



GeSI

GLOBAL e-SUSTAINABILITY
INITIATIVE

ICT key driver to a low carbon society

The need for the right policy framework



Workshop on ICT's and Environmental Challenges 22-23 May 2008

www.gesi.org

Luis Neves
GeSI Chairman
Luis.Neves@telekom.de

What is GeSI?

- GeSI is a Global International Non for Profit Association (INPA) to address sustainability (triple bottom line - social, environmental and economical)
- industry led and open to full ICT industry
- manufacturers, operators and regional associations
- partnered with United Nations Environmental Programme (UNEP) and International Telecommunications Union (ITU), European Telecommunications Network Operators (ETNO) and the USTelecom Association and the Electronic Industry Code of Conduct (EICC)
- Carbon Disclosure Project (Global Initiative of Institutional Investors representing more than 57 trillion USD of Asset under management) and WWF

GeSI Members



A Global Study on the Carbon Impacts and opportunities of ICT 's

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



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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


The Study Scope

Computing, IT Services, Software and Telecoms




Computing

- Hardware components
- Assembly
- Peripherals
- Network hardware
- Company operations



IT services*

- Data centres
- Network design
- E-paper, online services
- Company operations



Software

- Software development and testing
- Software packaging
- Software sales and distribution



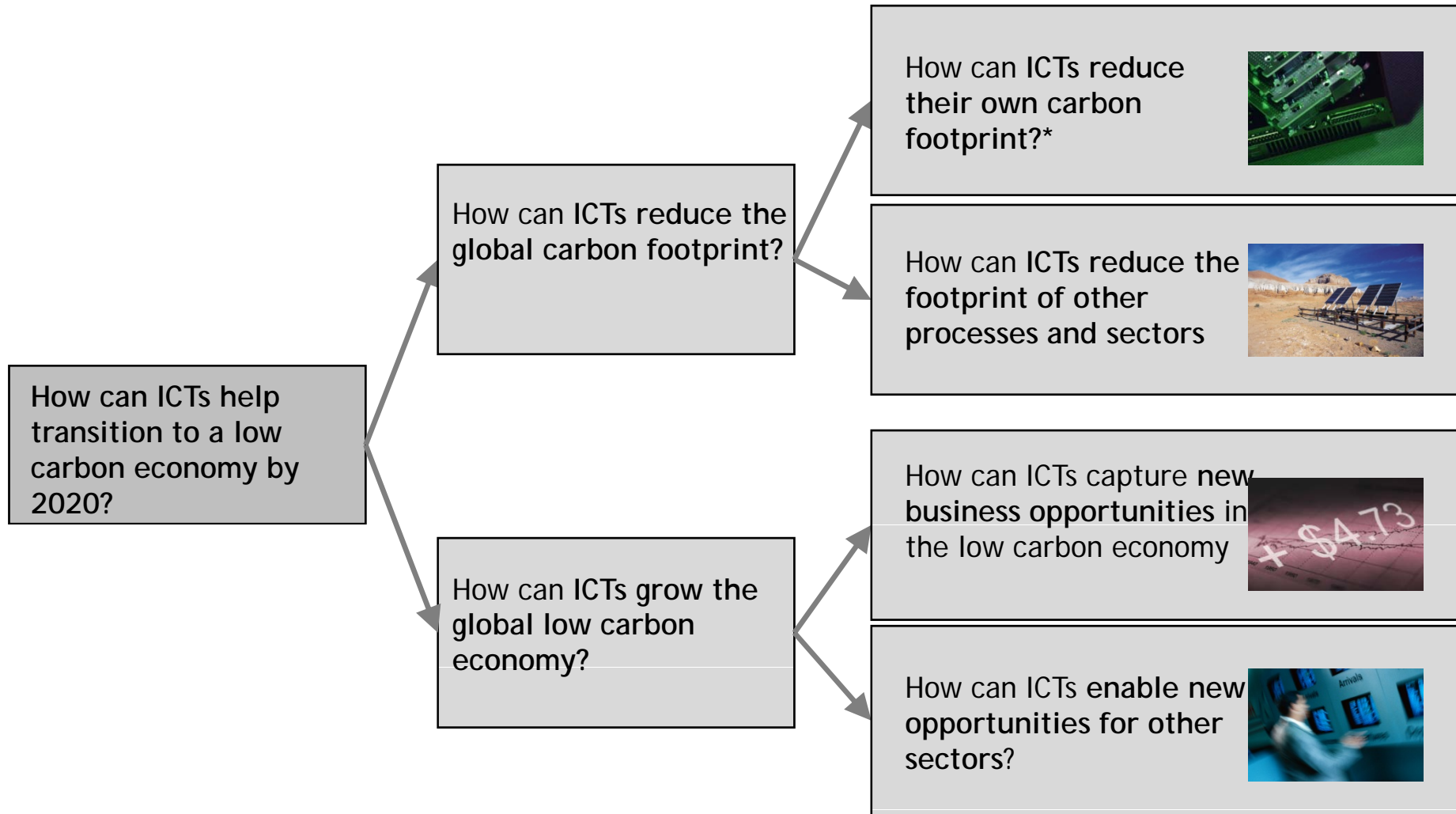
Telecom

- Hardware components
- Assembly
- Peripherals
- Network
- Company operations

“Any company or organization which, as a principal part of its business, provides a service for the point to point transmission of voice, data or moving images over a fixed, Internet, mobile or personal communication network, or is a supplier of equipment which is an integral component of the communication network infrastructure, or produces equipment or software associated with the electronic storage, processing or transmission of data.”

GeSI constitution, on what defines an ICT company

Key questions addressed



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

- Full review of the **global footprint** from embedded carbon and electricity use for
 - **PCs and peripherals**, including workstations, servers, laptops and monitors
 - **Telecom devices**, including mobile phones, chargers, routers, IPTV boxes
 - **Networks**, including voice, mobile and data networks
 - **Data centres**, including volume servers, medium and high-end servers, and storage
- **Split by region for 2002, 2007 and 2020**, with regional projections of installed base and global projections on unit energy consumption for direct footprint

- **First comprehensive assessment** of the ICT footprint including future projection
- **Consistent methodology and assumptions** across all regions to allow like to like comparison
- **Validated data set**, based on expert and company interviews, public sources, and proprietary knowledge

This Study also presents the first fact based assessment of the impact of ICT on Global Emissions

- Full review of the **global emissions** an key drivers by sector
 - **Transport**, including urban and non-urban road transport, passenger and freight transport across all vehicles (road, air, sea)
 - **Industry**, including motor systems, process industries
 - **Power**, including generation, transmission and distribution, supply mix and demand sources
 - **Buildings**, including residential, office, ware-houses, other commercial
- **Projections to 2020**, split by region with regional drivers

- **First global estimates** to account for cross sector effects and compare de-materialization and efficiency
- **Validated through regional data** and projections, taking into account differences in drivers
- **Impacts calculated on the basis of case studies**, including transparent assumptions on penetration

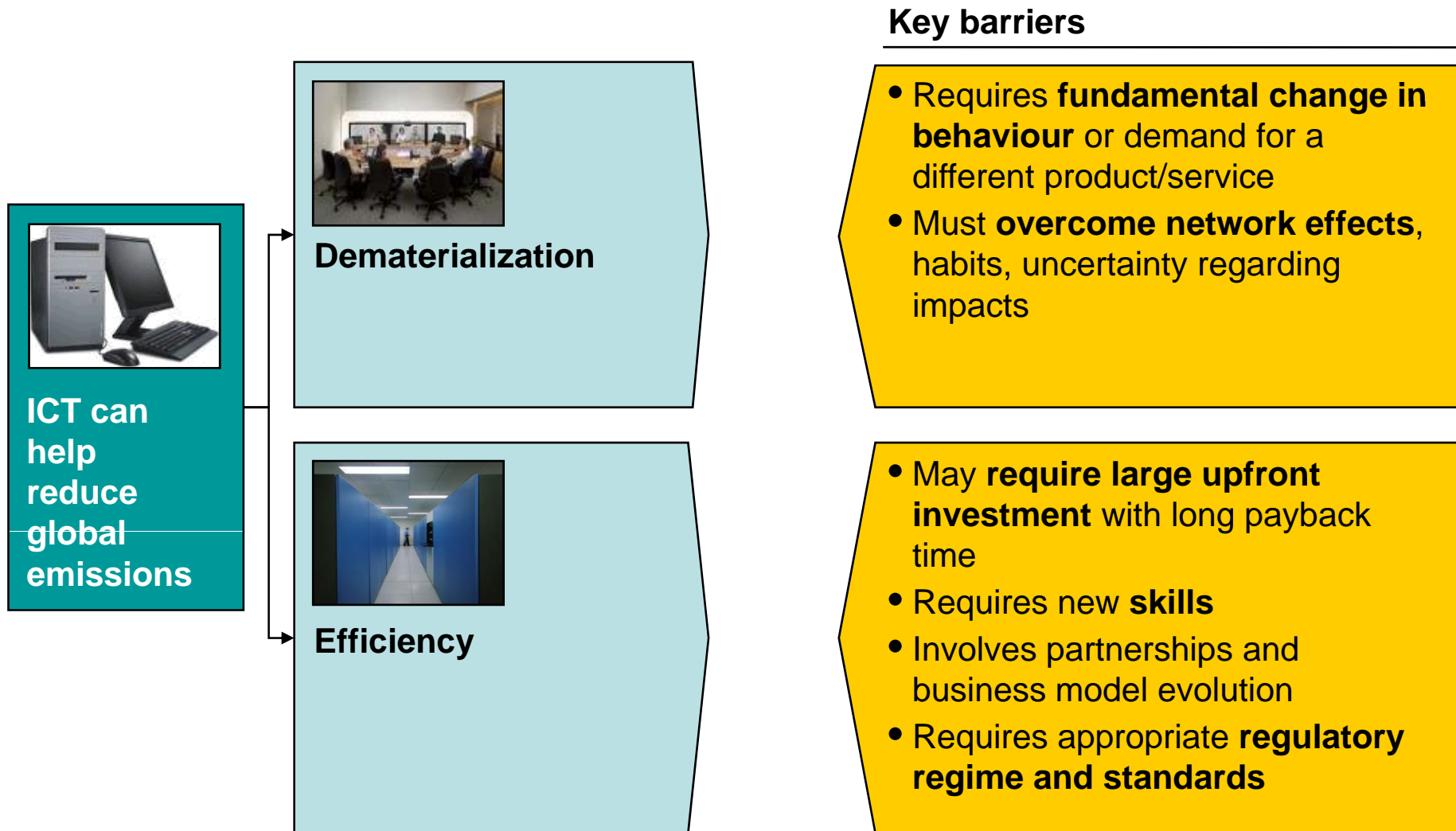
Some Key Messages

- 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.

Dematerialization faces fundamental behavioral barriers while efficiency faces conventional business barriers.



Implications

- We need company innovations in business models to deliver old habits in new ways
- Industry needs to demonstrate what's possible, and get clear messages from policy makers about targets
- ICT sector must continue to radically innovate to reduce emissions
- Standards and methodologies are needed
- ICT must develop enabling opportunities to reduce emissions beyond its own footprint

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

Contact GeSI

GeSI Secretariat

Scotland Europa

Scotland House

Rond Point Schuman, 6

B-1040 Brussels

Belgium

phone: +32 2 2828316

fax: +32 2 2828319

e-mail: info@gesi.org