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## NiCE Technical Training

# How Green is my IT?

report from the City of Bologna



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Belfast, 19<sup>th</sup> June 2012



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## Is this Green ICT?



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Green ICT vs. ICT for the Green

# Green ICT VS. ICT for Green



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## Why Green ICT matters?

- Globally IT consumes 2 to 4% of global energy
- In Italy IT use accounts for 8 to 10% of Italian carbon emissions
- 60% of Data Centers are running out of power, cooling and/or space
- 70% of landfill lead, cadmium and mercury is from electronic waste



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# Computer vs. refrigerator efficiency



Vs.



=



?



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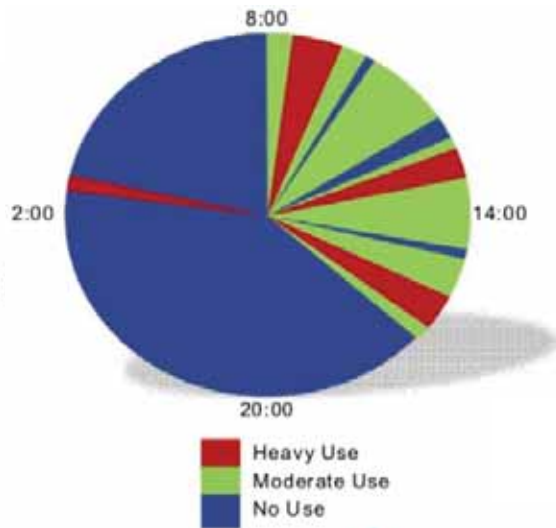
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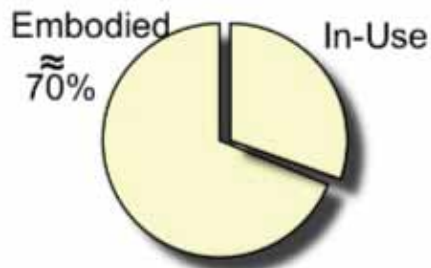
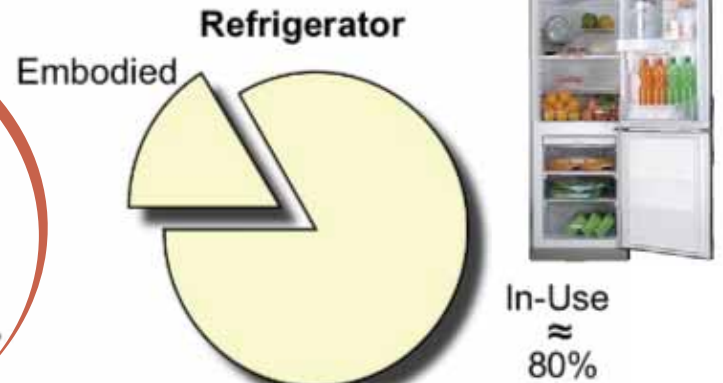
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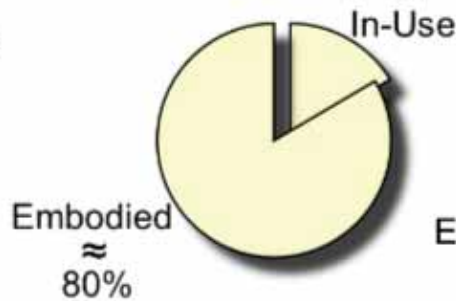
# Full Life Cycle Energy consumption



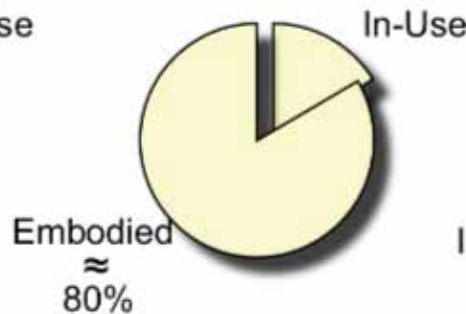
And to top it off, the annual life cycle energy use for a computer is 1.3 times that of the refrigerator.



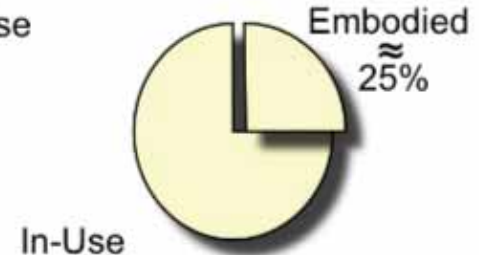
Desktop PC + Monitor



Laptop PC



Cell Phone



Server

IT hardware vendors don't know the full life cycle energy needs of their products. And they aren't optimizing them. Several handset vendors do know and are optimizing, and have made substantial improvements as a result.



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# Motivations...and benefits!

MUST

WANT TO

SEEN TO

MOTIVATIONS

Legislation  
Emission trading

Shareholders  
& Clients  
Pressures

Politicians  
Branding

STAKEHOLDERS

Manufacturing  
Governments  
Energy providers

Telecoms  
Constructions

Transportation  
Communication

OUTCOMES

Emission tracking  
Energy efficiency

Green IT strategy  
Cross initiatives

Quick wins!



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source: Forrester Research, Inc.



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## 4-STEP Green ICT Action Plan

1. Assess your current situation
2. Identify and prioritize your goals
3. Find and execute some quick wins
4. Craft and communicate an action plan





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# 1. Assess your current situation

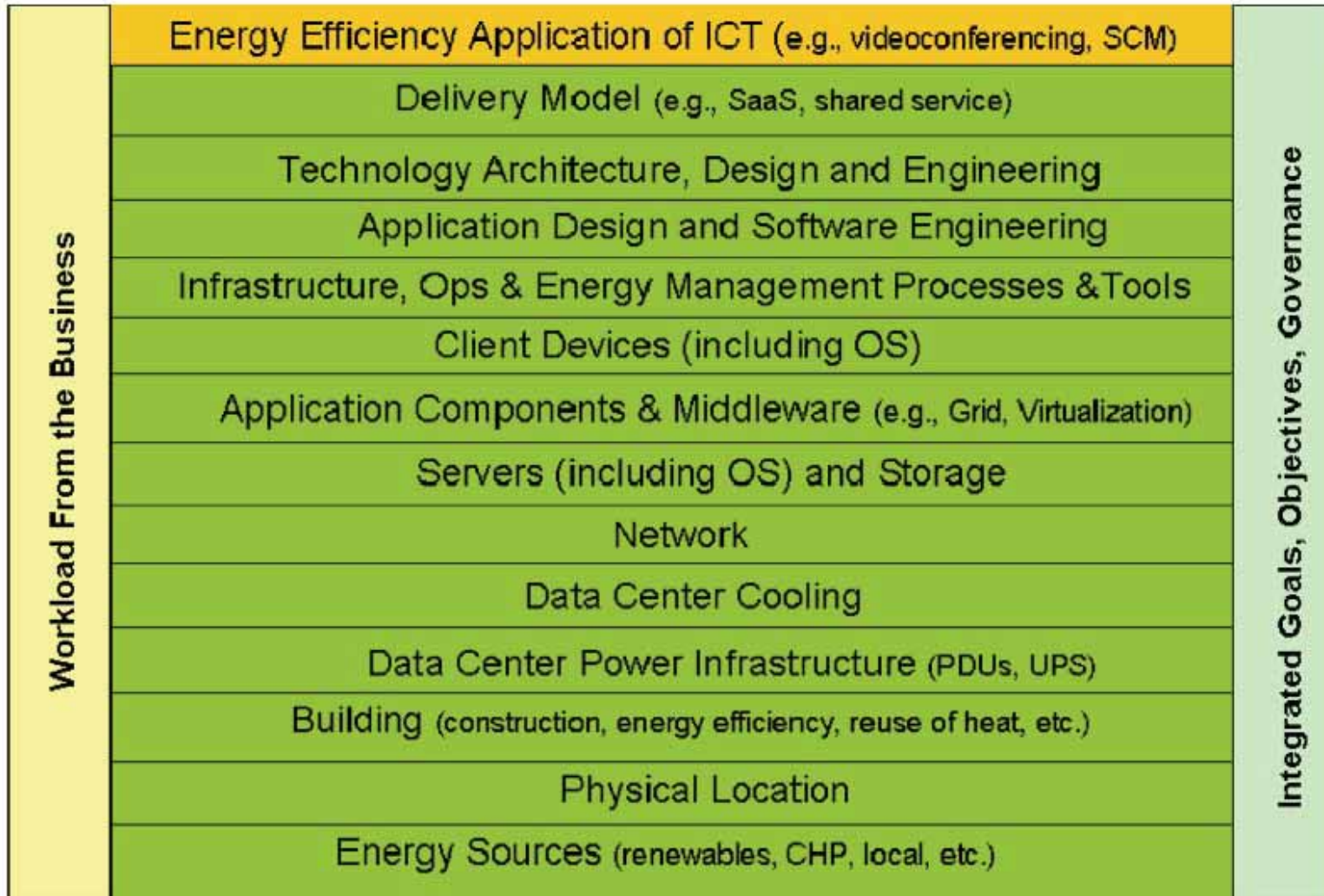
- **Green ICT Scorecards**
- Specify IT's role
- Understand barriers and inhibitors
- Baseline energy usage and origin



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# Consider ENERGY at ANY decision level

There are decision points to be considered at every level from sourcing power to application delivery



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## 2. Identify and prioritize your goals

- Reduce overall electricity usage & spending
- Improve usage of IT equipment
- Differentiate the PA/Company and its product/services
- Align with GDC and other green initiatives!



### 3. Find and execute some quick wins



#### Back Office

- Data center audits
- Energy monitoring
- Power and cooling
- Infrastructure consolidation
- Server virtualization



#### Green Desktop

- Paperless office
- Power management
- Procurement policy
- Thin client computing
- Video conferencing/collaboration



#### Green Office

- Green energy
- Intelligent buildings
- Supply chain benchmarking
- Employee buy-in
- Home working policy





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## 4. Craft and communicate an action plan

- Emphasize internal viral marketing
- "Certify" green digital ideas and initiatives
- Create social networks for employees and managers
- Recognize effort and complexity!



# Recognize effort and complexity!



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# Green ICT scorecard

an example



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## Methodology (in Bologna)

- It took 4 months (2 data collection + 1 data analysis & validation + 1 finalising results)
- Multi-Department kick-off and support
- Comparison with 9 European "Peer" Governments
- Anglo-Saxon approach!



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## Gartner Green ICT Scorecard Areas

- 1. Sustainable Development / Corporate Social Responsibility** how to support the reduction of CO2 emission for PAs, Corporates and clients
- 2. Energy efficiency / Equipment optimisation** how to reduce the impact of ICT on the environment
- 3. Green IT Policies** how to foster standard policies and politics of green procurement, recycle, and efficient waste disposal

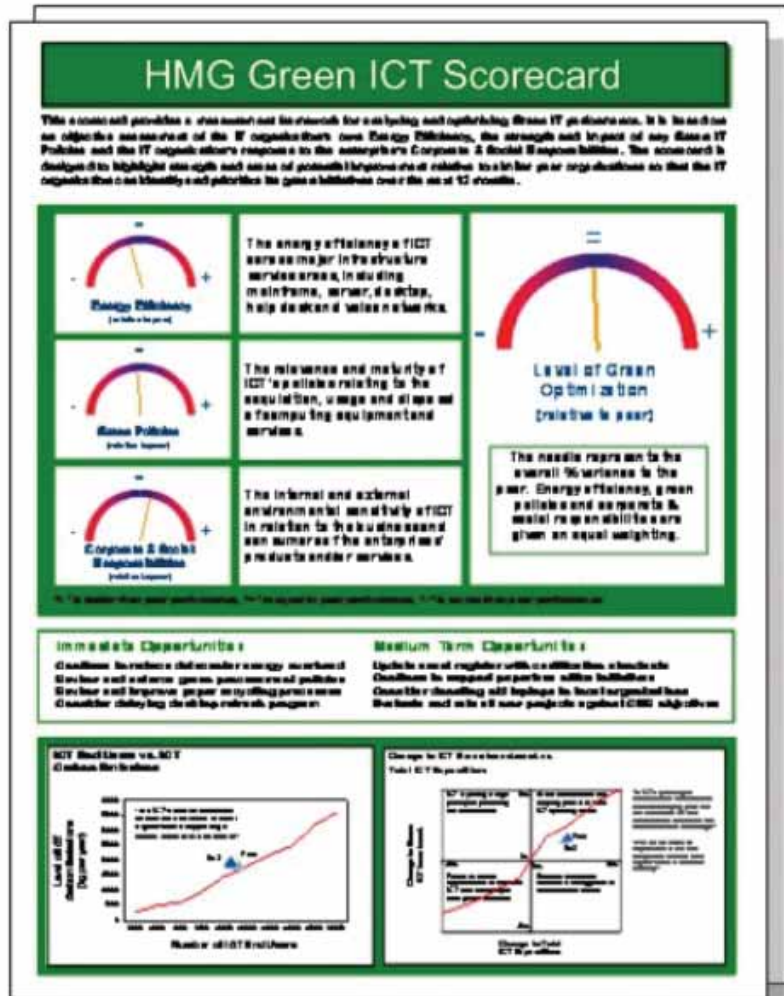


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**Gartner**



# Gartner Green ICT Scorecard Example



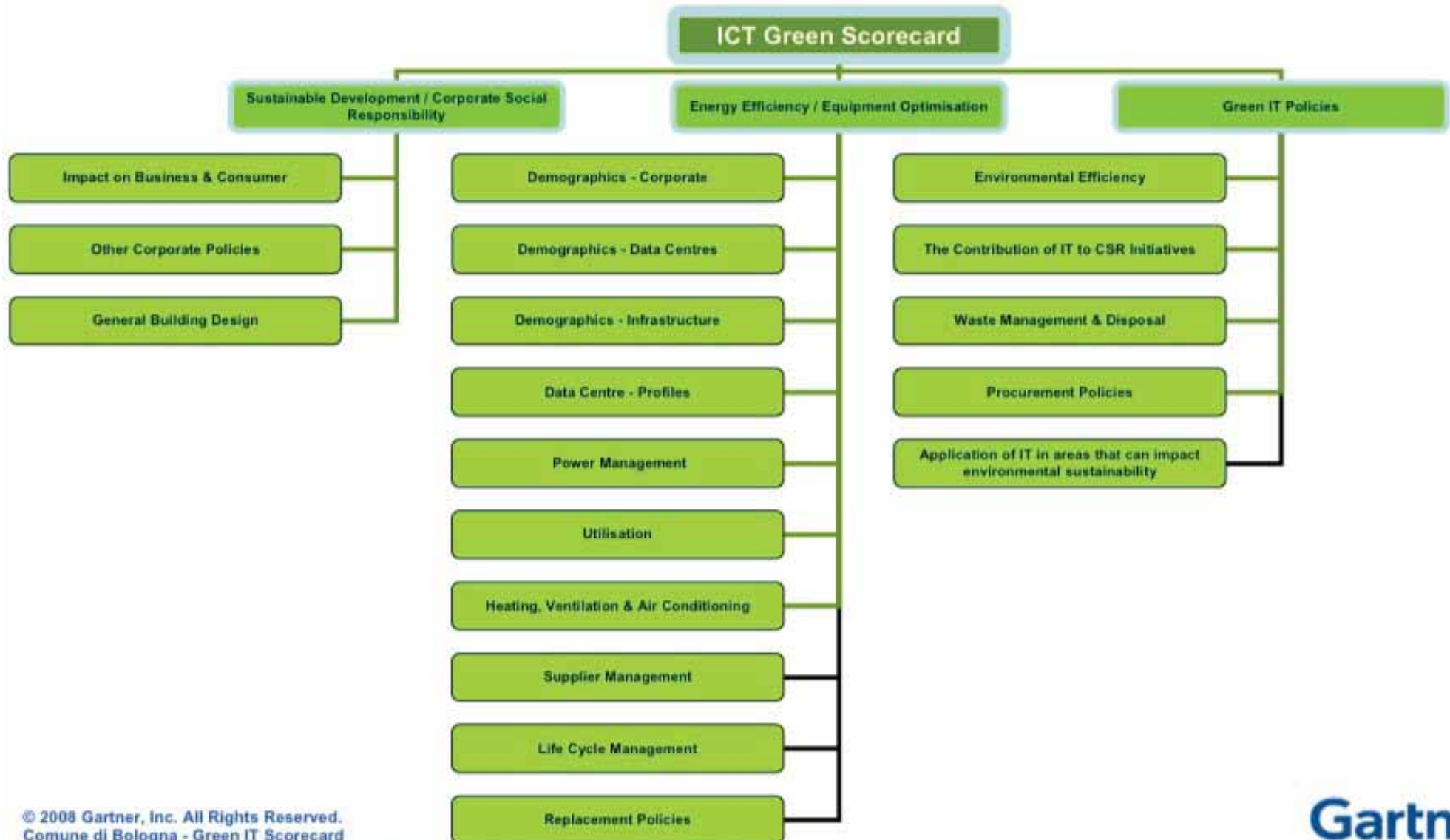
- It includes a management report that can be used to develop internal action plans and communications.
- The front of the Scorecard shows performance relative to other ICT organizations in the Gartner database

## Green Opportunity Map



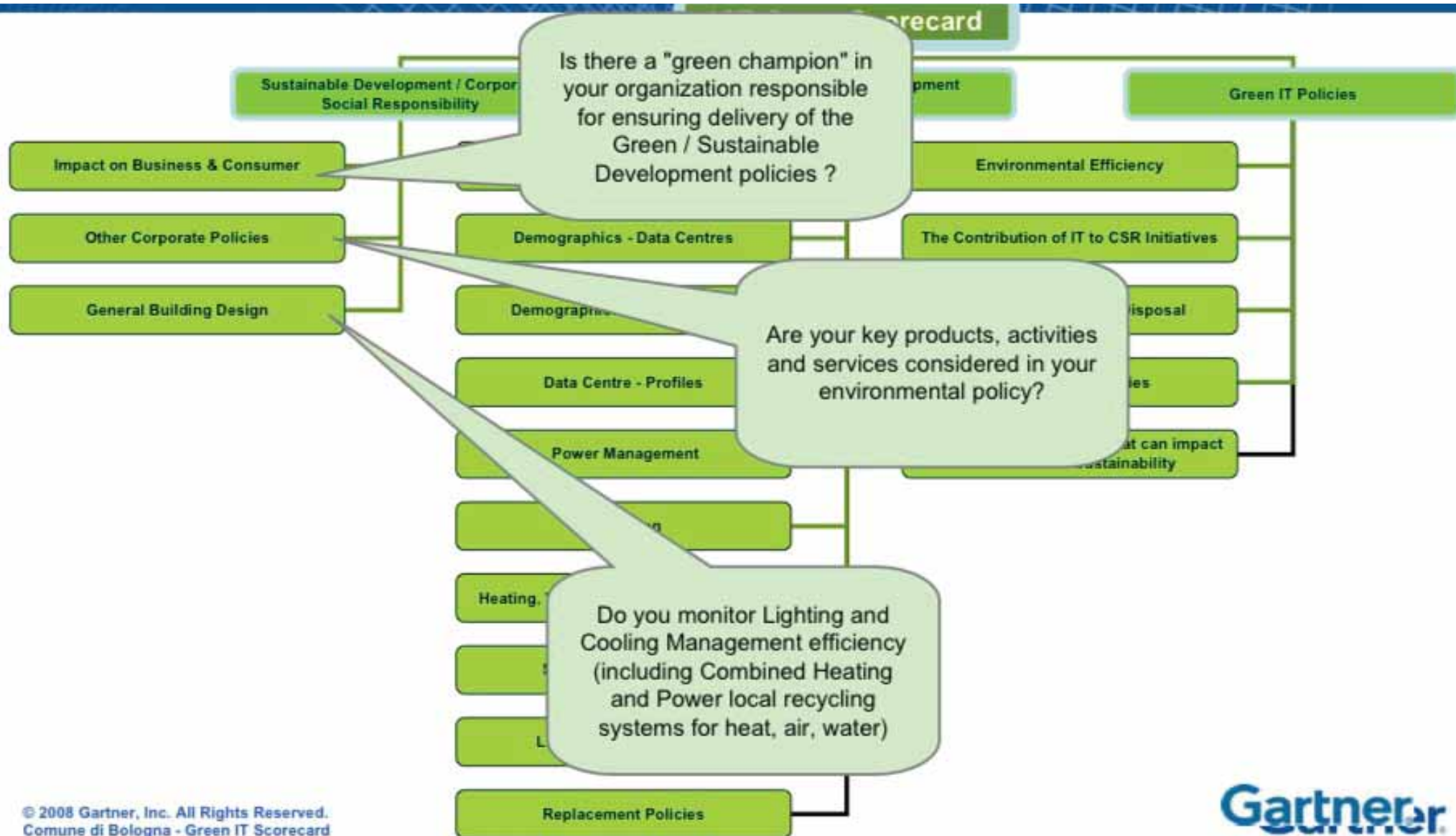
310 Questions in Scorecard

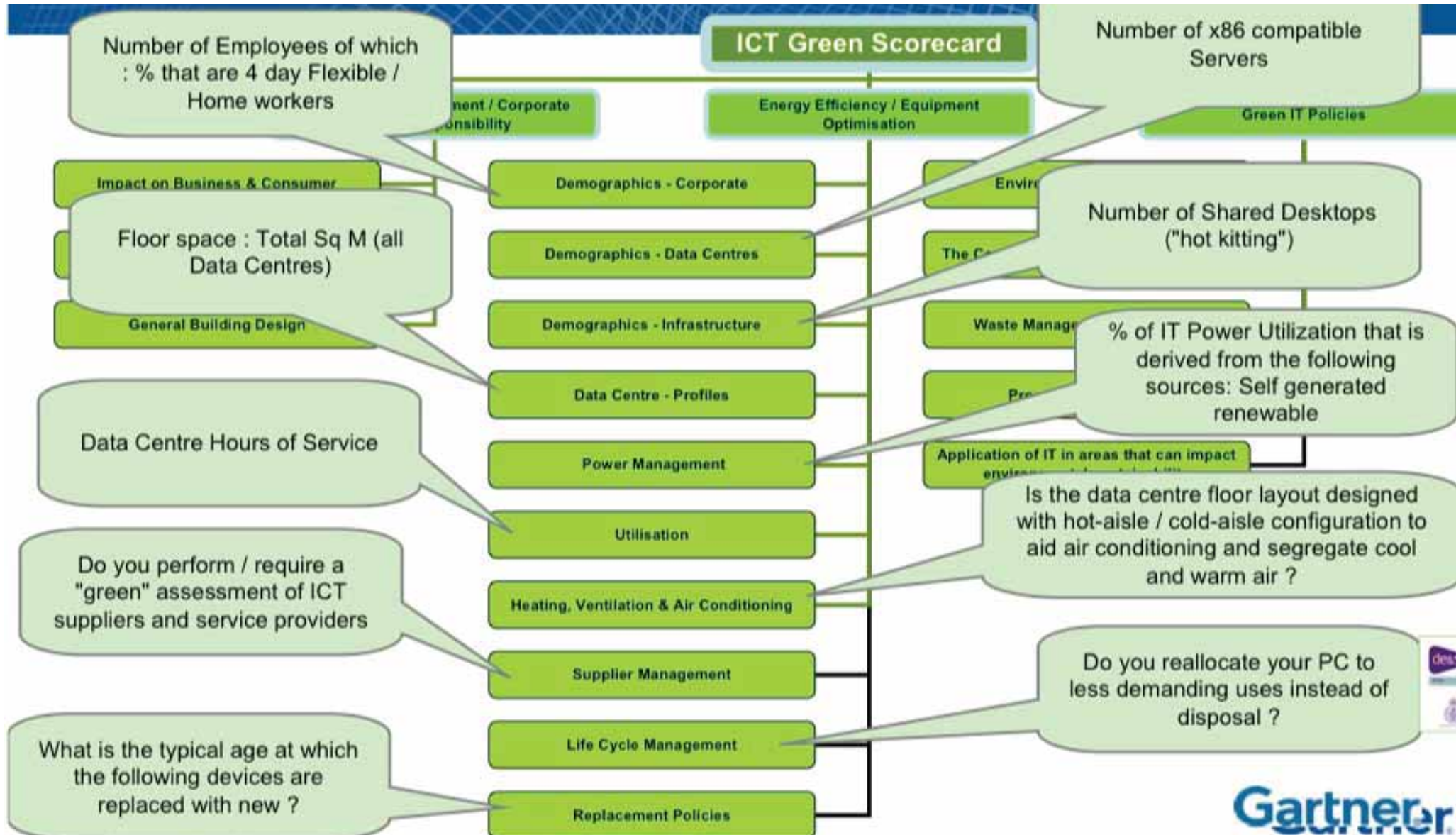


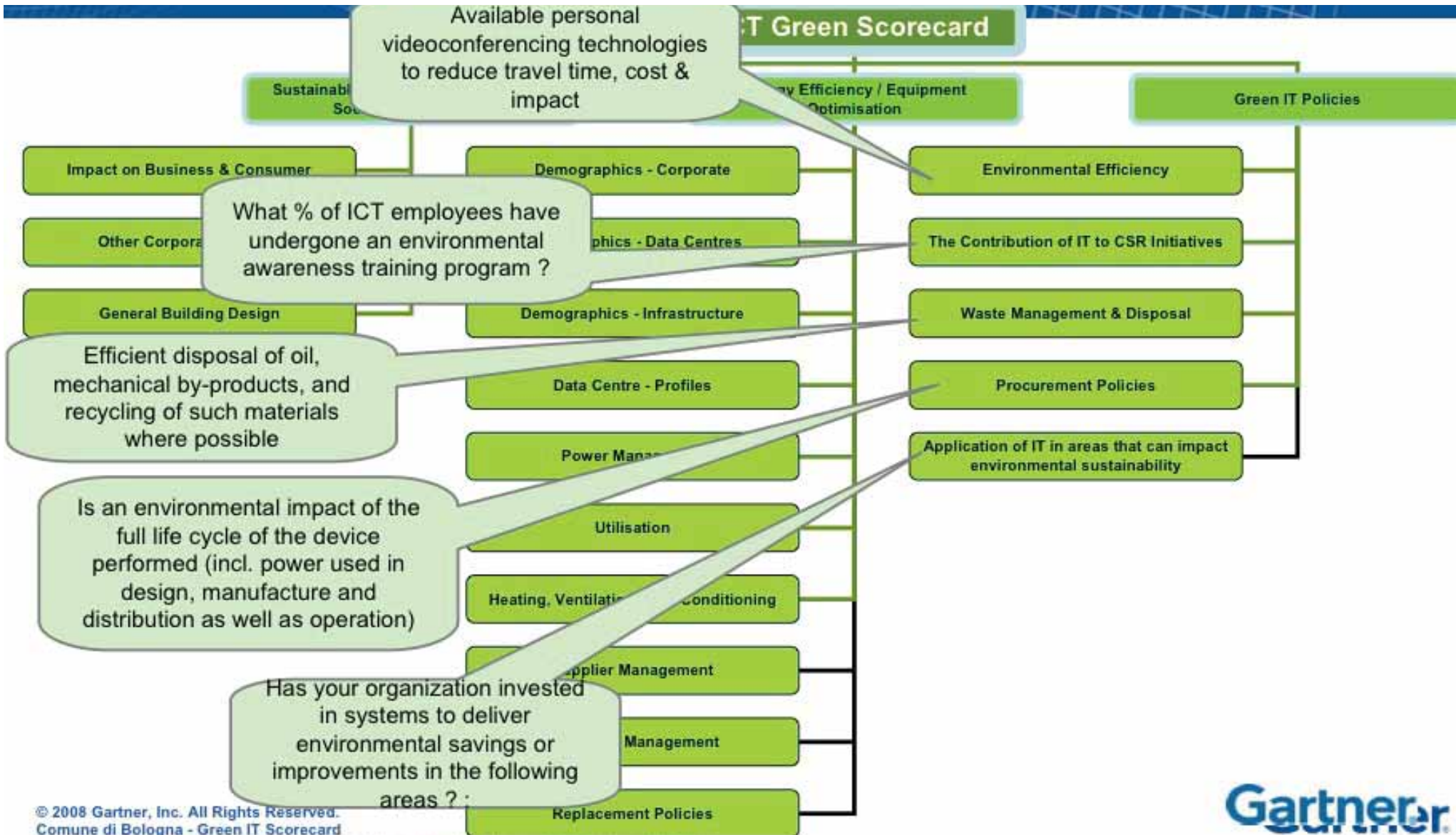




# Sample Questions



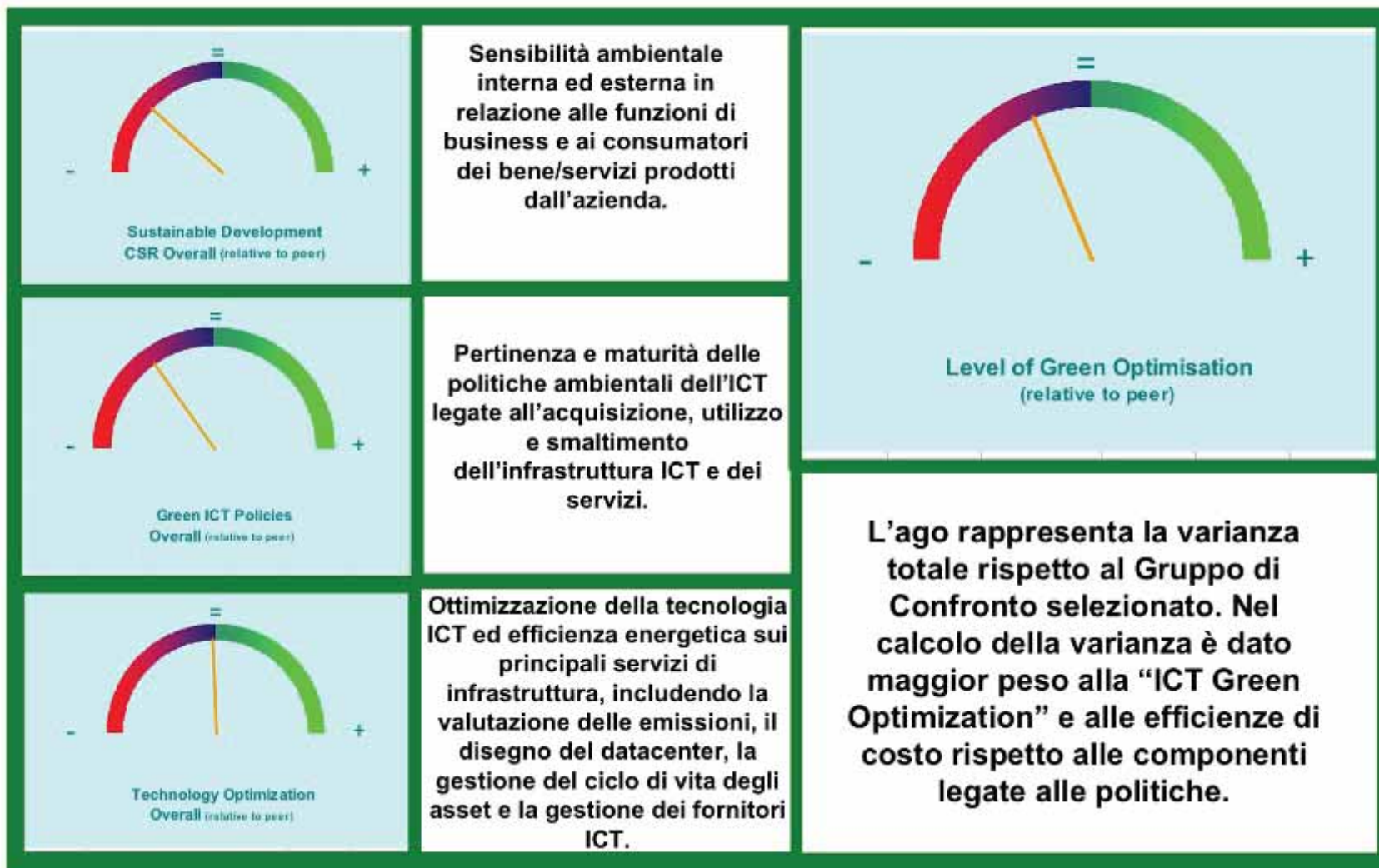






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# Overall results for the City of Bologna



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## Some recommendations on the client side

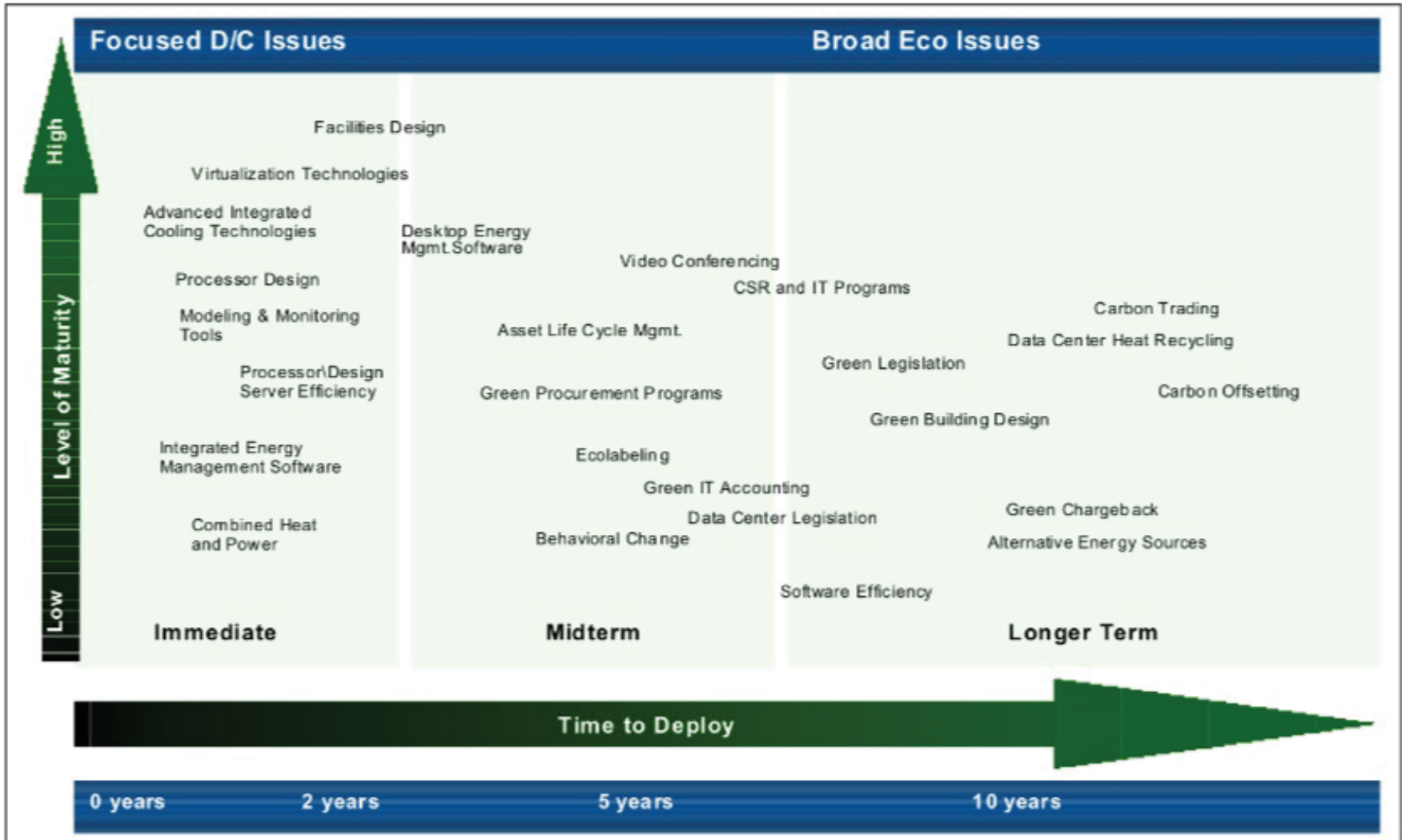
- Set printers in duplex mode, without printing a header or separator and dismiss personal printers
- Remove screensavers and turn off computers at night
- Foster teleconference and audioconference
- Foster tele-working, laptops, tablets, mobile access and cloud storage





## Some recommendations on the server side

- Increase Server virtualization up to 90% in 4 years
- Mapping data center to monitor energy consumption of data centers
- Implement "Combined heat & power" systems
- Green procurement should be a policy
- Identify and educate an ICT "Green Champion" to promote green policies





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# SMARTiP project

## Smart Metropolitan Areas Realised Through Innovation & People

CIP – ICT-PSP 2010

Pilot Type B

[www.smart-ip.eu](http://www.smart-ip.eu)

Project start date: November 1st 2010

Duration: 30 months



The aim is to enable to adoption of open platforms for the co-production of citizen-centric Internet-enabled services in five test-bed sites, Manchester, Gent, Cologne, Bologna and Oulu. The objective is to enhance the ability of the cities to grow and sustain a 'smart city' ecosystem which can support new opportunities emerging for a dynamic co-production process resulting in more inclusive, higher quality and efficient public services which can then be made replicable and scalable for cross-border deployment on a larger scale.

This will focus on a series of pilot projects covering three thematic areas:

Smart engagement

Smart environments

Smart mobility



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# Smart City Exhibition in Bologna

**29 - 31 October 2012**

**"Smart City Exhibition" in Bologna**

**European Event on Smart Cities**

**Bologna Exhibition Centre**

**Workshops, Seminars, Show cases, Laboratories**

**in collaboration with the City of Bologna**

**[www.smartcityexhibition.it](http://www.smartcityexhibition.it)**

**Save the date!**



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Thank you  
*for your attention*



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