Missouri Public Service Commission
Smart Grid Technical Conference

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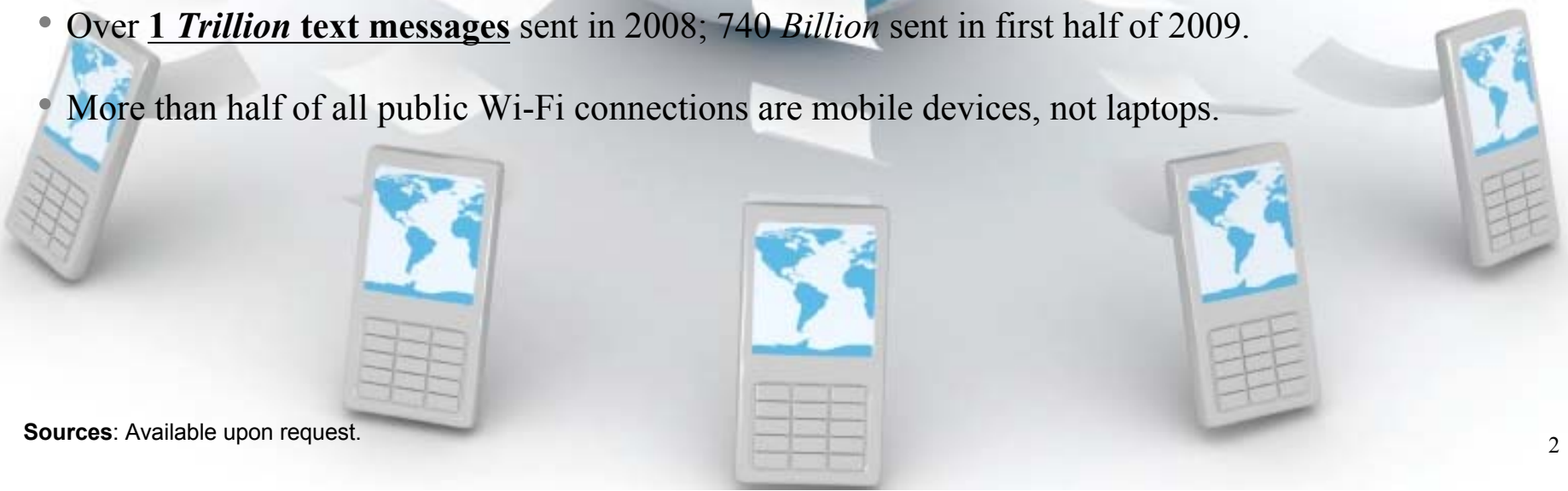
Wireless Broadband Facts & Figures

- More than **285 million subscribers**, more than 59 million mobile broadband subscribers.
- Over **630 unique wireless devices**, Over 85% are Internet capable.
- One Smartphone generates more **data traffic** than 30 basic-feature cell phones.
- More than 92% of US population has **access to 3G (wireless data)** technology.
- Over **100,000 Apps** available from six different stores, Over 3 billion downloads.
- Over **1 *Trillion* text messages** sent in 2008; 740 *Billion* sent in first half of 2009.
- More than half of all public Wi-Fi connections are mobile devices, not laptops.



Sources: Available upon request.

Wireless Broadband & Sustainability

Smart wireless communications can reduce carbon emissions and cut energy costs.

- **Consumer applications and machine-to-machine innovations**

- **Wireless technology provides real-time access to energy information**
  - **Increasing efficiency at all points in the grid.**

"Wireless is going to be one of the key tools we use to solve the climate crisis."

- Al Gore, Former Vice President, Nobel Peace Prize Winner, at CTIA Wireless® 2009

Wireless Broadband & A Smarter Grid

Wireless networks are an ideal solution for Smart Grid applications.[1]

- Wireless **carriers** have network expertise, and a robust (and expanding) footprint of "broadband to the person."
- **Consumers** can monitor and adjust usage anywhere with Smartphones = Meeting consumer demand.
- **Utilities**, in partnership with wireless providers, can detect outages and establish real-time demand response solutions through wireless platforms.

The **FCC's National Broadband Plan** prioritizes industrial broadband for the smart grid, and enabling the energy information economy.[2]

Use of existing networks is an **efficient and sustainable** way to leverage existing infrastructure and furthers two nationwide policy goals (broadband deployment & smart grid implementation).

1 ***See*** **CTIA Comments in FCC National Broadband Plan NOI #2 (Smart Grid) (Oct. 2, 2009, available at http://files.ctia.org/pdf/filings/091002_FILED_Smart_Grid_PN_Comments.pdf**

2 ***See*** **FCC National Broadband Plan (March 17, 2010), available at http://www.broadband.gov/.**

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How do CMRS providers participate in the Smart Grid?

- Use of commercial wireless leverages the carriers' robust/expanding **footprint** and network **expertise**. Carriers are "the pros" at running networks.
- It's more cost-effective and environmentally efficient to run **one network** (commercial) **vs. two** (commercial & dedicated utility). Deployment accomplishes two big-picture goals: smart grid & broadband deployment
- Stakeholders recognize that consumers will want this info everywhere, hence **mobile**.
- **Consumers** can monitor/adjust usage of appliances, PHEVs, and electricity via wireless device.
- **Utilities** can detect outages and establish real-time demand response solutions through wireless platforms.

How else does wireless increase energy efficiency?

- Traffic planning
  - Nokia/NavTeq/CalTrans/Cal Berkeley's "Mobile Millenium" project
- Smart logistics (reduces idling, "truck rolls")
  - Qualcomm mini-transponder example for inventories (@ IT&E 2009)
- The advent of telecommuting

Smart Grid Policies: A Complex Patchwork

- **FCC** National Broadband Plan energy recommendations:
  - Exploring use of commercial networks
  - Congress to consider utilities' use of 700 MHz
  - States should establish energy data sharing policies.

- **FERC** regulates interstate transmission; **DOE** places conditions on ARRA smart grid grantees; **NIST** establishes technical standards

- **State PUCs** decide on ROI, incentive structures, data ownership/privacy standards, with guidance from **NARUC/FERC Smart Grid Collaborative**.

Wireless Broadband Policy Recommendations

- As state regulators review ROI, network security/privacy, and incentives for smart-grid deployment, policies should encourage **use of existing networks** and **utility/communication provider collaboration**.
- State and federal regulators should establish policies that allow the "**applications economy**" to flourish.
- The FCC should focus on **spectrum allocation and efficiency** to ensure that networks have sufficient bandwidth to handle data-intensive smart grid applications. After all, spectrum is "the oxygen of our mobile networks."
- Reasonable **network management principles** should recognize that "wireless is different" and has unique network congestion concerns.

Appendix

CTIA Comments in FCC National Broadband Plan Notice of Inquiry re: Energy Efficiency

http://fjallfoss.fcc.gov/ecfs/document/view?id=7020040420

State Regulatory Proceedings

- State regulators as "professional skeptics," hard-headed cost-benefit analysts.

- **California**
  - Requiring electrics to provide data-sharing plans
  - Investigation of smart meter problems
- **Colorado**
  - PUC seeks rules preventing data-sharing without express customer consent
  - Regulatory review of landmark XCel Energy SmartCity (Boulder)
- **Pennsylvania**
  - Requiring electrics to provide data-sharing plans
- **Texas**
  - Review of Smart Meter TX (Houston) & Pecan Street Project (Austin)