

Center for  
TECHNOLOGY,  
INNOVATION,  
COMMODITY  
ENGAGEMENT

**The Urban Cyberspace Company:  
Practical Problems and Emergent Business Opportunities  
in Green Broadband**

Broadband Networks and Smart Grids at the  
Crossroad between ICT and Energy  
CITI Conference  
Columbia University  
December 3<sup>rd</sup>, 2010

Center for  
TECHNOLOGY,  
INNOVATION,  
COMMODITY  
ENGAGEMENT

## Outline

1. Introduction
2. About Urban Cyberspace
3. 1400 on 5<sup>th</sup> and The Kalahari
4. The Sixth Utility and Old Capitol Green
5. Evolution of the Urban Cyberspace Company
6. Emergent Business Opportunities

Center for  
TECHNOLOGY,  
INNOVATION,  
COMMODITY  
ENGAGEMENT

## About Urban Cyberspace

- Designer/developer of Internet network technologies for the Full Spectrum Development Company, one of the leading green builders in the country
- Developing green/smart buildings is a real-world engineering challenge (ie, operationalizing software-driven control systems)
- Organic evolution from broadband to green buildings – it can't be green unless it's smart!

Center for  
TECHNOLOGY,  
INNOVATION,  
COMMODITY  
ENGAGEMENT

## 1400 on 5<sup>th</sup> and The Kalahari

- 1400 on 5<sup>th</sup>: \$40m development pioneering the idea of a building as a holistic system
- Carbon-neutral
- Kalahari: \$100m development



Center for  
TECHNOLOGY,  
INNOVATION,  
COMMODITY  
ENGAGEMENT

## What is the “Sixth Utility”?

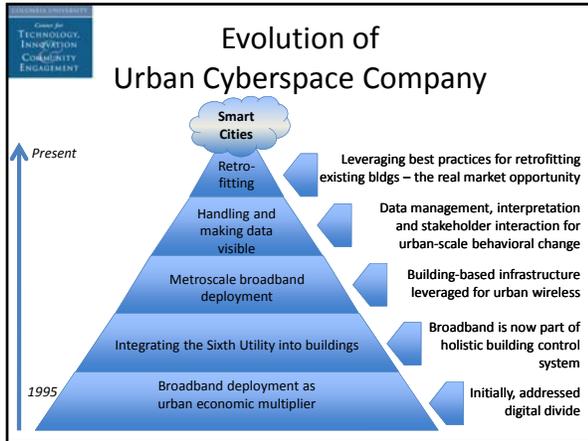
- In addition to HVAC, water and electricity, the Sixth Utility is the fiber optic network located in a building's vertical conduits
- The Sixth Utility is the control system for the entire building
- Internet-based systems drive building efficiency towards a carbon neutral goal
- How did we get here?

Center for  
TECHNOLOGY,  
INNOVATION,  
COMMODITY  
ENGAGEMENT

## Old Capitol Green

- Test bed for systemic approach to green building and metro-scale technologies





- Center for TECHNOLOGY, INNOVATION, COMMUNITY ENGAGEMENT**
- ### Emergent Business Opportunities
- Emergent business models and the Sixth Utility
    - **Vetted text:** Urban Cyberspace will apply the Sixth Utility concept to the design and development of not only the fiber optic connectivity that will be deployed in the vertical conduits of each building but also the design of a metroscale gigabit speed fiber optic wireless hybrid network for the city itself. The system integration will be carried out by Johnson Controls. This network will handle the Internet traffic for the City of Jackson and the surrounding metropolitan area. This also entails the development of an electrical internet or smart grid for the city of Jackson. One of the things we've discovered is that the conception and thus the subsequent design of the smart grid even on the scale of a tier two city like Jackson is much more complex than originally imagined.
    - In Jackson: Fiber in vertical conduits; provision Gigabit network in the City of Jackson, growing it to a Terabit
    - Provides foundation for ubiquitous metro wireless network: BB needs include edge-of-network sensor technologies as well as electric transport
    - Tailoring HCI to the needs of different populations (tenants, visitors, utilities, local government)
    - Ultimately the network will drive urban-scale behavioral change, but it is a question of making data visible – consumption; awareness of how these systems interact
    - Retrofitting this paradigm to existing buildings

**Center for TECHNOLOGY, INNOVATION, COMMUNITY ENGAGEMENT**

### Backup slides