

# Social Sharing and Engagement Around Community Energy Monitoring

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# Motivation and Problem



Control 4 EMS-100



AlertMe Monitor



Home Joule

Today's eco-feedback technologies don't address these issues

- (Low-income) renters often live in uncontrolled environments
- Multiple stakeholders often affect energy consumption in low-income and/or renter communities  
[Dillahun, *et al.*, 2009; Dillahun, *et al.*, 2010]
- Issues of power between landlords and tenants and energy-related conflict

# One Solution

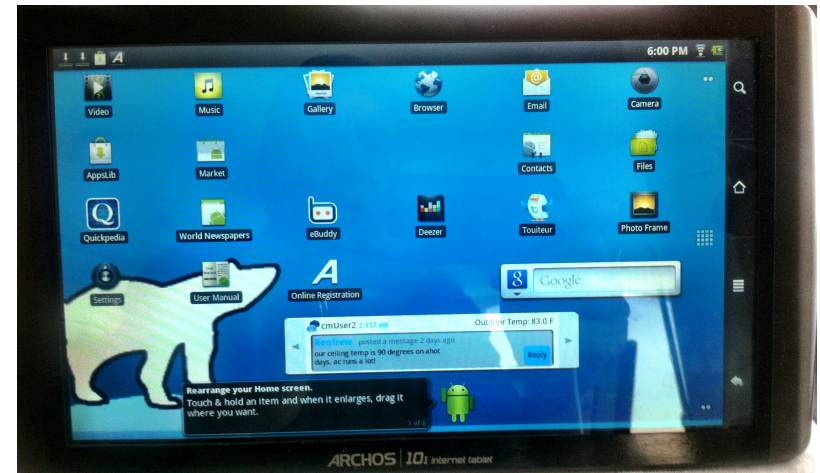
- Raise awareness of energy consumption and conservation behaviors
- Encourage communication and comparison to address energy-related issues
- Understand how households engage around energy data



# Application Overview

## Tablet-based

- Low cost in comparison to laptops
- Portable and are likely to be shared
- Engaging  
(i.e., supports wifi, which allows for Internet access, games, email, and other appealing applications)



Very low consumption



# Application Features

- Leaderboard/Community Rank (avg. daily kWh)
- Ways to share energy-saving tips with others
- Community Message Board
- “Real-time” consumption on widget

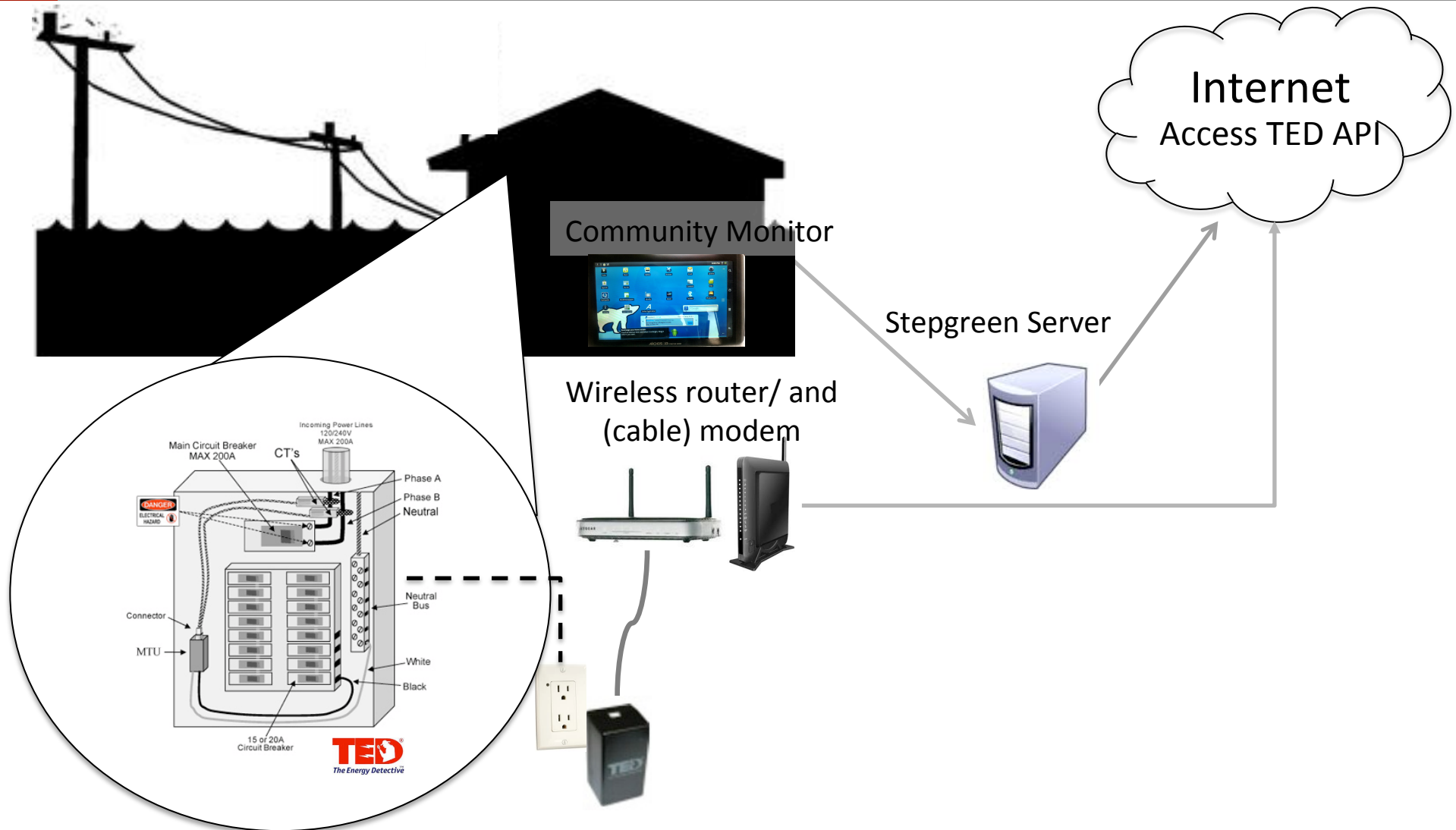


1<sup>st</sup>, 2<sup>nd</sup>, etc.  
ribbons  
represent  
household  
rank/place

Community  
Engagement



# Deployment Overview



# Study Overview



- 4-10 month qualitative field study across 15 households

- Two Communities (Pittsburgh, PA)

## **Location 1 (N=6)**

- Mixed income
- Tightly-knit community
- 2/6 paid for electricity

## **Location 2 (N=9)**

- Low income
- Newer community, not as tightly knit
- No one paid for electricity

- Data collected

- Surveys
- Bi-monthly interviews
- Consumption impact



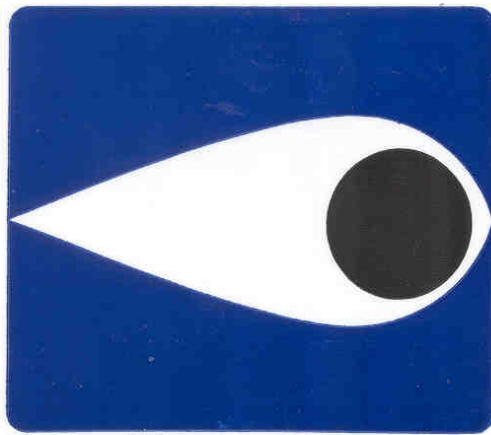
# Results Summary

- Participants integrated use of our application and tablet into their existing routines
- Energy-related issues identified
- Social engagement increase
- Barriers to social engagement
- Consumption impact and behavior change

# Design Implications

Future applications should support and encourage the social roles that households take on

Neighborhood Watch



Investigative



Social roles portray how people in certain positions are expected to behave and these roles come with normative beliefs (could be used to hold households accountable to certain behaviors)

# Design Implications

Social applications should encourage community building in and outside of the application to build community trust



Community building can reduce the uncertainty about members' behaviors and intentions, which is necessary for developing norms of reciprocity and trust  
[Berger and Calabrese, 1975]

# Design Implications



Social applications should support a framework for the discussion of building-wide issues safely and privately



# Key takeaway

Eco-feedback displays should be more comprehensive:

- Consider populations with little control over their environment
- Not everyone pays for electricity
- Consider stakeholder conflict

# Thank you!

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