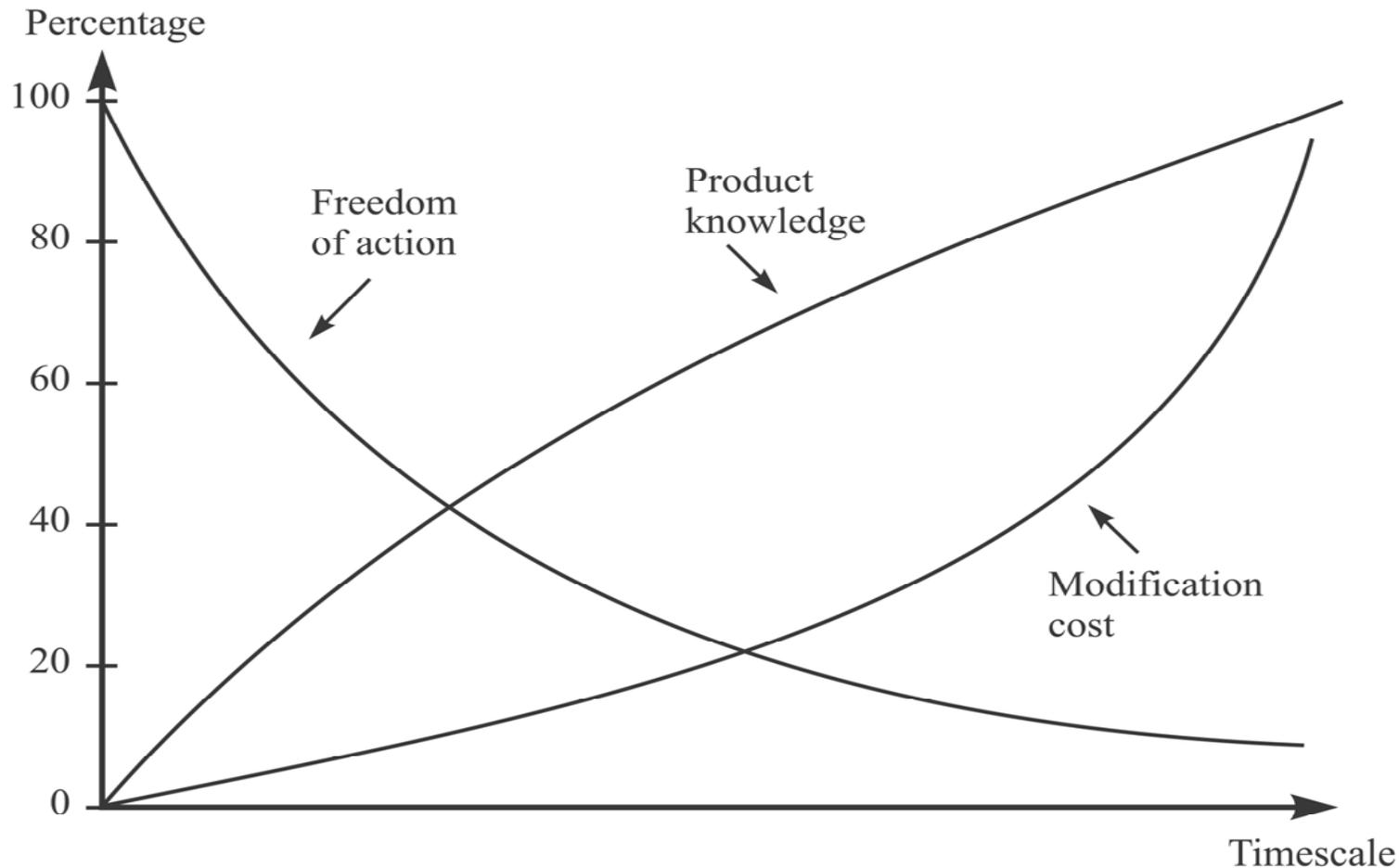
Potential benefits from EcoDesign

- Improve functionality
- Increase customer value
- Competition
- Market pressure
- Public opinion
- Customer safety
- Innovation
- Cost savings
- Risk reduction
- Employee motivation
- Eco labeling programmes
- Corporate communication
- Supply chain relationship
- Product quality
- Voluntary agreement
- Decrease the product's negative environmental impact

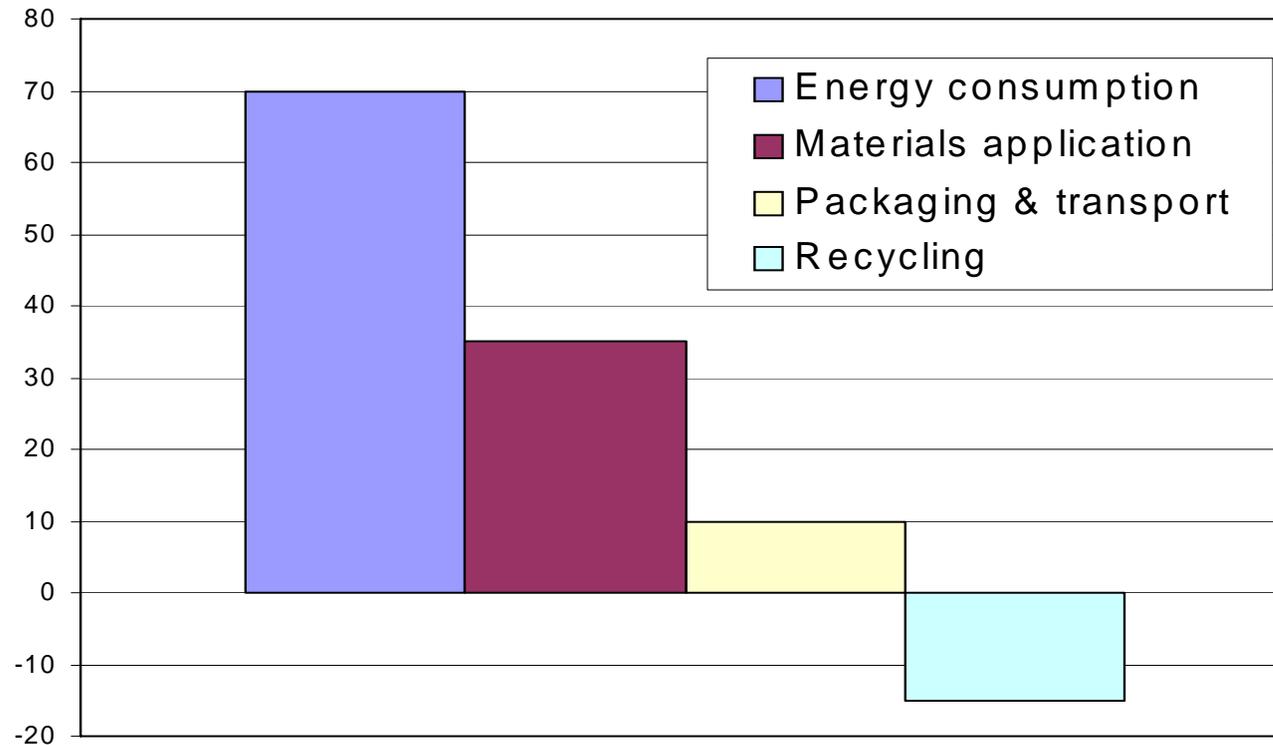
Why focus on product design?



The relation between “Freedom of Action”, “Product knowledge” and “Modification cost”



What's important to consider?



Average Environmental load in an electronic product over its life cycle.

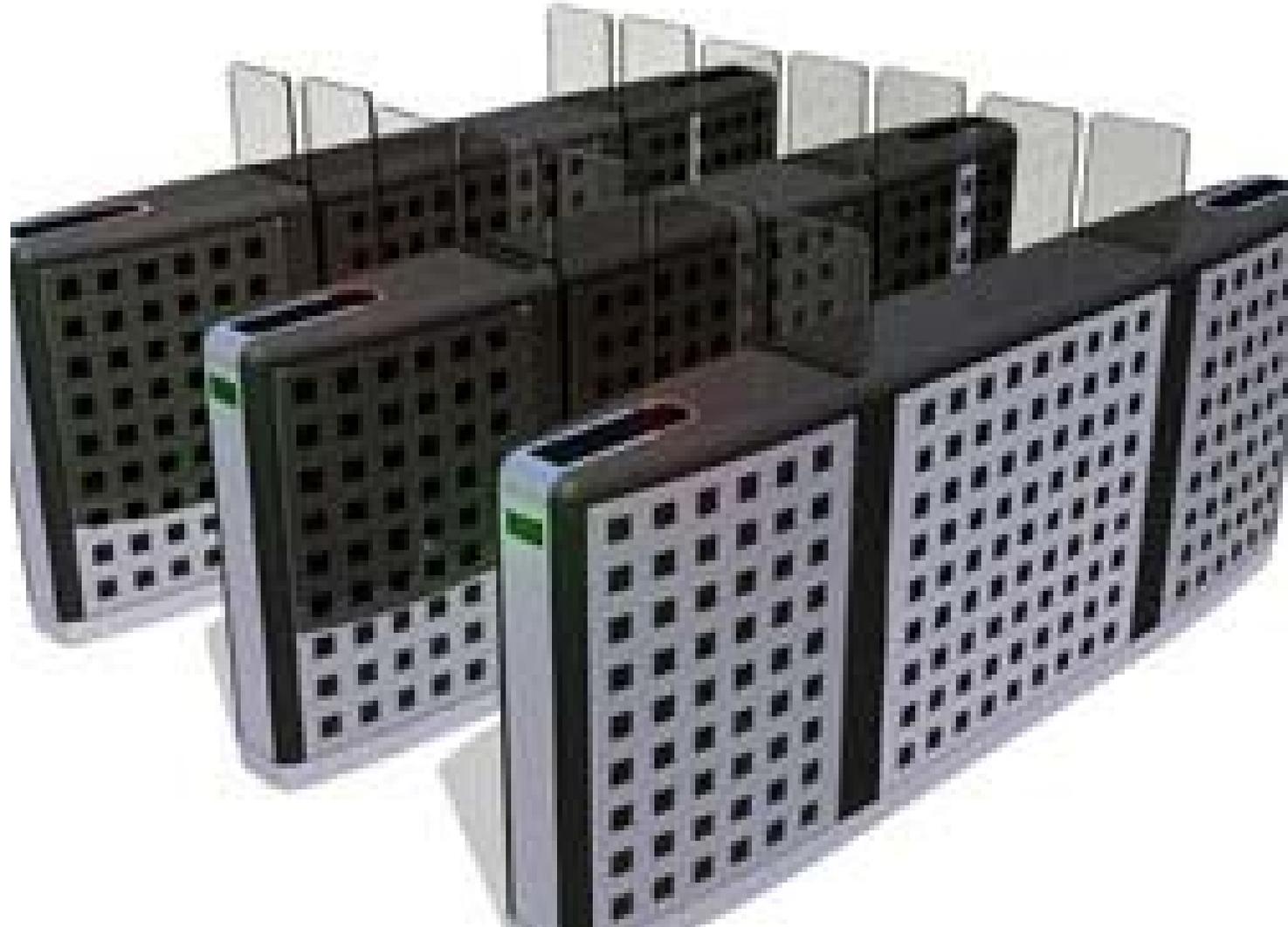
From Prof Dr Ir. Ab Stevels

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Speedgate Entrance Control

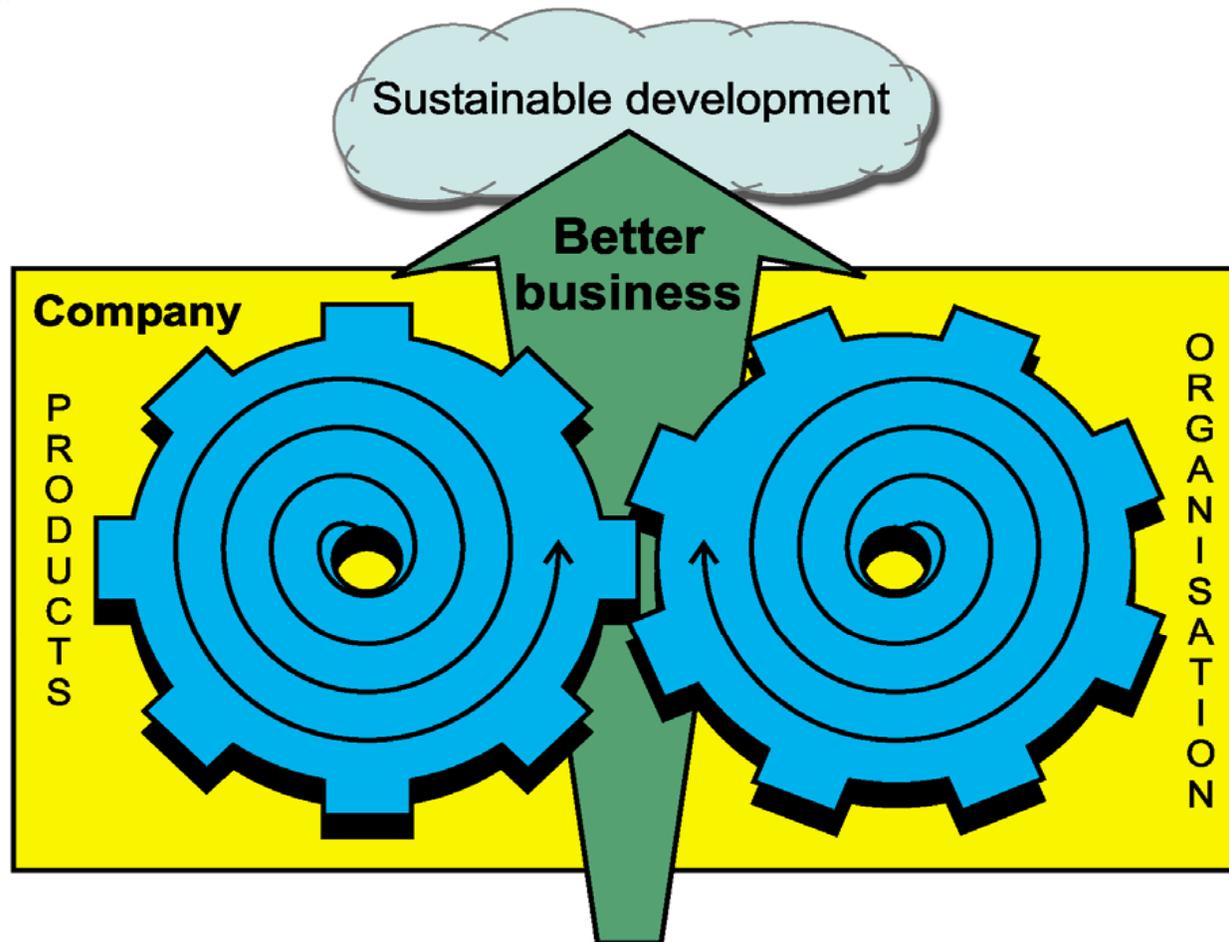
Gunnebo



Cost reduction

- Production: efficient utilities
- Products: less materials, transport, potential toxics
- Less use of auxiliaries; less variety of auxiliaries – less internal logistics
- Less packaging, weight, volume; efficient logistics
- Less environmentally relevant substances –handling of hazardous substances is costly
- Lower disassembly time – lower assembly cost
- Use of recycled material

For effective and efficient Eco-Design there is a need to consider both the operational and management level



What is important to consider when adopting and implementing Eco-Design?

- What is the need?
 - External requirements, e.g. from the customer
 - Internal requirements, e.g. from the management
 - Primary purpose for using the method or tool
- Education/knowledge about Eco-Design
- The strategy for integration and follow-up
- Economy for the adoption and implementing

Why use Eco-Design methods and tools

- Facilitate various kinds of communication within the product development process.
- Methods and tools function as knowledge and experience backups.
- Contribute with structure.

Basic requirements an Eco-Design method or tool ought to fulfill

1. Be easy to adopt and implement.
2. Facilitate designers to fulfill specified requirements on the presumptive product and at the same time...
3. ...reduce the risk that important elements in the product development phase are forgotten.
4. **Must reduce the total calendar time (from start to end) to solve the task.**

To summarize – Eco-Design

- The company must have goal and strategy for its Eco-Design work.
- Must be considered as an integrated part of the company's operation.
- Environmental-related requirements must be handled together with other product requirements.
- Methods and tools must be easy to adopt and implement.
- The Eco-Design work must be followed-up.



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Aim with the following workshop

- Bring in your needs, questions, and points of view

Thank you for your attention!

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For more information:

