Energy efficiency in networked devices
Products standards and protocols

Flavio CUCCHIETTI – Telecom Italia Engineering & TIlab
Standardization → an unavoidable step ... but ...

GeSI EE IOCG Standardization Map – December 2009

Standardization → only on few areas and not synchronized among SDOs
- fragmented/with gaps and overlaps

Real and coordinated action WAS (and IS) still needed
Standardization

- Few actions
- Focused on “static”, single equipment efficiency
  - While networked equipment consumption depends on all other elements
- New opportunities to reduce consumption through:
  - “Dynamic” and network wide optimization
    - “connecting the dots”
  - Using the power of the cloud
    - proxying/mimicking functions into the cloud
  - SDN (risk/opportunity)
- These are challenging topics that need:
  - Clear objectives and will
  - Engagement of industry
  - Cooperation of research and universities
  - Connecting international research projects with standardization
**“Static” energy efficiency and (work)load proportionality**

- **Energy efficiency in ICT** → improving too slowly
- **Consumption in idle/standby** → weakest spot
- **Network equipment** → far from load proportional


**Load**

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<tr>
<th>Tier 2013-2014:</th>
<th>Tier 2015-2016:</th>
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<td>Idle-State (W)</td>
<td>Idle-State (W)</td>
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Flavio CUCCHIETTI
“Dynamic” optimization

• Some good initiatives have been accomplished:
  • Energy Efficient Ethernet (IEEE)
  • Proxying support for sleep modes (Ecma)
  • Universal mobile charger (ITU and IEC)
  • Universal power supply (ITU)
  • Green abstraction layer (ETSI)

• Other are ongoing
  • “Improvement of the energy efficiency in networks” (ITU/ETSI)
  • ...

• Problem
  • Very slowly implemented
Standards and protocols

- Voluntary initiatives have been very successful (Energy Star, EU Codes of Conduct) ...
- ... labeling could play a role ...
- ... but efficiency for networked devices need more efforts

Within standardization:
- The perception is that energy efficiency is not a real and urgent need
  - more like a “nice to have” than a really strong requirement
- There are still doubts it could:
  - reduce quality of equipment
  - worsen the user experience
  - hamper innovation

- Meanwhile market competition is on “peak” functionalities and time to the market
Standards and protocols

- A quantum leap is needed
- Stakeholders have to be convinced that energy efficiency is a priority (and means business)

**Government and Regulators need to drive the game directing standardization priorities**

Today in standardization, they are only participating to part of the ITU activities

- One of the schemes that look very effective in driving energy efficiency in the energy sector are the “withe certificates”
  - In Italy they are applied to ICT too
  - Such experience could be well extended
Thank you

flavio.cucchietti@telecomitalia.it