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# The IT sector as a leader towards a global low carbon economy

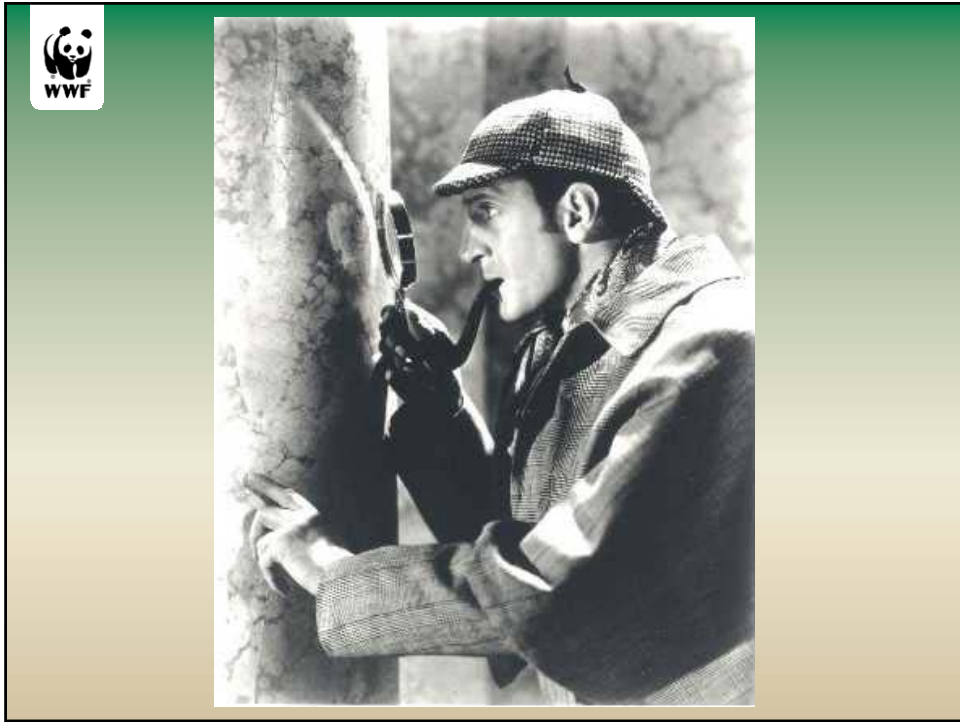
From carbon neutral to climate positive,  
making a lot of money and saving the planet

Dennis Pamlin  
Global Policy Advisor, WWF  
2009-03-03, CeBIT



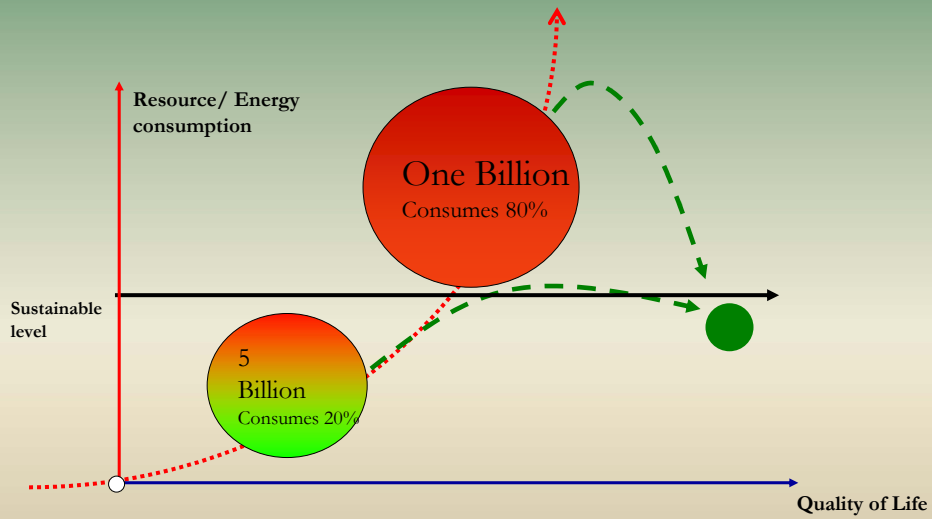
# ACT 1 The Challenge







## The Context: resource use and distribution



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




# ACT 2

## The Villain





# ACT 3 The Hero





Winners in a low  
carbon economy



Investments in Urban areas to provide essential services next 30 years

# US \$255 Trillion

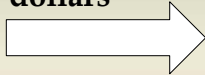
- What % of that investment can/must be invested in low carbon solutions instead of traditional carbon intensive solutions?



The key assumption is that these investments must result in a low/zero carbon result and low energy use

**Focus on services and solutions**

255 Trillion dollars



1. Light
2. Water
3. Motion/communication
4. Temperature
5. Food
6. Other services



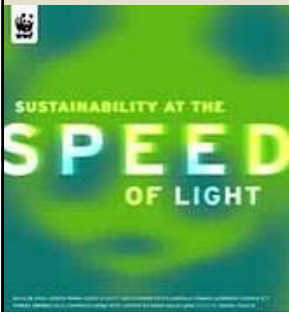
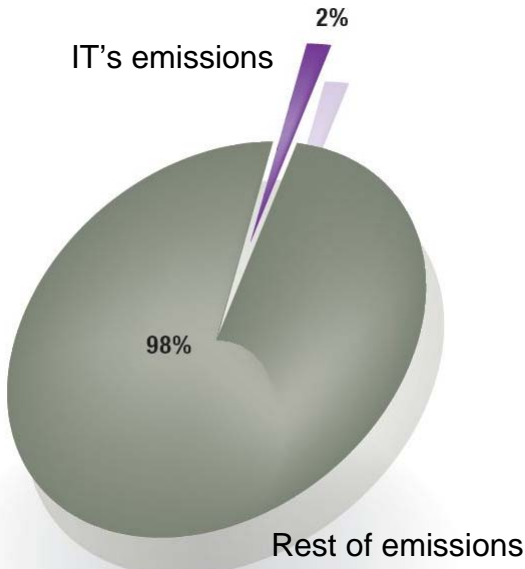
**0 CO<sub>2</sub>**  
Low energy





# IT as a solution provider



## IT and the 98% opportunity



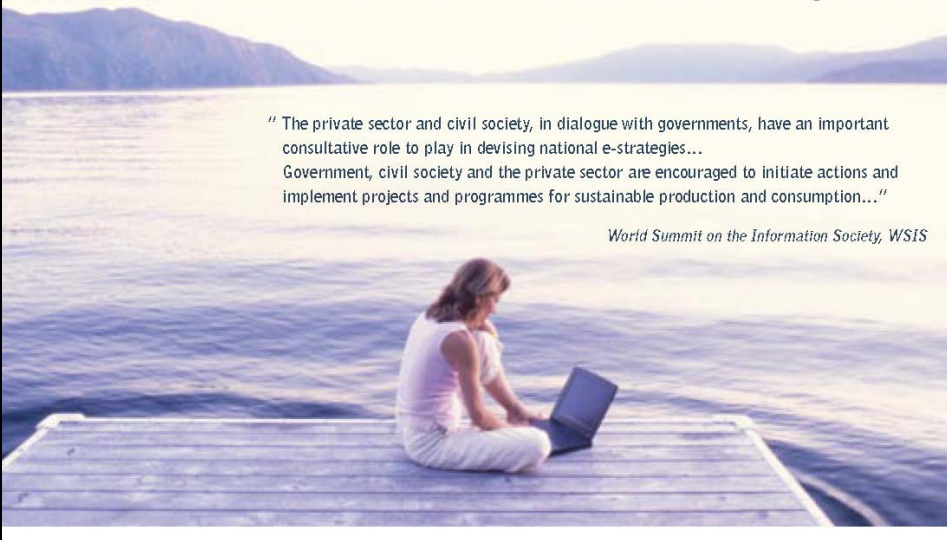

A joint initiative of ETNO and WWF

# SAVING THE CLIMATE AT THE SPEED OF LIGHT

## INFORMATION & COMMUNICATION TECHNOLOGY FOR CO<sub>2</sub> REDUCTIONS

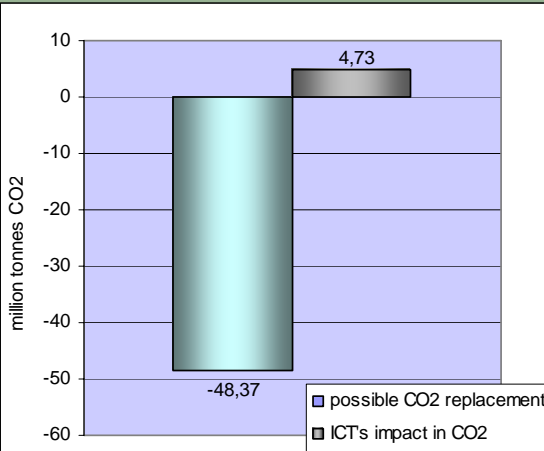
“ The private sector and civil society, in dialogue with governments, have an important consultative role to play in devising national e-strategies... Government, civil society and the private sector are encouraged to initiate actions and implement projects and programmes for sustainable production and consumption...”

*World Summit on the Information Society, WSIS*

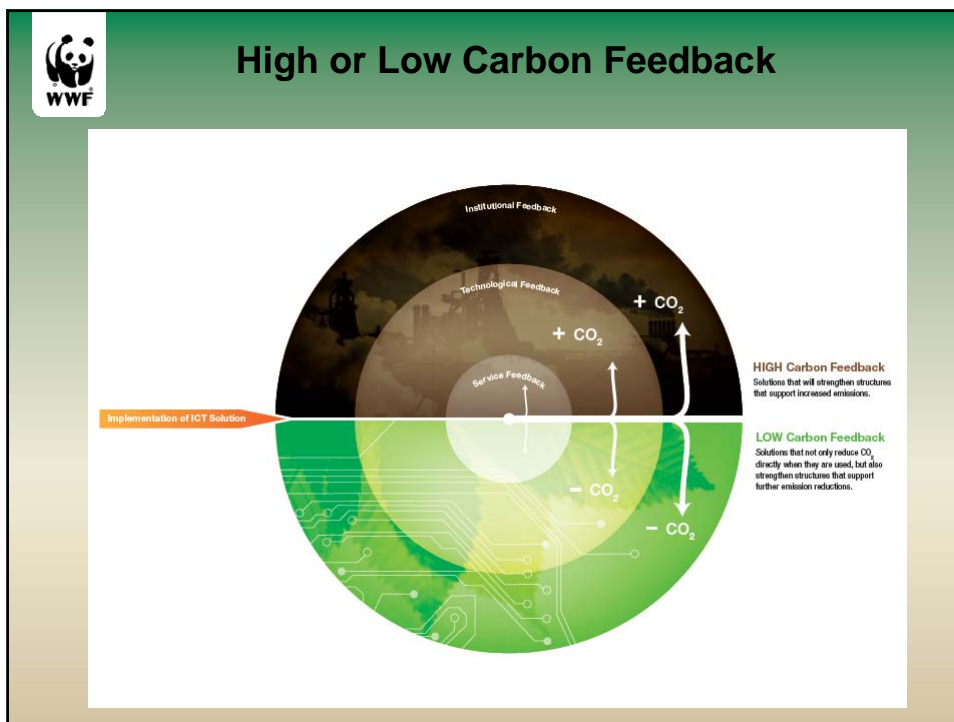
## The 98% opportunity

- 16 telcos' impact
- 6 ICT services' potential



Category	Impact (million tonnes CO2)
possible CO2 replacement	-48,37
ICT's impact in CO2	4,73

SOLUTION	ACTION	100 MT CO <sub>2</sub> EMISSION REDUCTIONS	SOLUTION	ACTION	100 MT CO <sub>2</sub> EMISSION REDUCTIONS
<b>1</b> Smart City Planning	Deploy modern simulation and analysis software to improve urban design and planning to optimise energy efficiency.	Reduce the CO <sub>2</sub> emissions from buildings and infrastructure by 2.3%.	<b>6</b> Smart Industry	Deploy design tools and software to forecast, simulate and analyse energy use in production processes to ensure low carbon design of plants and processes.	Reduce 1% of total CO <sub>2</sub> emissions generated by industry.
<b>2</b> Smart Buildings	Use sensors and controls in buildings to improve efficiency and tailor energy use to energy needs.	Reduce the CO <sub>2</sub> emissions from buildings being built by 4.5% in the coming decade.	<b>7</b> Smart Grid	Deploy smart meters and communication technologies within electricity networks to enable two way communication between energy users and energy producers and to deliver advanced services such as "time of use pricing" or "remote demand management".	Reduce about 1.25% of the CO <sub>2</sub> emissions associated with electricity use in buildings within a decade.
<b>3</b> Smart Appliances	Utilise IT components (Microprocessors and ASICs) within appliances to improve efficiency and tailor appliances use with actual needs.	Reduce about 1% of average CO <sub>2</sub> emissions from energy use in existing buildings.	<b>8</b> Integrated Renewable Solutions	Utilise simulation, analytical and management tools to enable a wide deployment of renewable energy, for example removing existing bottlenecks present in transmission infrastructure or enabling a wider use of distributed generation.	Add 75 GW renewable energy capacity to the global energy system.
<b>4</b> Dematerialisation Services	Use IT as a form of "service delivery", substituting physical products and interactions - i.e. "use bits instead of bricks".	Reduce current paper use by 13%.	<b>9</b> Smart Work	Leverage the internet and other advanced communication tools to work remotely and avoid business trips or physical commuting.	About 5% of car commuters become telecommuters and 15% of airplane business trips are substituted by virtual meetings.
<b>5</b> I-optimisation	Use IT-based controls and knowledge management systems within individual production processes to improve operations, save energy and increase efficiency.	Reduce 1% of total CO <sub>2</sub> emissions generated by industry.	<b>10</b> Intelligent Transport	Deploy advanced sensors and controls, analytical models, management tools, and ubiquitous telecommunications to provide relevant information to enable less polluting forms of transport (such as public transport).	Substitute less than 6% of all km travelled by "light-duty vehicles" with public transport.

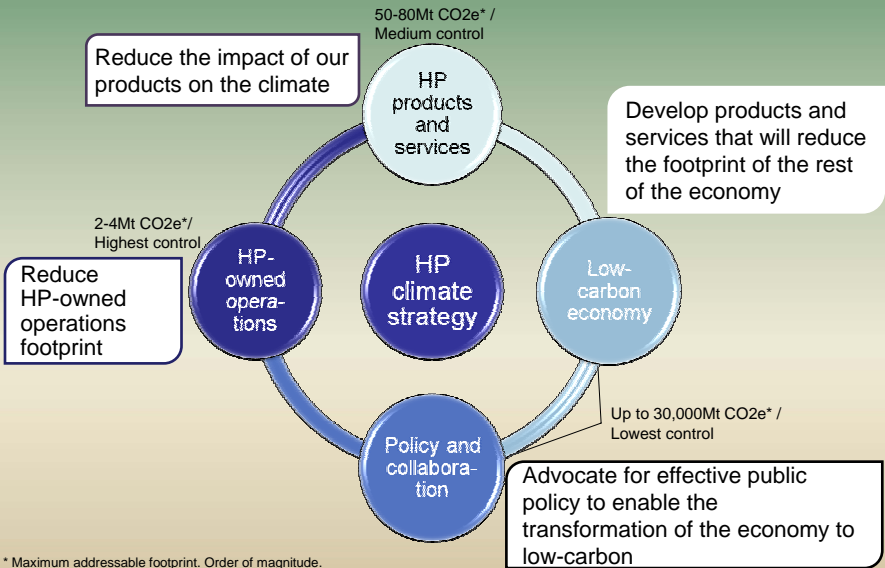




# ACTION



## HP climate strategy framework





### Calculation interface for companies using low carbon IT solutions

Question 1  
Question 2  
Question n

Set of questions for companies to answer. The more questions answered the further down the triangle.



Level of accuracy and possibility to get formal credits the CO2 reductions depending on input

Kilos of CO<sub>2</sub> emissions saved/year

500 800

\$ saved

\$1 750 CCX

€14 272 ECX

Actions needed to address possible high-carbon feedback

Actions needed to address other possible negative consequences

Action that can enhance possible low-carbon feedback

Actions needed to enhance other possible positive consequences



### Global CO<sub>2</sub> savings from the use of IT services instead of flying and commuting

Reset



Total CO<sub>2</sub> emissions savings

1073 Mt

The equivalent of taking 447 083 333 cars off the streets

Select year: 20 45

#### Choose IT services

- Flexible work
- Include feedbacks
- Virtual meetings
- Include feedbacks

Choose possible future:

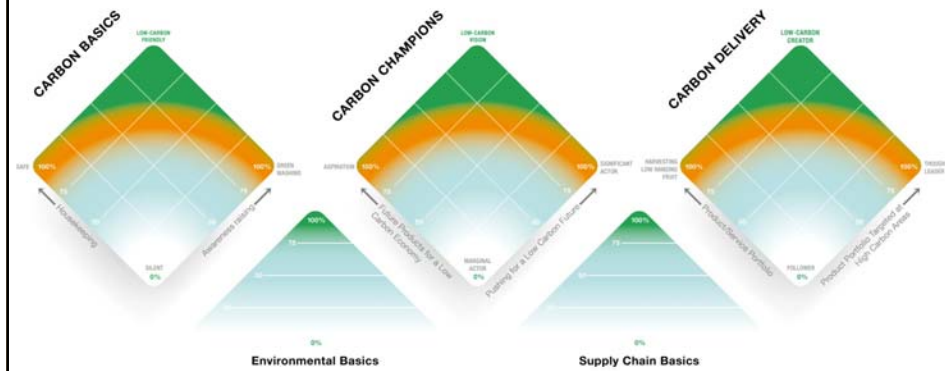


In a Smart World, support for low-carbon IT use is part of effective climate change policy that promotes cross-sector collaboration. Suppliers and users actively offer and pursue solutions such as flexible work and virtual meetings. Effective collaboration ensures implementation.

Your Company:



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Source: Gartner and WWF

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Gartner



Solutions from China Mobile identified so far:

### 1. Smart city planning

1.1 Remote control system for street lamp, Hangzhou, Zhejiang Province

### 2. Smart buildings

2.1 Remote monitor of city heating system in Hebei Province

### 3. Smart appliances

3.1 [Any control of appliances like smart use of Air conditioners?]

### 4. Dematerialization of Services

4.1 Mobile Newspaper

4.2 Automatic services for customers

4.3 E-payment

4.4 Mobile-governance in Shenzhen

4.5 Mobile – tax inspection

### 5. I-optimisation

5.1 Agricultural irrigation monitoring in Hebei Province [Maybe]



## What make low carbon IT a potential winner

	<b>Problem</b>	<b>Opportunity</b>
<b>Goal</b>	Low risk/ Low cost	Satisfying needs/New revenues
<b>Driver</b>	Media/Legislation	New markets/Customers
<b>Responsible</b>	PR/CSR manager	Planning/SMT/CEO/Board
<b>Focus</b>	What is easy to see/ legal responsibility	Where the company's impact is the most significant and where money can be made
<b>Climate change</b>	Reduce internal CO <sub>2</sub>	Help society to reduce CO <sub>2</sub>
<b>Approach</b>	Reactive	Proactive





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CARBON DISCLOSURE PROJECT



## **Winners in a low carbon economy**

Climate change as a driver for profit and innovation