



Introduction to Korean Eco-efficiency Activities

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Overview of Eco-efficiency Activities in Korea



Driving Forces in Korea

Eco-2 Project

Fostering both environment and economy

Environmental Labeling

Encouraging communication for sustainable consumption

Research Activities

Developing methodologies and pilot projects

Corporate Voluntary Practices

Experimenting eco-efficiency as a management tool for competitive advantages

Best Practices around the World

Leading development in the field; WBCSD, NRTEE, Wuppertal Institute, JEMAI, etc.



Environment Economy



Eco-2 Project

Regarding corporate environmental management...

- Environmental Reporting
- Environmental Performance Evaluation
- Environmental Declaration of Products
- Environmental Accounting, etc.

→ This provokes the needs of mutual growth of economic and environmental performance in Korean industries.

Eco-2 Project

- Launched in 2001, seeks to achieve both environmental conservation and economic development goals in a unified manner.
- Key components include
 - developing environmental industry and technology,
 - strengthening resource conservation and recycling,
 - applying demand-side water management,
 - enhancing the environmental information infrastructure, and
 - creating a sustainable development indicator.

Source: Korean Ministry of Environment, 2001

Environmental Labeling

- Environmental Declaration of Products (Type III) since 2001
 - Provides quantified environmental information on the life cycle of a product
 - With an aim to facilitate market-driven environment protection and improvement
 - Ongoing discussion on EE labeling programs into the revision of the law "Promotion of environmentally sound industrial structure"
- This sheds lights on the future of EE as one of product labeling measures.

Environmental Declaration of Products

- 255 certified products from 8 companies (Samsung electronics, LG electronics, etc.)

→ Report of EDP



LC370W01

Certificate Reg. No. : EMC-2004-006
Product Group : TFT-LCD Module
Manufacturer : LG, Philips LCD, Co., Ltd.
Valid Period : 2004, 10, 29 ~ 2007, 10, 28
Certification Agency : Environmental Management Corp...



<http://www.edp.or.kr>

Source: Korean Ministry of Environment, 2005



Research Activities

- Clean production index
 - To utilize gate-to-gate approach
- Green productivity index
 - To help establish strategy for enhancing productivity and environmental performance
- Eco-efficiency of plastic waste recycling
 - To enable decision makers to select the most environmentally friendly and economically efficient alternative

→ This encourages methodological development and provides up-to-date information to Korean industries.

- Green productivity index

$$\text{GP Index} = \frac{\text{Selling Price/LCC}}{\text{EI}}$$

- Eco-efficiency of plastic wastes recycling
 - Utilize the value by cost-benefit analysis and eco-cost from LCA result

$$\text{EE Indicator} = \frac{\text{Value}}{\text{Eco-cost}}$$



Corporate Voluntary Practices

Eco-efficiency index as..

- Key sustainability indicators disclosed in sustainability/environmental reports
- An evaluation tool for the product design and R&D

→ In the stage of finding values of the eco-efficiency as a management tool

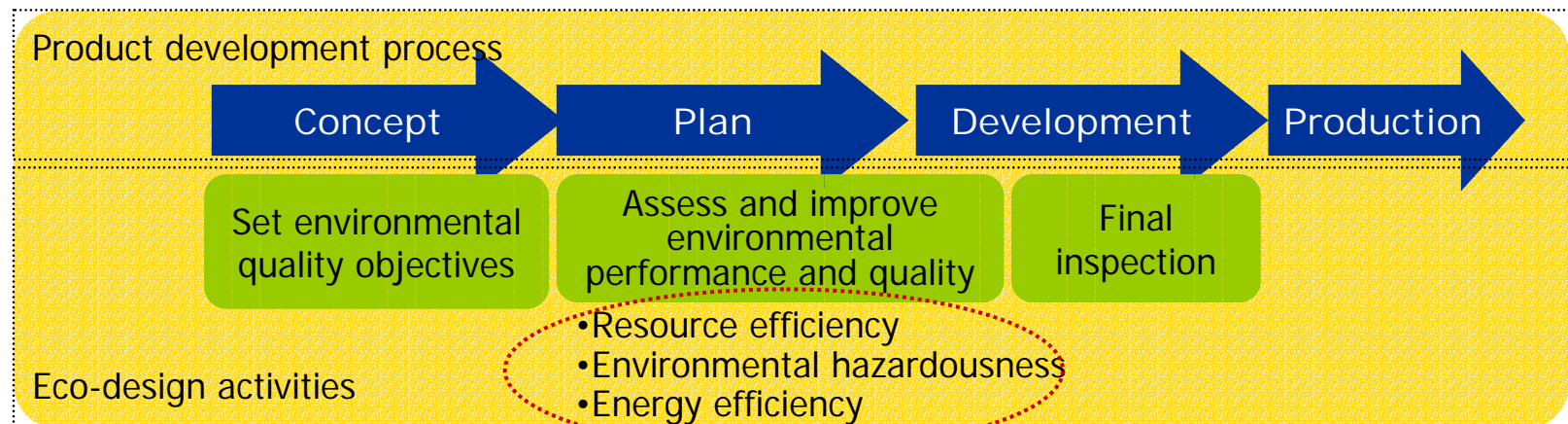
An environmental manager in certain Korean company said...

"We as a company are to maximize the profit from the products and, at the same time, minimize the environmental risk.. Therefore we seek "what is optimal for us" by monitoring the eco-efficiency of our firm"

Corporate Voluntary Measures

SAMSUNG

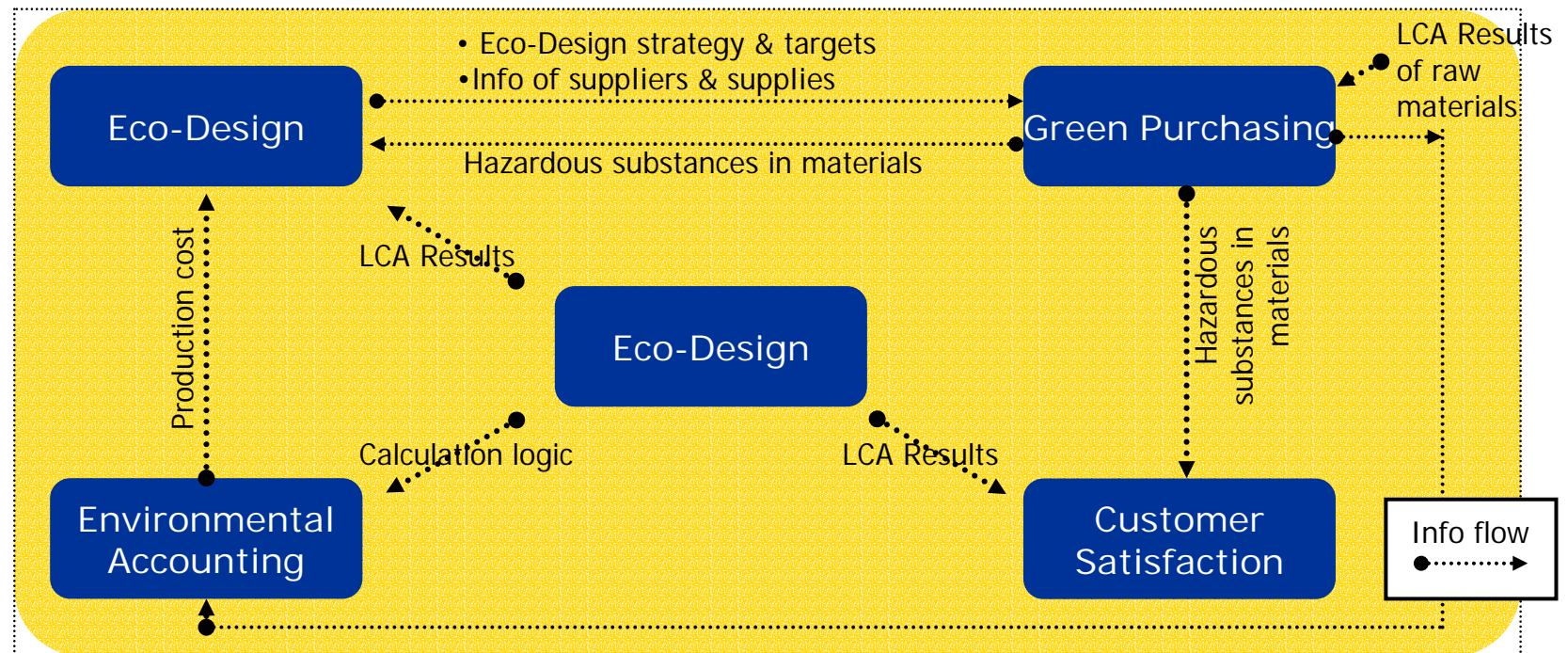
- Eco-efficiency information is utilized in Eco-design process in order to determine and improve environmental quality at product development process.
- Applied to some printer and refrigerator models in 2004
- Expected to be in force for all new product development from 2006



Corporate Voluntary Measures

SAMSUNG

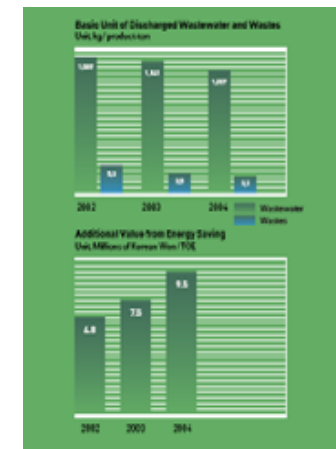
- LCA and Environmental Accounting module as parts of the Eco-design system



Driving Forces: Voluntary Measures



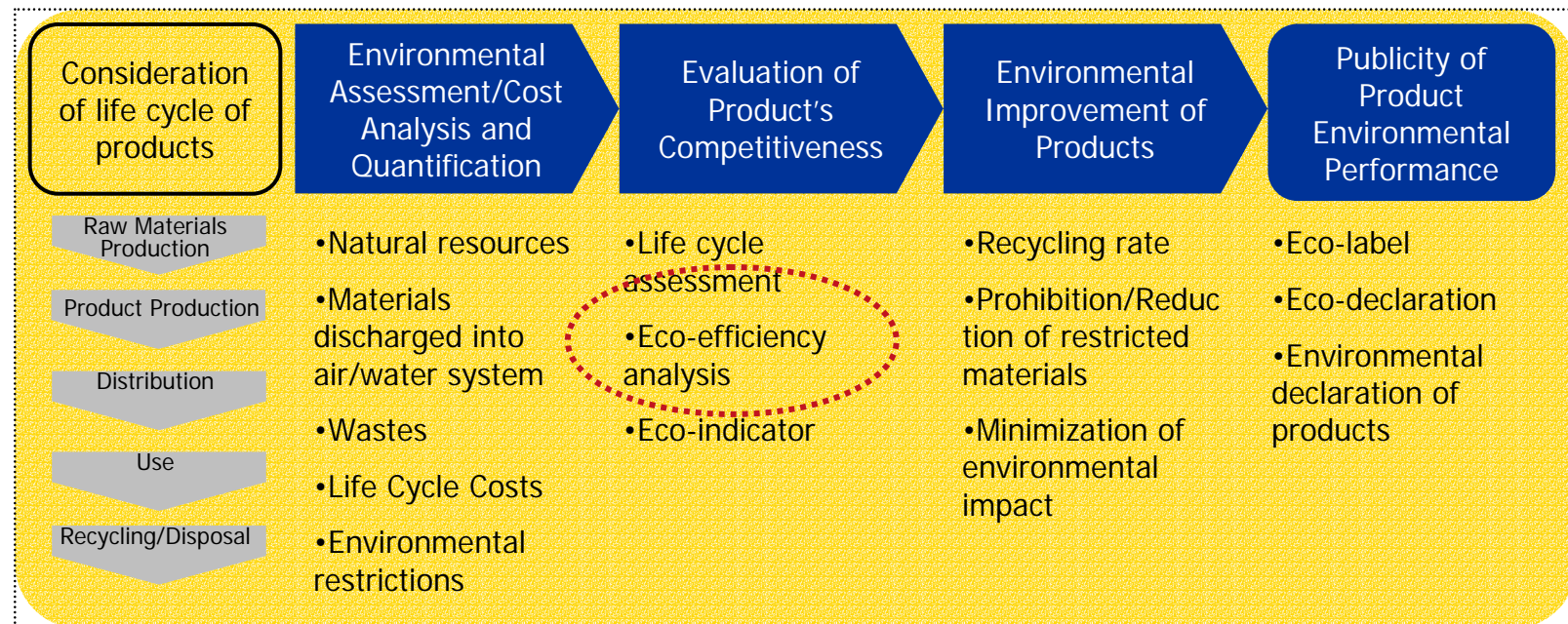
- Annual disclosure of resource output efficiency and additional value from energy saving in the environmental report



Driving Forces: Voluntary Measures



- Eco-efficiency analysis as a part of developing process of new eco products
- LCA and Production Cost estimation are applied to the analysis.





Development and Diffusion of Eco-efficiency Indicators and S/W



Project Description

Title

Development & Diffusion of
Eco-Efficiency Indicators and S/W

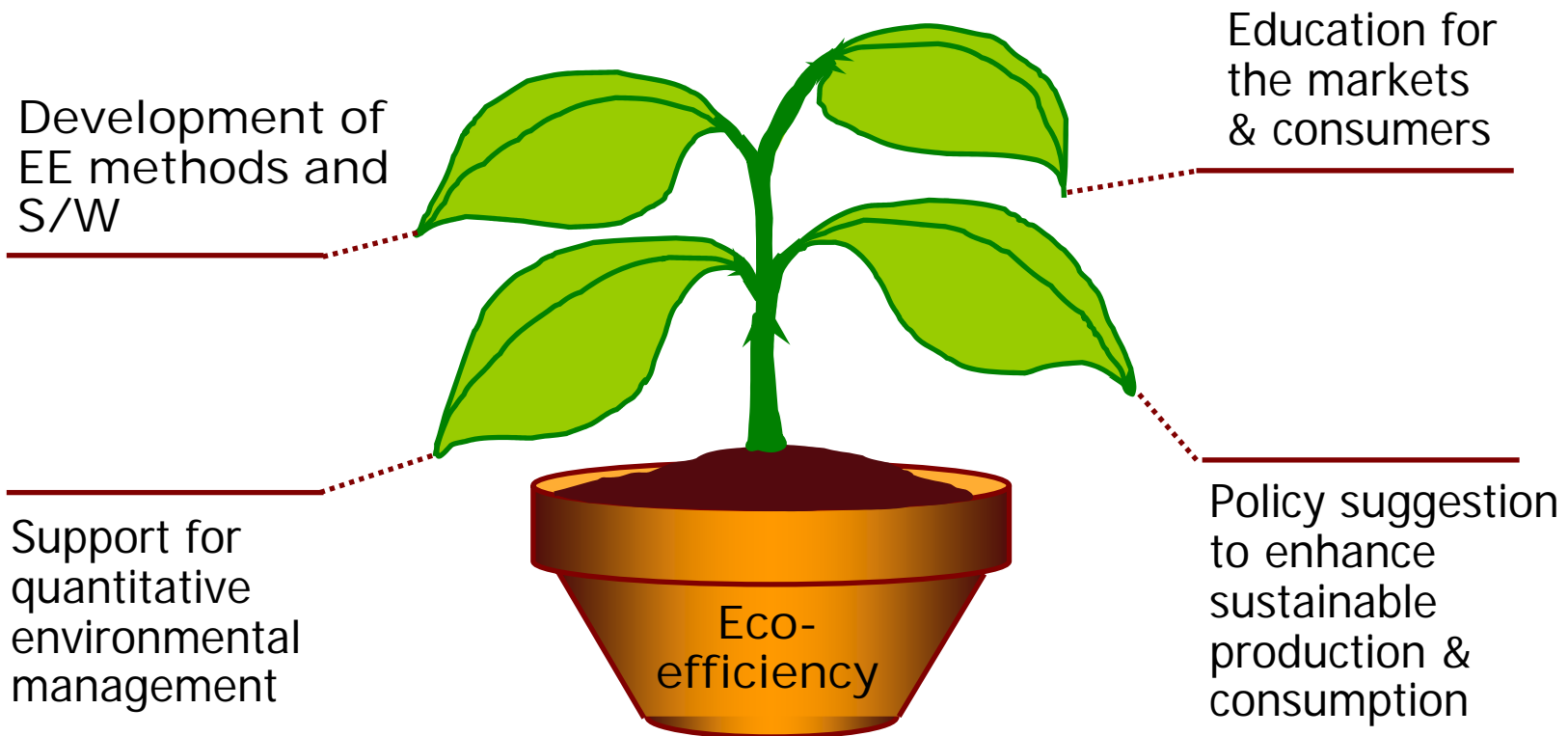
Period

2004. 4 ~ 2007. (3-year project)

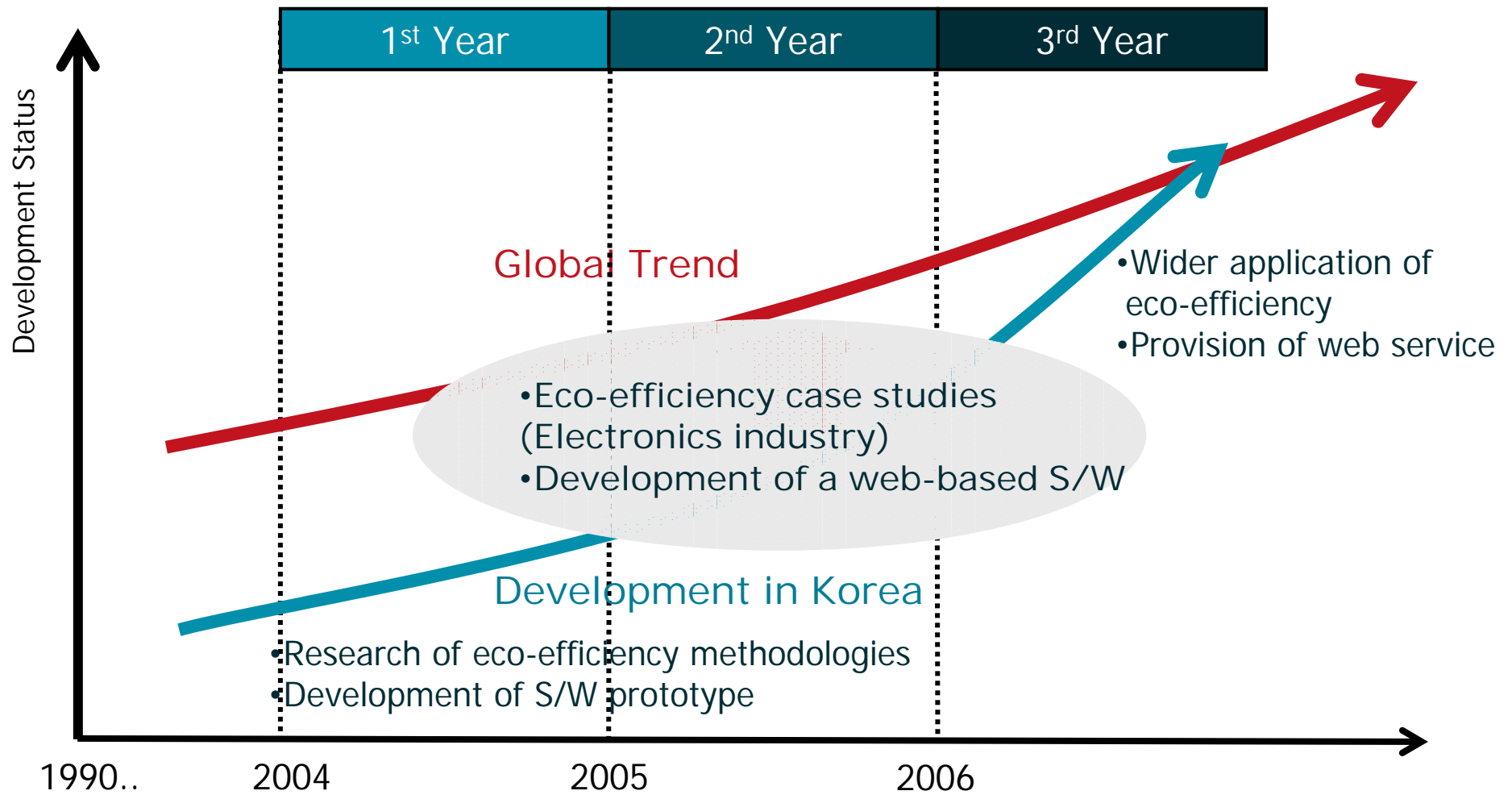
Researchers

Eco-Frontier & Konkuk University

Expected Outcomes



Project Stages





Major Tasks in 2nd Year

1

Development of eco-efficiency methods

Development of eco-efficiency measurement model which is applicable to the electronics industry

2

Development of case studies

Development of eco-efficiency measurement cases in the electronics industry (at corporate/product level)

3

Development of S/W

Development of web-based S/W to assist companies along the way to establish its own eco-efficiency model

4

Dissemination of eco-efficiency concept

Training and education of corporate managers in electronics industry



InStep EE: Toolbox Approach

- Various types of eco-efficiency index

Process & Product

Cost

E.I

Value Added

E.I

Cost

LCA(w)

Value Added

LCA(w)

Service Value

LCA(w)

Site & Company

Volume

E.I

Sales

E.I

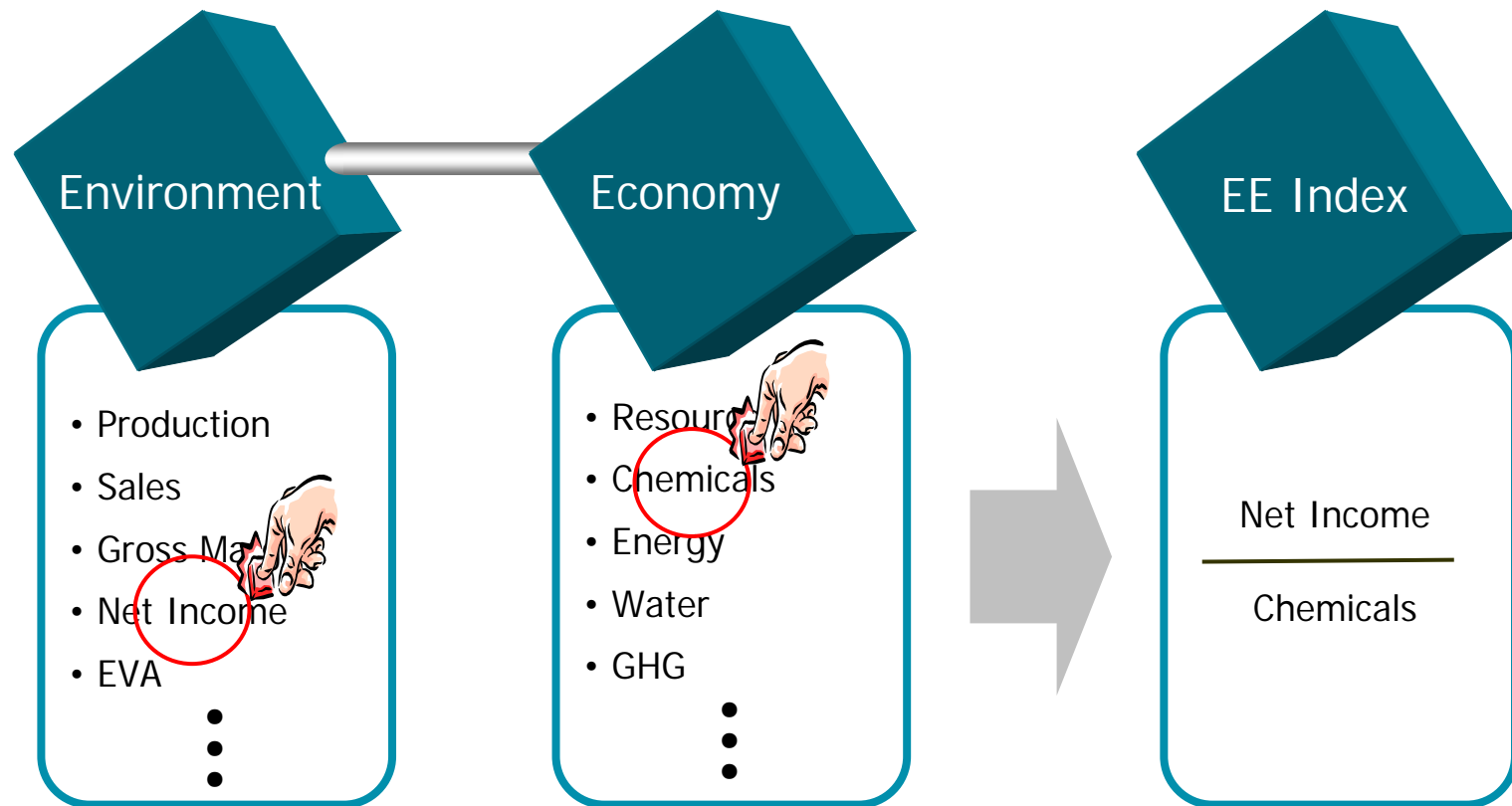
Net Income

E.I

Value Added

E.I

InStep EE: Toolbox Approach





InStep EE: Toolbox Approach

① Input the economic data

③ Select the items, weights and method to evaluate

② Input the environmental data

④ Show the result of EE as a table, a graph, etc

Eco-Frontier

- “Sustainability Solution Provider”!
 - Eco-Frontier is a unique brain group on sustainability in Korea. Its solutions have been provided to companies, financial institutions, localities, government, and international institutions in various forms of investment advice, information service, business development, brokerage, IT solutions as well as research and consulting.



NATSOURCE



UNEP **Finance Initiative**
Innovative financing for sustainability



Innovest
Strategic Value Advisors



Konkuk University

◆ General

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- Homepages
<http://kkulca.net>



• Previous Study

- Life Cycle Assessment on Pb soldering and Pb-free soldering (from December 1st, 2002 to November 30th, 2005) funded by Ministry of Commerce, Industry and Energy
- Development of Eco-design Guidelines for Electronics Product Systems (from June 21st, 2002 to May 31st, 2003) funded by Ministry of Environment
- Construction of LCI Databases for National Key Industries and Development of Environmental Performance Indices (from October 1st, 2000 to September 30th, 2003) funded by Ministry of Commerce, Industry and Energy
- Well to Wheel Energy Efficiency and LCA on Hydrogen as An Energy Source for Fuel Cell (from December 1st, 2003 to February 28th, 2006) funded by Hyundai Motors
- Guidelines for Establishing Supply Chain Environmental Management in Electronics Industry" (from October 1st, 2003 to September 30th, 2006) funded by Ministry of Commerce, Industry and Energy
- Construction of Life Cycle Inventories and Comparison of Environmental Performances of Different Wall Papers (PVC, Environmentally friendly PVC and Paper) by using LCA" (from July 1st, 2005 to February 28th, 2006) funded by Korea Petrochemical Industry Association
- Development of Counter-Response Mechanism to International Environmental Regulations/ Standards" (from July 1st, 2005 to June 30th, 2010) funded by Ministry of Commerce, Industry and Energy (www.n-cer.com)

And so on.

Thank you!

감사합니다

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