Climate change:
ICTs to the rescue?

http://www.gesi.org/

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What is GeSI?

- Global organisation to address sustainability
- industry led
- open to full ICT industry
- manufacturers, operators and regional associations
- partnered with UNEP and ITU, ETNO and the USTA
- Carbon Disclosure project and WWF
- GSMA and the EICC
- addresses triple bottom line

GeSI Membership

The ICT sector "walks the talk"

GeSI members follow a double strategy:

- They are actively implementing measures leading to increasing energy efficiency and decoupling energy consumption from CO_2-emissions.

- They offer services to their customers, which increase there energy efficiency as well, e.g. tele/audioconferencing to replace traveling and telework to avoid commuting. E-Commerce instead of going to the supermarket, Business-TV, E-Business, E-Learning, E-Teaching, E-Government.

SAVING THE CLIMATE AT THE SPEED OF LIGHT

INFORMATION & COMMUNICATION TECHNOLOGY FOR CO_2 REDUCTIONS

A joint initiative of ETNO and WWF

" 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..."
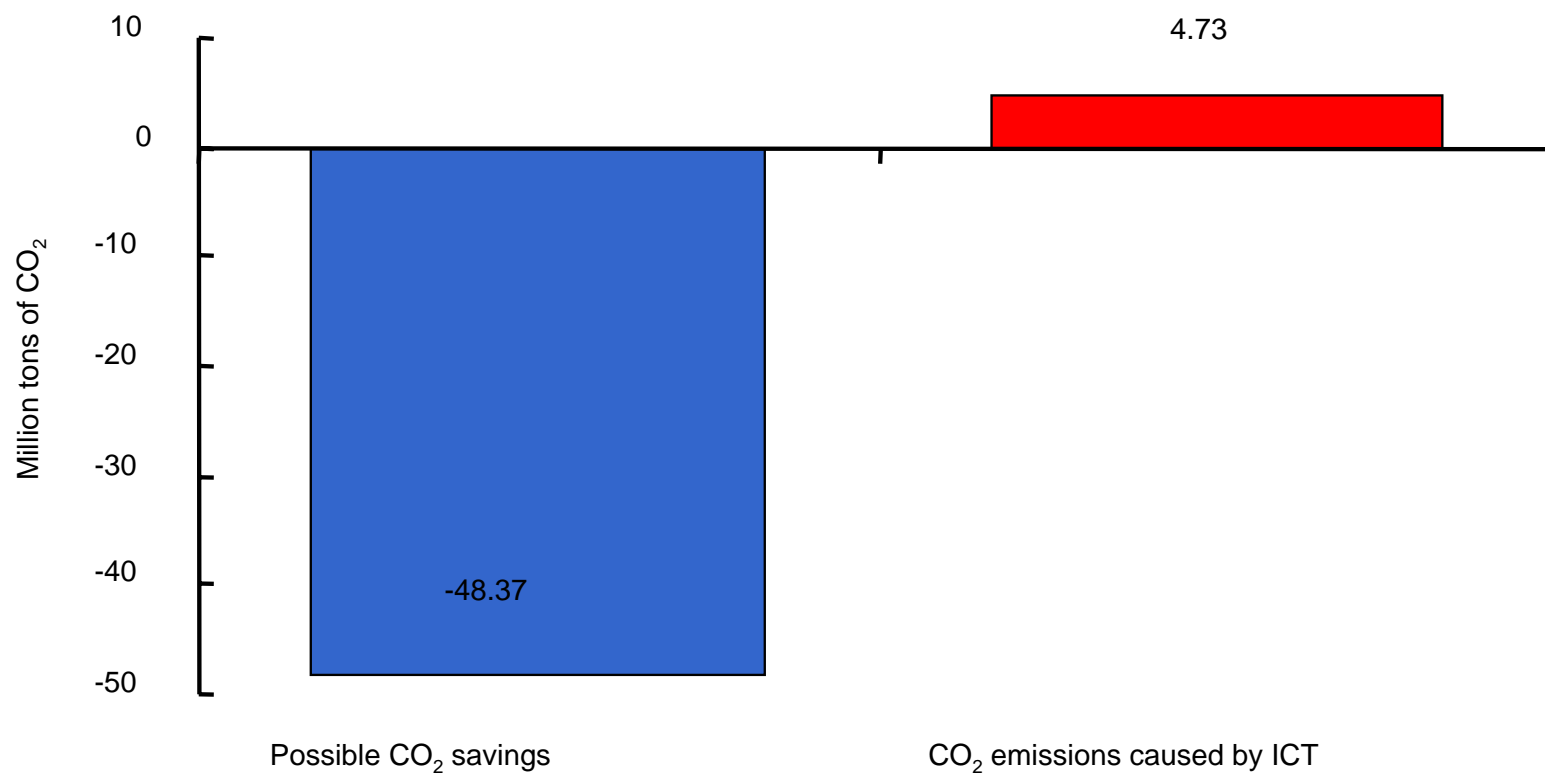
World Summit on the Information Society, WSIS

Climate protection and ICT
Opportunities and risks

Potential influence of ICT on CO$_2$ emissions

Bar chart showing "Million tons of CO$_2$" on the vertical axis ranging from 10 to -50. "Possible CO$_2$ savings" shown as a blue bar at -48.37. "CO$_2$ emissions caused by ICT" shown as a red bar at 4.73.

A GLOBAL STUDY ON THE CARBON IMPACTS AND OPPORTUNITIES OF ICTs

CONTEXT

The Global e-Sustainability Initiative (GeSI), and The Climate Group have undertaken a study on the role of the ICT sector and Climate Change to support the publication of a **major report** designed to examine how the application of ICT can, not only deliver energy savings and carbon reduction, but do so in a way that drives even greater economic growth and productivity

This Study presents the first comprehensive estimates and projections of the ICT sector footprint out to 2020

AIMS

- Deliver the first globally comprehensive picture of direct and indirect carbon emissions of telecoms, computing, services and software;

- Define common themes and issues across the ICT lifecycle, identifying critical trends, scenarios and impact assessments for the ICT sector to 2020;

- Create a 'road map' to allow the ICT sector to act now on reducing global energy usage and greenhouse gas emissions;

- Examine how the application of ICT can, not only deliver energy savings and carbon reduction, but do so in a way that drives even greater economic growth and productivity
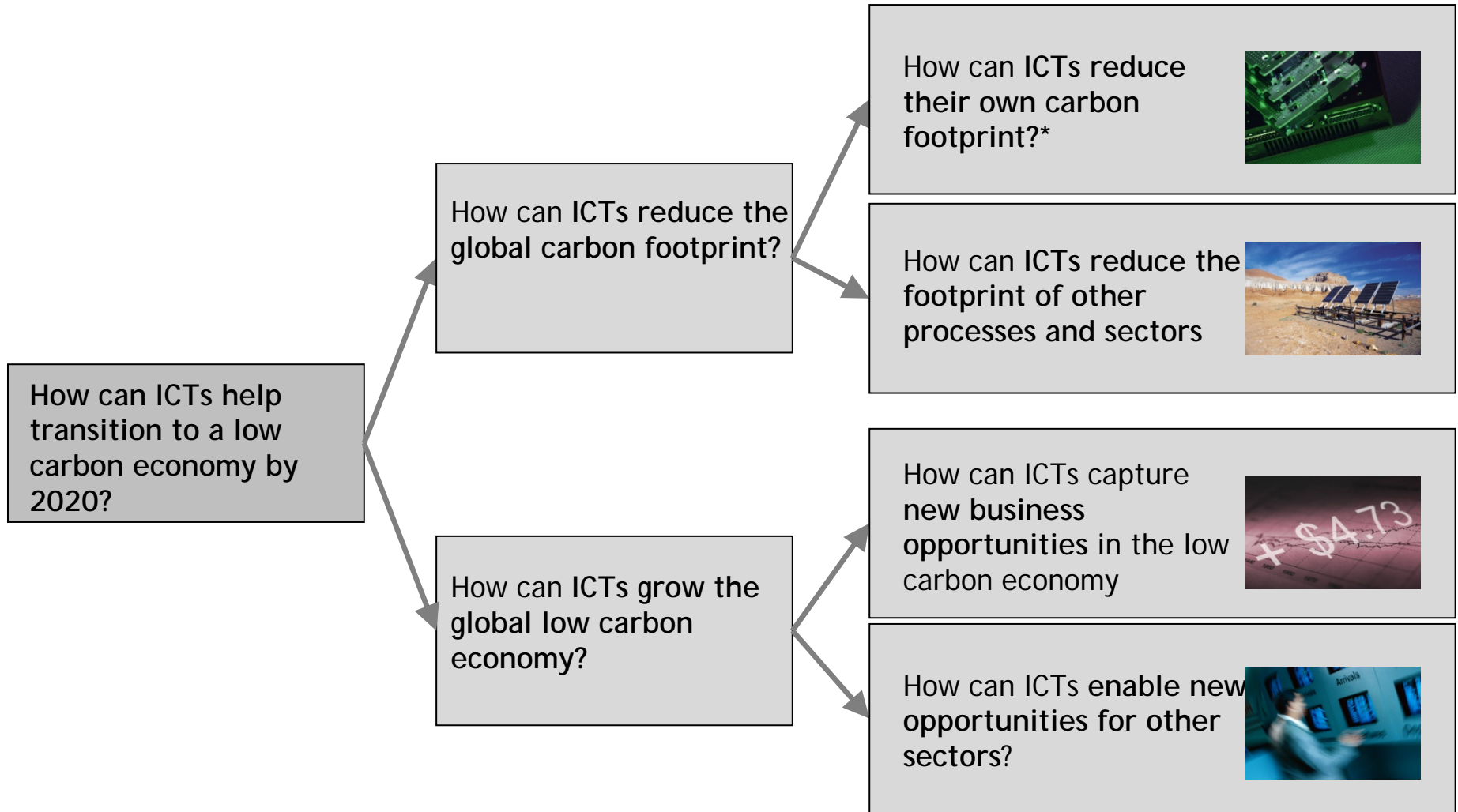
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Key questions addressed

How can ICTs help transition to a low carbon economy by 2020?

How can ICTs reduce the global carbon footprint?

How can ICTs reduce their own carbon footprint?*

How can ICTs reduce the footprint of other processes and sectors

How can ICTs grow the global low carbon economy?

How can ICTs capture new business opportunities in the low carbon economy

How can ICTs enable new opportunities for other sectors?

THE GLOBAL NEED FOR IT STORAGE, COMMUNICATION AND COMPUTATION IS DRIVING AN INCREASE IN USE OF ICT
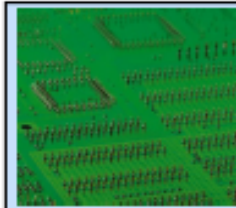
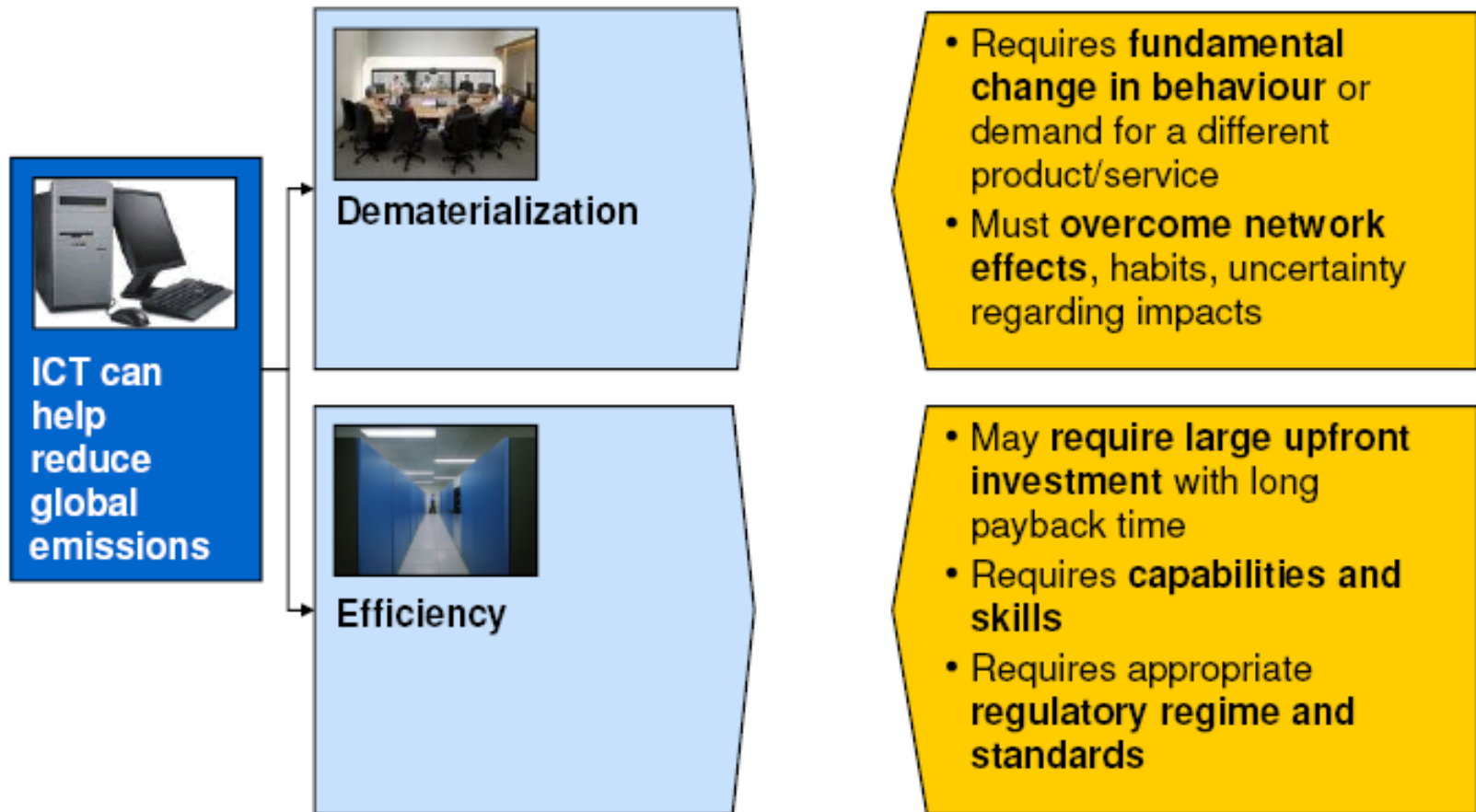| IT need		Drivers
	Storage	• Need for data storage capacity has been increasing at 56% p.a. • By 2010 it is due to reach almost 1,000 Exabytes of storage
	Computation	• Application complexity and number of applications has been steadily increasing, following approximately Moore's law of doubling every 18 months, i.e. 59% p.a.
	Transmission	• Across the world, the number of internet users has been steadily increasing at approximately 15% p.a. • Further increase will come from the spread of device to device communication

New applications and technologies rely on ICTs to distribute and collect information and increase:
- The amount of content that must be stored
- The computational requirement of devices
- The number of connections and the bandwidth necessary to operate

Source: IDC, Team analysis

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DEMATERIALIZATION FACES FUNDAMENTAL BEHAVIORAL BARRIERS WHILE EFFICIENCY FACES CONVENTIONAL BUSINESS BARRIERS

ICT can help reduce global emissions

Dematerialization

Efficiency

Key barriers

- Requires **fundamental change in behaviour** or demand for a different product/service
- Must **overcome network effects**, habits, uncertainty regarding impacts

- May **require large upfront investment** with long payback time
- Requires **capabilities and skills**
- Requires appropriate **regulatory regime and standards**

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Some Key Messages

- The ICT sector is central to the transition to a low carbon economy. ICTs represent 2% of worldwide energy consumption and related carbon emissions, **with further growth by 2020** driven primarily by new needs in Emerging markets (especially in China and in India).

- ICT can also facilitate carbon reductions across sectors world-wide, to a **much higher order** of total emissions by 2020. The focus so far has been on dematerialisation or substitution of high carbon activities for lower Impact activities (ie: videoconferencing or telecommuting), but the study shows that the scope for efficiency measures from providing platforms through which energy efficiency can be captured across all sectors of the economy is potentially many times larger

Some Key Messages

- All of these opportunities represent new markets for ICT and other high Tech sectors with large value at stake, from the savings that can be obtained. That value will be divided between the end users and the solution providers. Total value across the opportunities we identified, that is: efficiency gains from logistics, energy savings associated to buildings, reductions in transmission and distribution losses from the adoption of a smart grid and motor systems optimisation could amount to **many hundreds billion Euro**. This does not take into account the additional value placed on these technologies from non-energy related benefits. It does not take into account the savings if there is a price of carbon.

- To realize these opportunities, multiple barriers will need to be overcome. Market barriers, policy barriers, behavioural barriers or some combination of the three have been identified. These barriers can be seen as opportunities for the sector and point to policy and industry implications.

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Identify and use the opportunities

- To apply the strengths of the ICT sector to enable climate change solutions…

- To reduce inefficiencies in current products and processes

- To de-couple economic growth from energy use across the economy through intelligent systems design or through retrofit of existing building, transport and power infrastructure

- To focus on the emerging economies and invest now to prevent locking in carbon-intensive practices and technologies

- To enable better decision-making and behaviour change through better information provision, feedback and response

- To enable new low-carbon ways of working and living through collaborations with other sectors

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