



**WWF** *for a living planet*<sup>®</sup>

# **ICT and the global challenges**

## **moving beyond marginal contributions**

**Dennis Pamlin**

**Global Policy Advisor, WWF**

**2004 08 31, SIS Global Information Seminar, Tokyo**





- I. WWF
- II. Why WWF regard ICT as essential
- III. ICT and the future: 2015- 2040
- IV. What has happened so far? (Sweden as an example)
- V. Tomorrow's business framework
- VI. Tomorrow's policy framework
- VII. Concrete next steps...





# I. WWF





# I. WWF

## Mission

WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by:

- conserving the world's biological diversity
- ensuring that the use of renewable natural resources is sustainable
- promoting the reduction of pollution and wasteful consumption.

## Organisation

Since 1962:

- WWF has become the world's largest and most respected independent environmental organization,
- with almost five million supporters distributed throughout five continents,
- Over 50 offices





# I. WWF

- 2000 Started the work with ICT
- 2002 Published "Sustainability and the Speed of Light"
- 2003 Developed the GRI guidelines for the telecom sector
- 2003 Worked with GeSI and UNEP in the WSIS process:
  - **Focus on production and consumption patterns**
  - **Government strategies for sustainable ICT use**
  - **Financial sectors strategies for ICT**





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"Governments have a leading role in developing and implementing comprehensive, forward looking and **sustainable national e-strategies**. The private sector and civil society, in dialogue with governments, have an important consultative role to play in devising national e-strategies.

## 20. E-environment

- a) Governments, in cooperation with other stakeholders are encouraged to use and promote ICTs as an instrument for environmental protection and the sustainable use of natural resources.
- b) Government, civil society and the private sector are encouraged to initiate actions and implement projects and programmes for **sustainable production and consumption...**





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  - **Financial sectors strategies for ICT**
- 2003 Developed an ICT strategy for the Swedish government
- 2004 Employed people in China, Brazil and South Africa



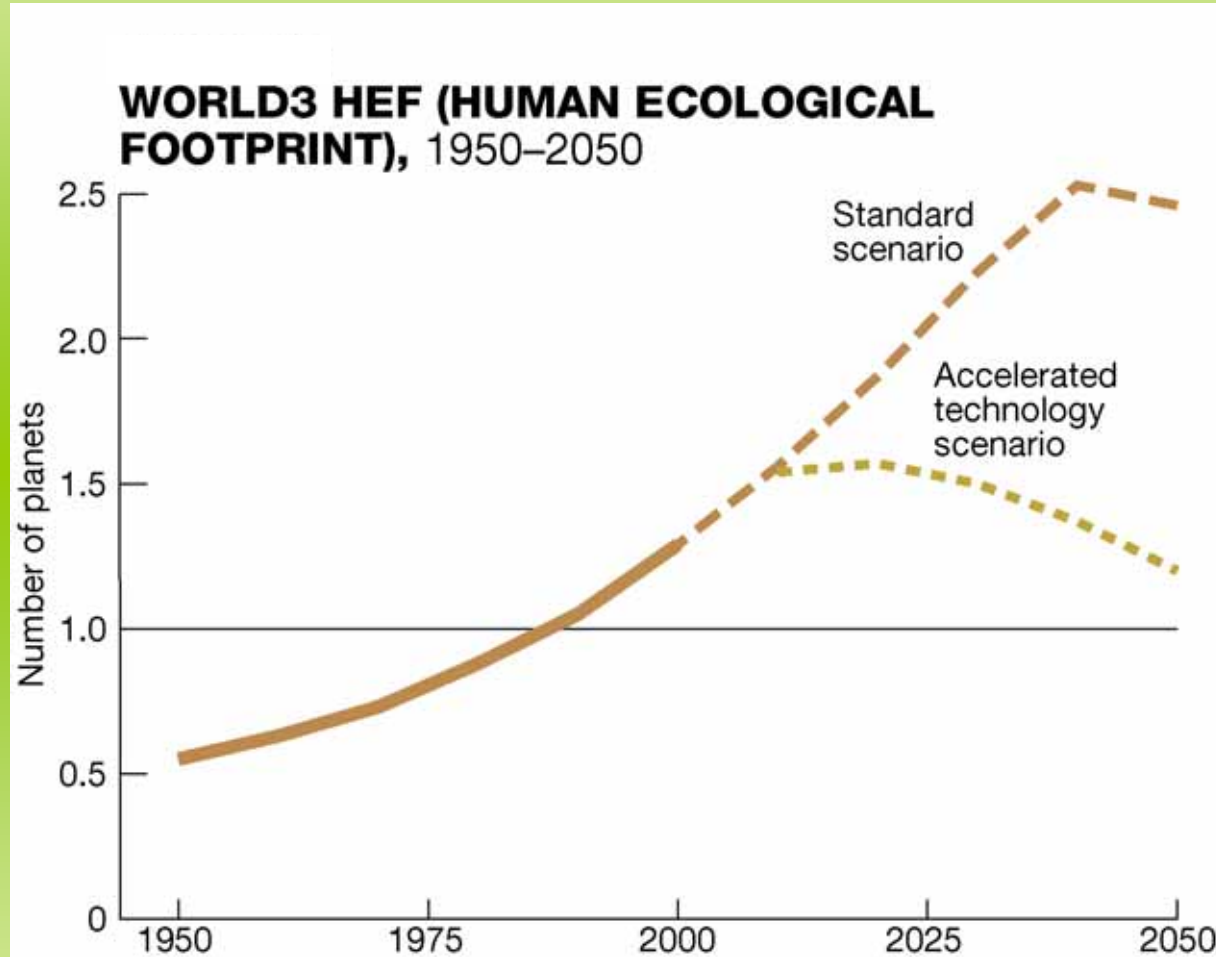


## II. Why WWF regard ICT as essential



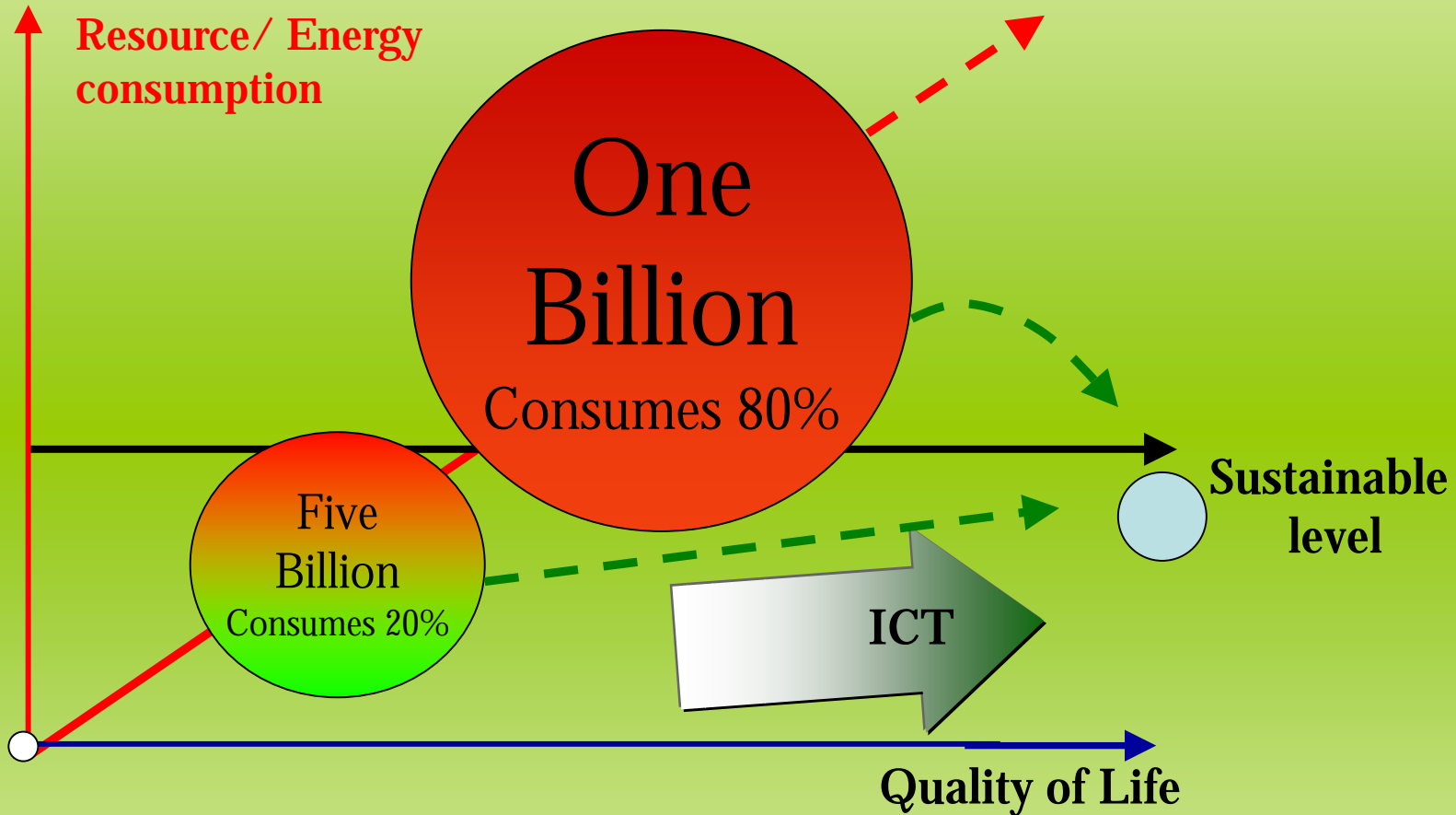


# II. Why WWF regard ICT as essential





# II. Why WWF regard ICT as essential



Based on a figure by: Mats-Olov Hedblom, Ericsson





## II. Why WWF regard ICT as essential

ICT can deliver many different things,  
**almost to many...**

- De-materialisation
- "De-transportation"/ Substitution
- Increased efficiency in industry/buildings
- Increased transport efficiency
- Higher efficiency in production/planning
- Better information





# III. ICT and the future: 2015- 2040





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## Focus on big trends, but don't forget the details - ICT in a context

- Use of natural resources
- Unequal income distribution
- Population growth
- Demographic changes
- Urbanisation
- Geopolitical change

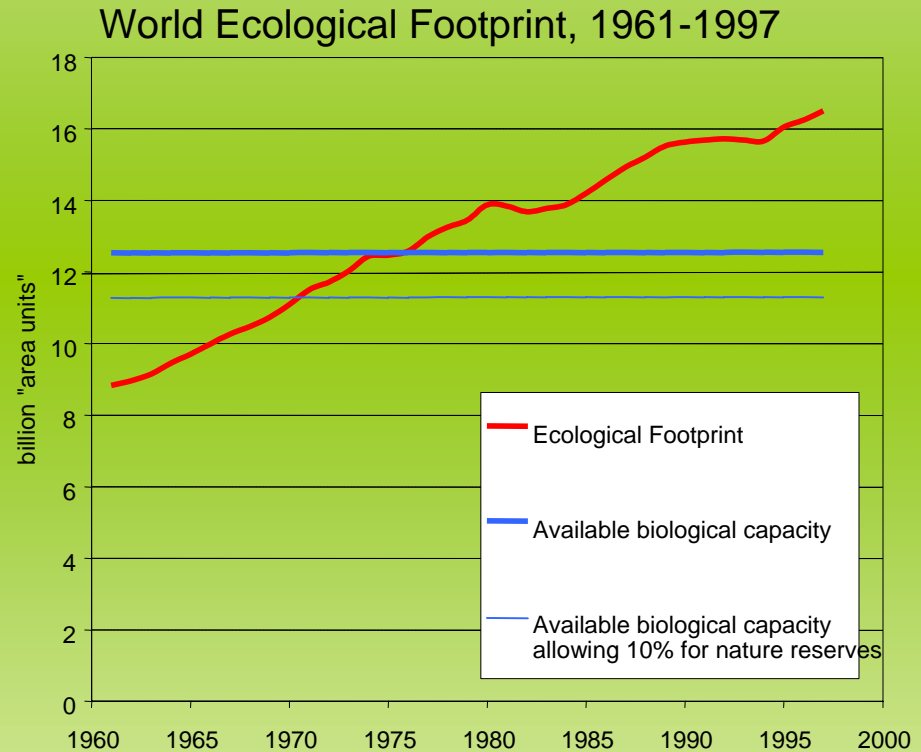




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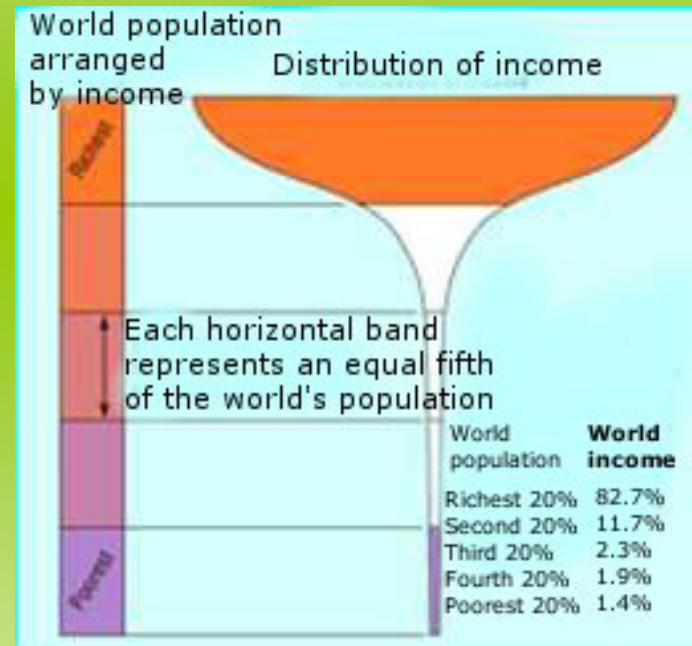


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Focus on big trends, but don't forget the details

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- **Unequal income distribution**
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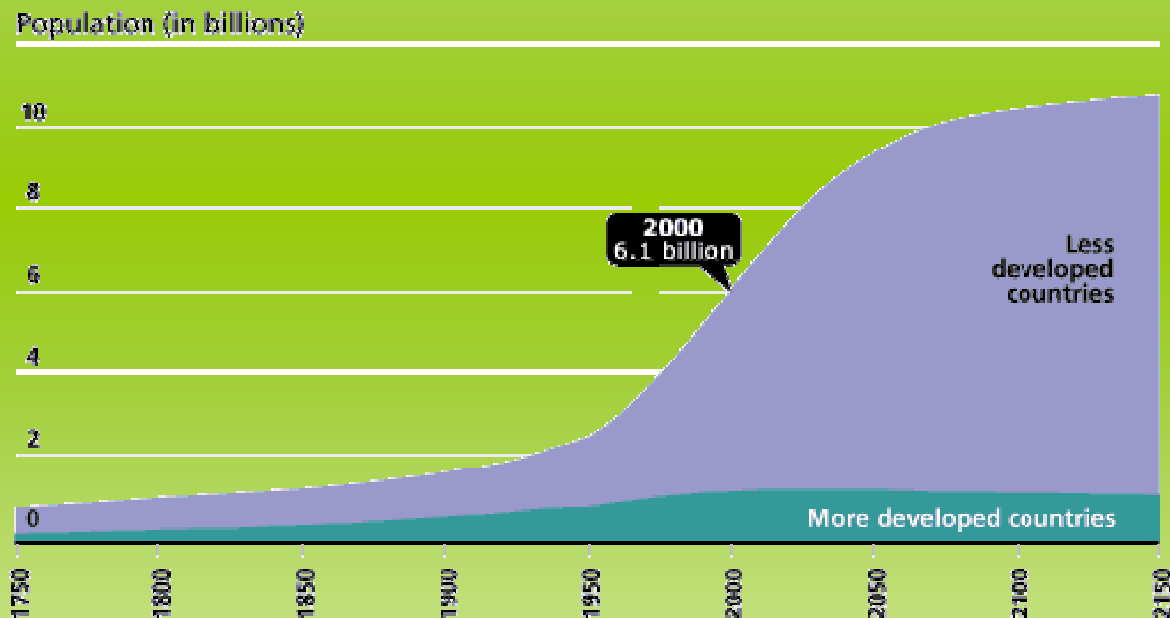


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“World Urbanization Prospects: The 2001 Revision”, [www.unpopulation.org](http://www.unpopulation.org)

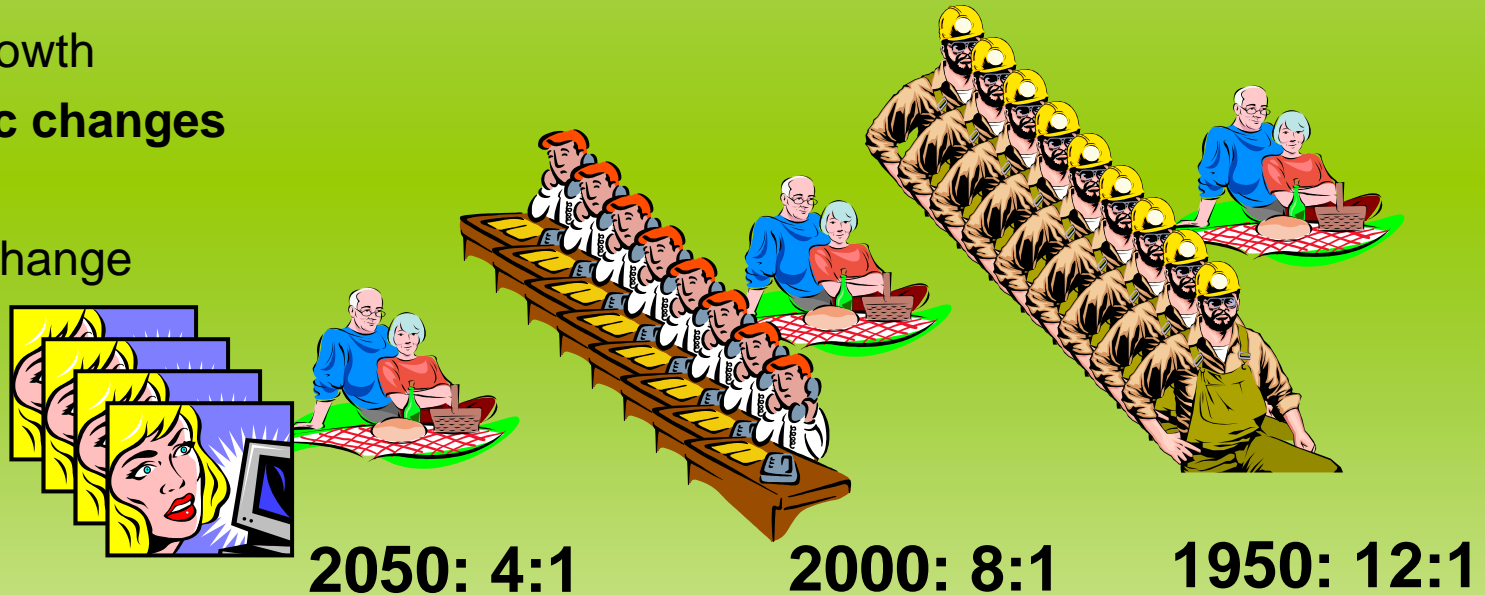




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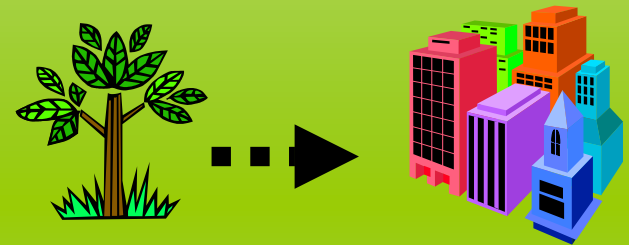




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During 2000-2030 the urban population of the less developed regions is expected to increase by 2.0 billion persons, nearly as much as will be added to the world population, 2.2 billion.

“World Urbanization Prospects: The 2001 Revision”, [www.unpopulation.org](http://www.unpopulation.org)

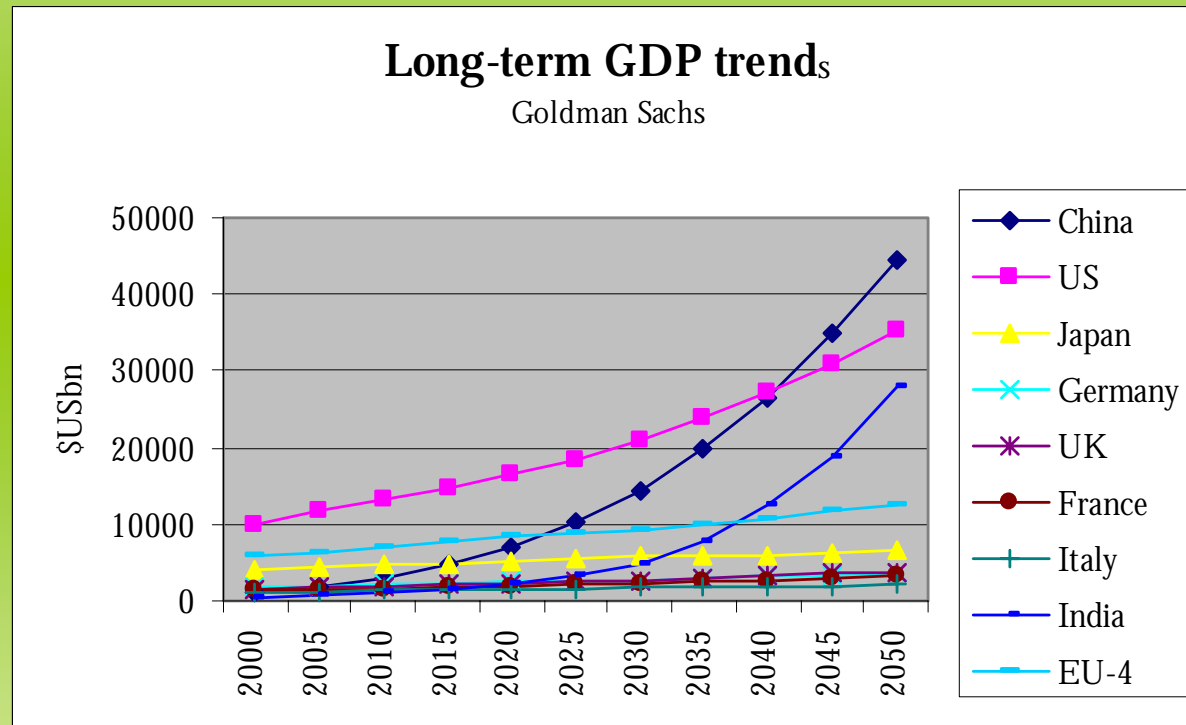




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Dreaming With BRICs: The Path to 2050 (Goldman Sachs)





# VI. What has happened so far?

(Sweden as an example)





# IV. What has happened so far?

## A couple of interesting examples (focus on Sweden)

- De-materialisation
- "De-transportation"/ Substitution
- Increased efficiency in industry and buildings
- Increased transport efficiency
- Higher efficiency in production/planning
- Better information





# IV. What has happened so far?

## A couple of interesting examples: Telia/Eniro:

- De-materialisation
- "De-transportation"/ Substitution
- Increased efficiency in industry/buildings
- Increased transport efficiency
- Higher efficiency in production/planning
- Better information

Introducing virtual phone books and answering machines.

### Library:

Electronic books

	<i>Answering Machine</i>	<i>Net Service</i>	<i>Factor</i>
Weight, kg	1,2	0,06	20
Power Consumption kWh	1 308	5,7	230
Greenhouse effect CO <sub>2</sub> equivalents	140 000	590	240



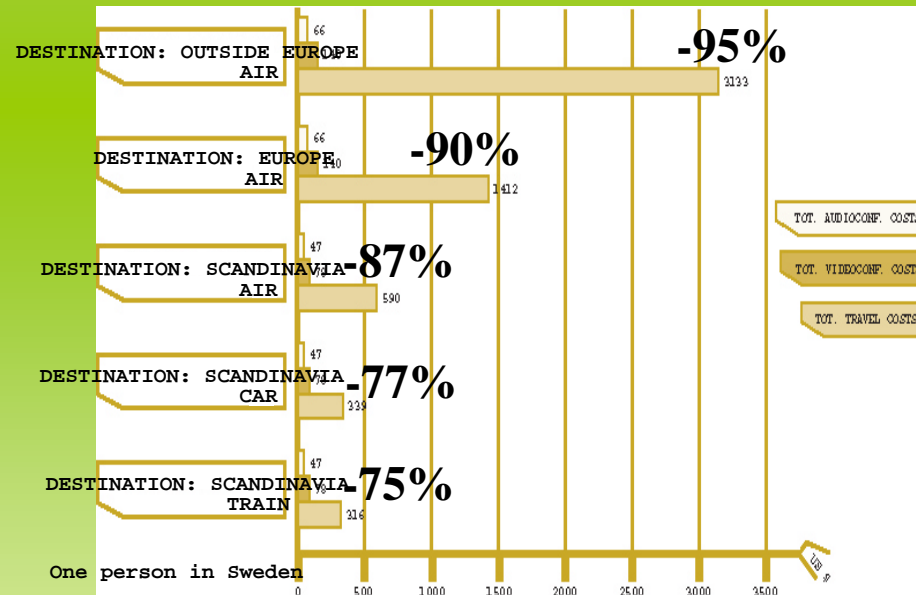


# IV. What has happened so far?

## A couple of interesting examples: Skanska:

- De-materialisation
- "De-transportation"/ Substitution
- Increased efficiency in industry/buildings
- Increased transport efficiency
- Higher efficiency in production/planning
- Better information

Meeting policy instead of travel policy





# IV. What has happened so far?

## A couple of interesting examples: Bokus (amazon.com):

- De-materialisation Books, CDs and DVDs over the net
- "De-transportation"/ Substitution
- **Increased efficiency in industry/buildings**
- Increased transport efficiency
- Higher efficiency in production/planning

Table 1. Comparison of Operating Models of Land-based Versus Online Bookstore<sup>2</sup>

	Traditional Superstore	Online Bookstore (Amazon.com)	
Titles per Store	175,000	2,500,000	
Revenue per Operating Employee	\$100,000	\$300,000	
Annual Inventory Turnover	2-3 times	40-60 times	
Sales per square foot	\$250	\$2,000	
Rent per sq. ft.	\$20	\$8	
<b>Energy cost per sq. Ft.</b>	<b>\$1.10</b>	<b>\$0.56</b>	<b>-50%</b>
<b>Energy cost per \$100 of sales</b>	<b>\$0.44</b>	<b>\$0.03</b>	<b>-93%</b>





# IV. What has happened so far?

**A couple of interesting examples: Posten (Swedish postal service):**

- De-materialisation
- "De-transportation"/ Substitution
- Increased efficiency in industry/buildings
- **Increased transport efficiency**
- Higher efficiency in production/planning
- Better information

Cars use GPS, bicycles when possible. Also gives customers the possibility to calculate the environmental impact of different kind of delivery





# IV. What has happened so far?

## A couple of interesting examples: SMHI (Wether forecast) :

- De-materialisation
- "De-transportation"/ Substitution
- Increased efficiency in industry/buildings
- Increased transport efficiency
- **Higher efficiency in production and planning**
- Better information

Deliver an intelligent heating system for houses (both building and maintainance) 30-50% energy reduction.





# IV. What has happened so far?

## A couple of interesting examples: **Konsum** (Grocery chain):

- De-materialisation
- "De-transportation"/ Substitution
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- Higher efficiency in production and planning
- **Better information**

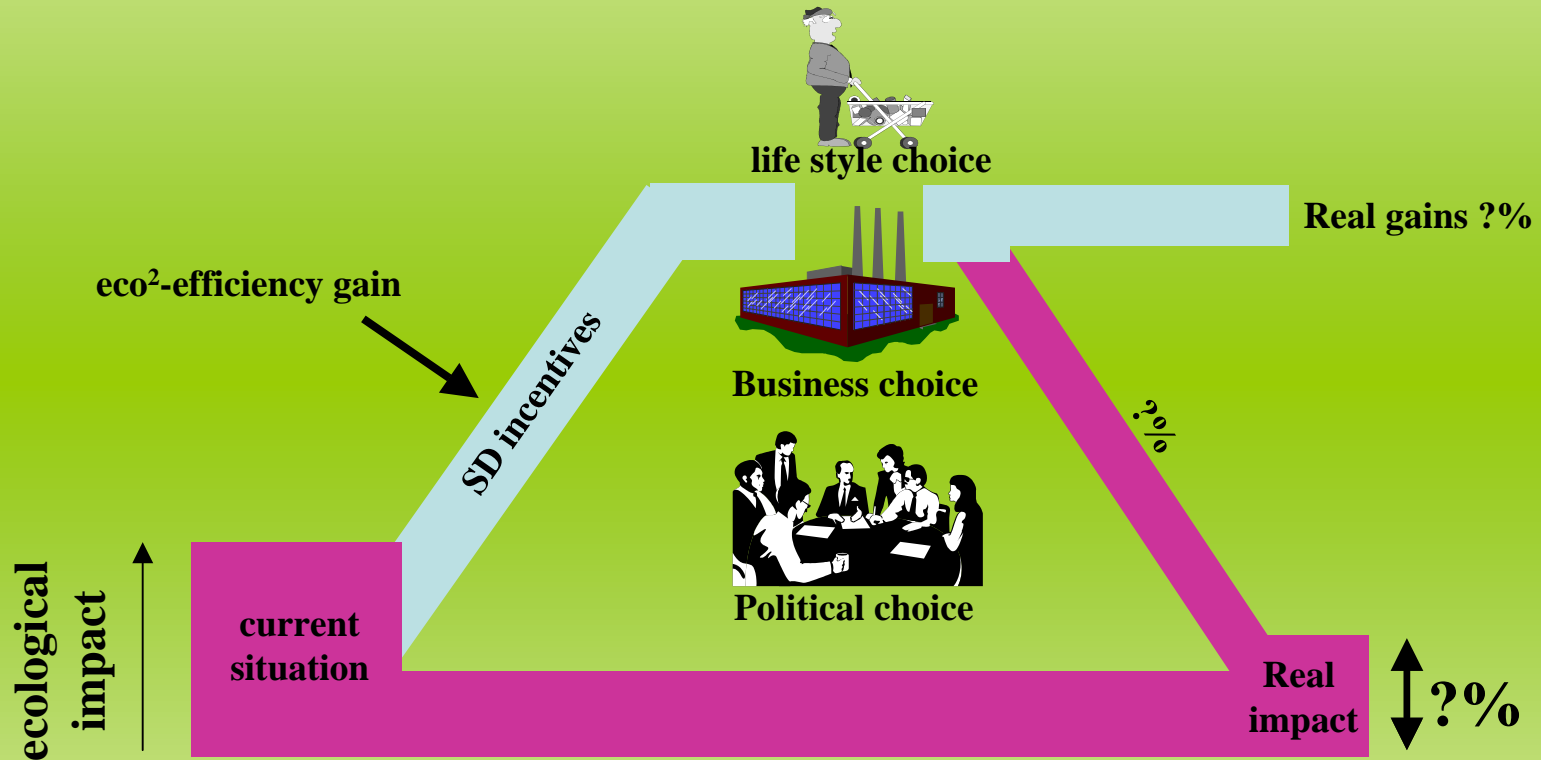
Allow all customers to see how much environmental friendly/ecological products they buy.





# IV. What has happened so far?

## REBOUND EFFECTS!!!



Inspired by a figure from Chris Tuppen, BT





# V. Tomorrow's business framework





# IV. Tomorrow's business framework

Effect	Caused by	Examples	Impacts
<b>Direct effects</b>			
<b>Indirect effects</b>			
<b>Systemic effects</b>			



# IV. Tomorrow's business framework

Effect	Caused by	Examples	Impacts
<b>Direct effects</b>	Tele-communication infrastructure and products	Equipment such as the PC, mobile phones	Environmental and social implications from production, installation, maintenance and end-of-life-management Job creation in the telecom sector
		Communication infrastructure	
<b>Indirect effects</b>	Application by user of telecommunication products and services	Servers, routers etc.	Environmental and social implications by alteration of existing products and service systems Environmental and social effects of new product and services Access to information Access to products and services Communities online Changes in work situations
		E-commerce (B2B, B2C, C2C)	
		Private telephony or email communication	
		Telework	
<b>Systemic effects</b>	A denser communication web, Changes in consumption pattern, new habits, synergy effects with other technologies	E-government	Changes in material flows Changes in energy consumption and green house gas emissions Land-use change Contribution to cultural homogeneity or cultural diversity Changes in civic culture Increased or decreased Digital Divide Changes in resource distribution
		Change in consumption of goods and services	
		Change in life style and work patterns	
		Increased information flows	
		Changes in existing economic and democratic systems	

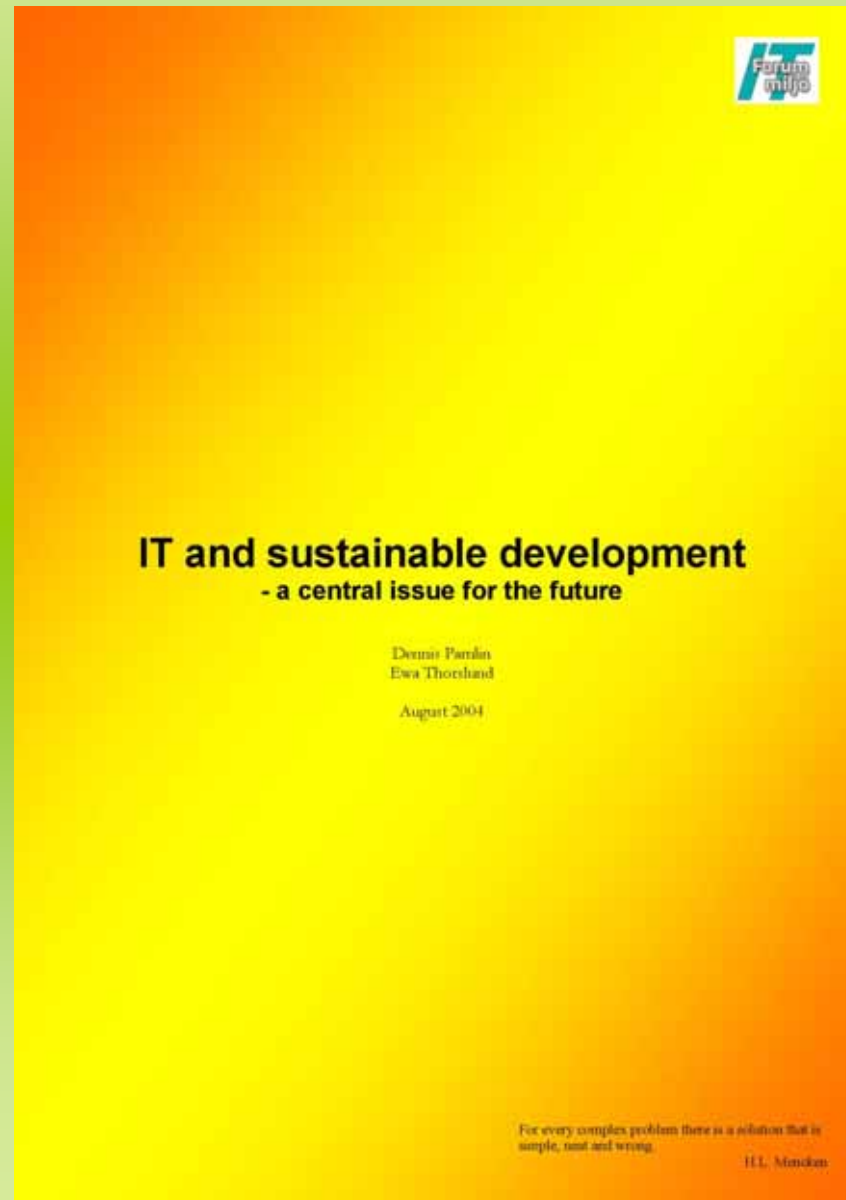


# VI. Tomorrow's policy framework





# IV. Tomorrow's policy framework



For every complex problem there is a solution that is simple, fast and wrong.

H.L. Menckin



# IV. Tomorrow's policy framework

An **efficient framework** is an essential prerequisite for a co-ordinated initiative under which different actors can collaborate to promote sustainable development in a focused, structured manner.

1. The first prerequisite for creating this type of framework is a **vision**.
2. The second prerequisite is **resources**, both personal and monetary.
3. The third prerequisite is **clearly defined responsibility**.

Furthermore, the Government must be a **forerunner** of IT initiatives for sustainable development, particularly in the chosen priority areas.

4. The fourth and final prerequisite is **focus and structure**.



# IV. Tomorrow's policy framework

**The chosen priority areas** should make up an integrated whole where both the individual elements and the overall work generate the following opportunities:

- produce significant environmental benefits and positive (or neutral) social and economic effects
- clear communication potential
- possibilities to establishing concrete goals
- significant business and export opportunities
- possibility for further independent development
- include the main areas concerned in the discussion on IT and sustainable development
- consist of a large, strategically important part of the population that works with these issues, and offer opportunities for creating new networks



# VII. Concrete next steps...





# VII. Concrete next steps...

## For companies. A couple of suggestion:

- Build on what you already have
- Agree on a vision (not too detailed and include politicians and NGOs)
- Get a system in place for counting the environmental gains (LCA +)
- **Introduce a sustainable developers zone (for products & system solutions)**
- **Collect good examples and put them together in a report**
- Deal with the products, then focus on the services
- Engage in dialogue with other parts of business as well as politicians
- Have fun!





# VII. Concrete next steps...

## For WWF. Find actors who can help to:

- Develop a vision for ICT: 2015-2040
- Start to develop methods for environmental gains
- Introduce sustainable developers zones
- Collect good examples and communicate them
- Engage in discussions with financial actors
- Support strategic investments





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[www.panda.org/ict](http://www.panda.org/ict)

