

PART 3

ICT applications in innovative eco-friendly technologies

Examples



Green ICT - Environmentally sustainable ICT



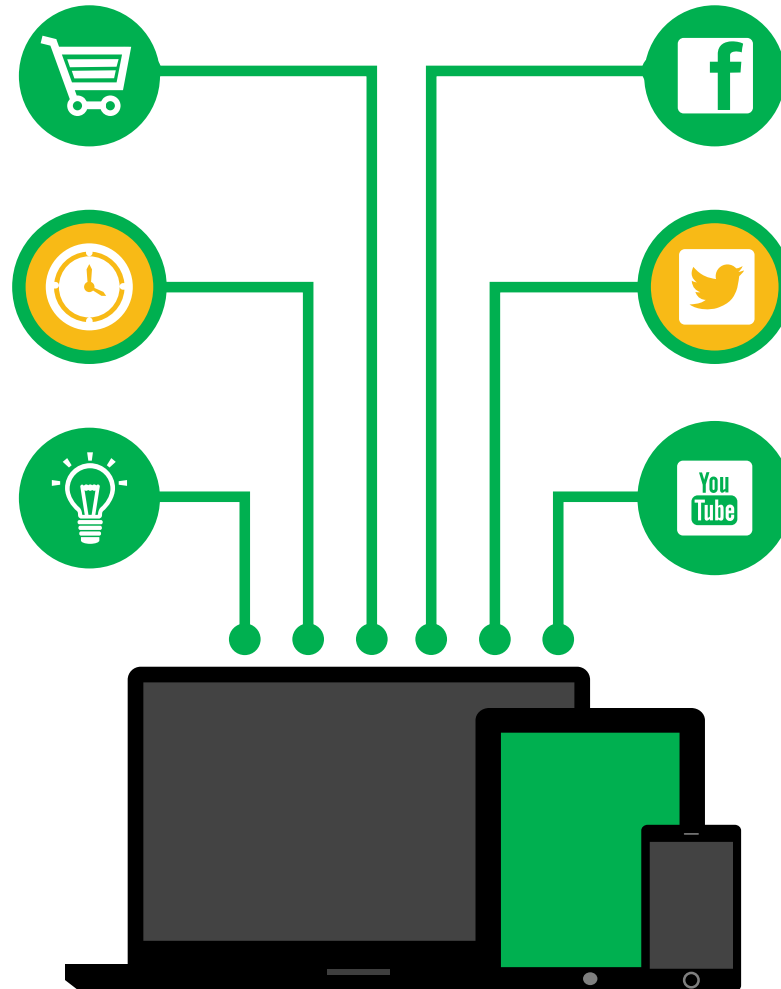
Green ICT - Environmentally sustainable ICT

Implement the approach of efficient ICT equipment:

- ✓ Design
- ✓ Manufacturing
- ✓ Use
- ✓ disposal of

To realize reduction of:

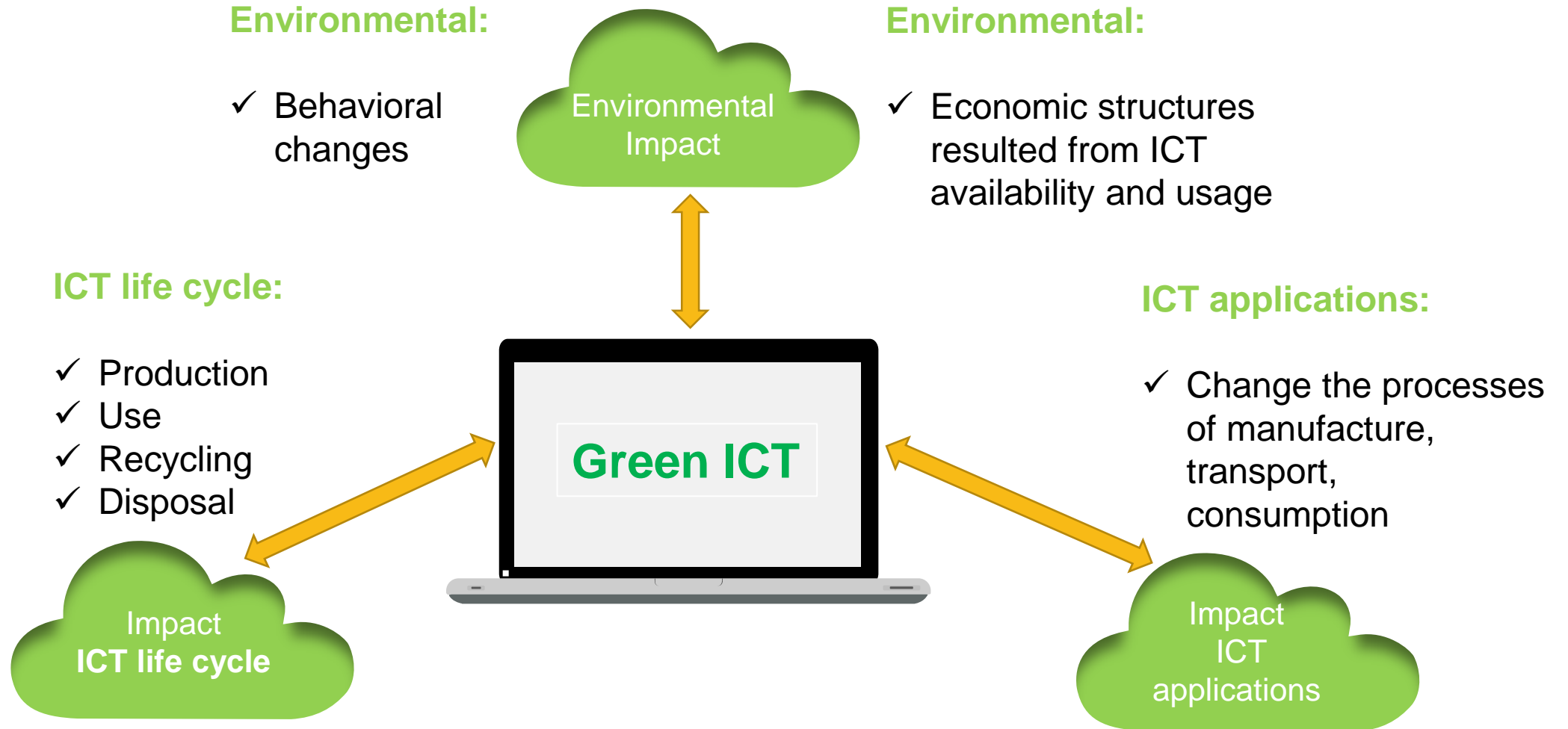
- ✓ Energy
- ✓ Emissions
- ✓ consumption of resources



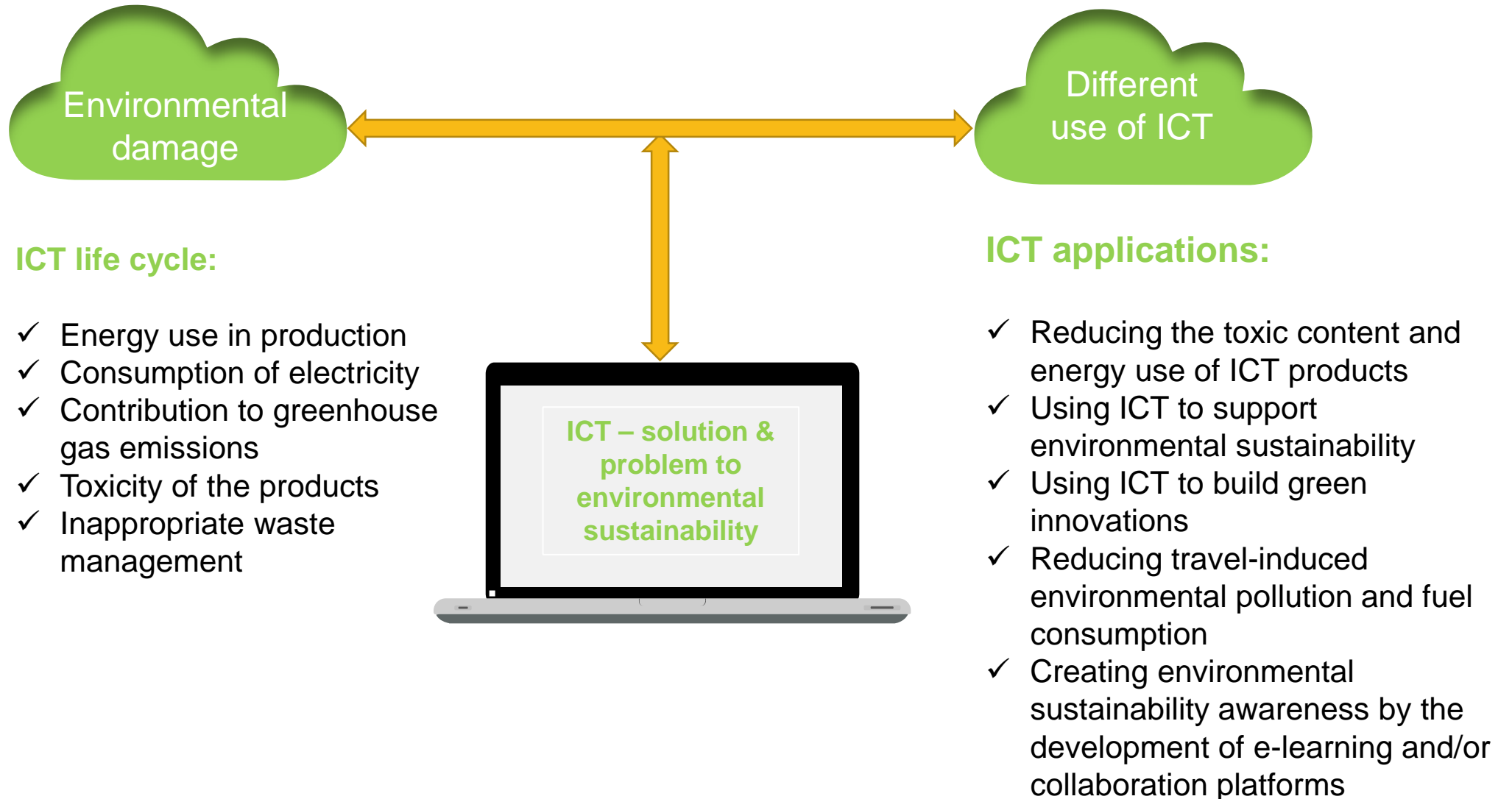
Develop ICT applications to:

- ✓ Optimize energy usage
- ✓ Create a more sustainable environment
- ✓ Promote economic viability and cost effective management
- ✓ Comply with social and ethical limitations

ICT impacts the environment

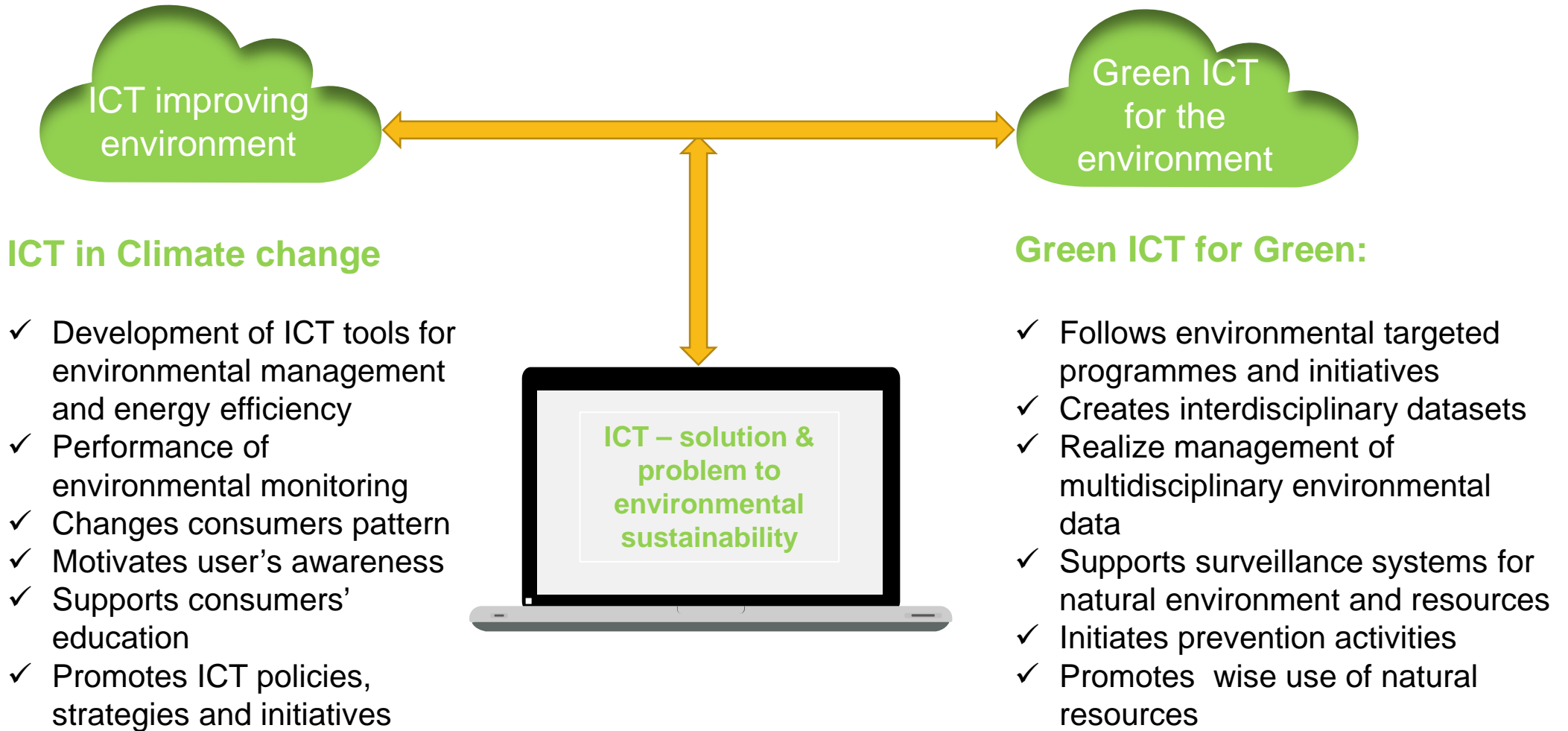


ICT impacts the environment



ICTs improve the energy performance of the activities and reducing their environmental impact

Green activities of ICT



ICT green activities reduce the negative environmental impact

Green ICT benefits

3R principle implementation

- ✓ Reduction of hazardous materials use
- ✓ Promoting the recyclability
- ✓ Proper disposal in an environmental sound way

Energy saving

- ✓ large-scale simulation
- ✓ Optimization
- ✓ Real-time control
- ✓

Energy saving

- ✓ Develop energy efficient hardware
- ✓ Use of energy efficient ICT products



- ✓ Use of ICT in the building sector
- ✓ Smart buildings and infrastructure solutions
- ✓ The concept of Smart City – green ICT investment

Urban sustainability

Green ICT contributions to environmental sustainability



Reduction of energy consumption

- ✓ Development of innovative energy saver systems
- ✓ Implementation of smart energy management tools
- ✓ Making applications for energy saver policies:
 - ✓ Technologies for use of renewable sources
 - ✓ Anti-pollutants technologies
 - ✓ Bio-climatic technologies
 - ✓ Recycling and reducing of electronic waste

IT systems can measure, manage and reduce electricity consumption.

Green ICT contributions to environmental sustainability



Training & Education for environmental awareness

- ✓ Encouragement of learning with wireless or mobile Internet
- ✓ Making available Internet social network groups, blogs, forums, etc. for environmental information
- ✓ Use of this national/international tribune for actions and reactions towards environmental awareness
- ✓ Use of learning software packages and e-services for e-learning, distance-learning, web-based learning, lifelong learning

Enhancement of people's skills and environmental awareness through ICT-assisted learning.

Green ICT contributions to environmental sustainability



ICT facilitating environmental governance

- ✓ ICT supports the advancement of public sector performance through delivery of information and services
- ✓ ICT mediates the active citizens' participation in the decision making process
- ✓ ICT is helping to make the governmental services more transparent and effective
- ✓ ICT plays a key role in supporting the activities of the e-governance (strategies, initiatives, programmes)

ICT facilitates the activity of the environmental governance maintaining a huge diversity of links between properties and decisions local, regional, and national importance.

Greening with ICT good practices



Software systems optimize transportation systems – ‘Kraft Foods’ story



Approach:

- ✓ Launching a smart transportation and logistics management system in 2007
- ✓ Optimize delivery and supply chain routes planning



Result:

- ✓ 1500 trucks less on the road
- ✓ About 2 000 000 km less in driving
- ✓ Decreased greenhouse gas emissions – about 1.500 tons

Greening with ICT good practices



Software systems optimize logistics systems – ‘Forestry industry in northern Europe’ story



Approach:

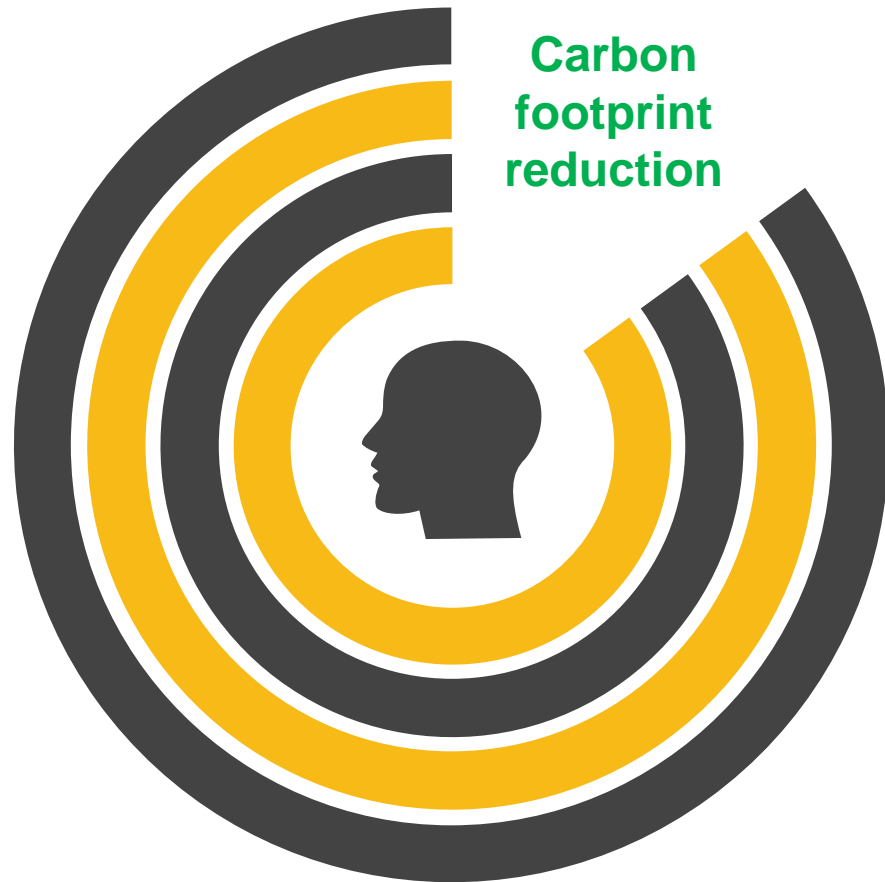
- ✓ Using ICT to eliminate the annual timber wastes
- ✓ ICT application for better matching customers with the right size logs



Result:

- Decrease of 10 percent of timber wastes per year that equals of a forest the size of Luxembourg

Greening with ICT good practices



Software systems for real-time monitoring of the energy demands and use



Approach:

- ✓ High-speed networks for permanent two-way flow of information between customers and utilities
- ✓ Smart energy meters connected to remote adjustment systems
- ✓ Smart electricity grids to conserve energy



Result:

- ✓ Estimated effective reduction of carbon footprint by over 15%



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