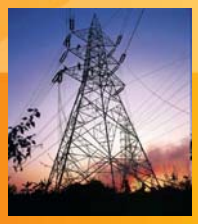
AT&T and Smart Grid

Avoiding Network Duplication: Policy and Practical Considerations for Designing Smart Grid Communications



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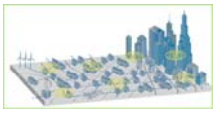
CITI, December 3, 2010

What is SmartGrid?

Smart Grid is a vision for a digital upgrade of distribution and transmission grids to both optimize operations, as well as open up new markets for alternative energy. Benefits also include the ability to reduce power consumption; and eliminating or containing grid failures; thus save consumers money and help reduce CO_2 emissions.



- Reliable
- Secure
- Economic
- Efficient
- Environmentally Friendly
- Safe

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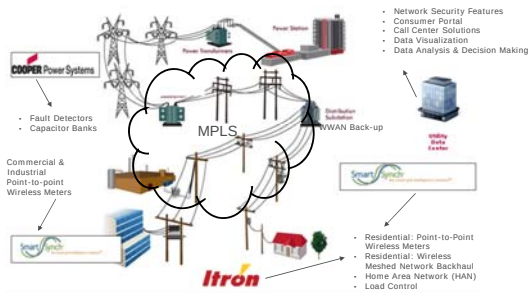
Smart Grid Components

How AT&T Currently Overlays



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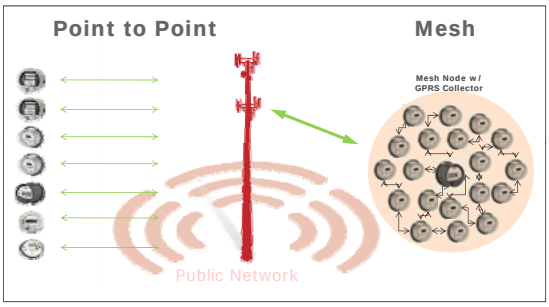
AMI Architectures



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Avoiding Network Duplication

Can commercial communications providers effectively and economically provide the services that utilities need to power their Smart Grid communications?

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Commercial Providers:

- **Scalable, Broad and Affordable Coverage**
  - Highly cost-competitive with purpose-built networks.
  - Already cover almost 98% of population.
  - Providers continually building out and scaling network over time.
  - Fill remaining holes faster than building a new network.
  - Satellite service available to fill in holes.
  - Data management, storage, computing & analytics.
  - Migration path from HSPA 7.2 to LTE, into 2011
  - Added Bonus: Business case for deployment of broadband to unserved areas.

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Commercial Providers:

- **Interoperable** - Must support various devices attached by utilities and energy consumers.
  - Commercial networks support almost endless variety of devices and applications.
  - Facilitate communication across various platforms.
- **Secure and Reliable** – Paramount concern for interconnected networks
  - State-of-the-art security operation; daily support for nearly 21 Petabytes of IP data traffic.
  - Experience and expertise; see security threats emerging, before they cause harm.
  - Emergency Priority Service.
  - Extensive disaster recovery assets already in place.

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Commercial Providers:

Network Capacity: If every gas, water and electric meter in the U.S. transmitted at 15-minute intervals, it would increase commercial wireless traffic less than 2/1000th of one percent.

Efficient Use of Spectrum:

- Wireless providers have purchased spectrum on open market and have incentive to use it as efficiently as possible.
- Balkanized or government-directed spectrum use reduces efficiency.
- Utilities have not been motivated to participate in spectrum auctions.

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Policy Statements in FCC National Broadband Plan

- Examine reliability and resiliency of commercial broadband networks
- Reduce impediments to utility use of commercial services
- Clarify application of NERC-CIP requirements
- Consider legislation to allow utilities to use 700 MHz spectrum
- Identify new uses for federal spectrum
- Study communications requirements of utilities

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