PPL Electric Utilities

PPL offers a suite of residential and commercial energy-efficiency programs.
Connected Lighting Pilot Overview

- 300 “early adopter” participants
- Lighting hub with smartphone app
- 5 preconfigured LEDs in each kit
Pilot and Evaluation Objectives

Insight into preferences of targeted audience
  • Targeted recruiting
  • Motivations and satisfaction
  • Interest in connected technology
  • Demographics

Could propensity for remotely controlling lighting lead to savings?
  • Usage patterns and level of interaction with LED
  • Persistence of use

Quantifying savings was not an objective
  • No information about baseline lamp types
  • Previous research indicating minimal savings
Methodology

Online Surveys

$50 if completed all 3

- Point-of-purchase (n=239)
- Midpoint (n=178)
- Post-Pilot (n=100)

Hub Data Analysis

Initial 3 months of data for 228 participants

- Unique user ID
- Unique device ID & type (A-line or BR30)
- Power State (actual)
- Desired Power State (via hub)
- Last brightness (0 – 1)
- New brightness (0 – 1)
- Timestamp
Motivations and Preferences

High level of awareness and interest
About ½ already using some connected tech
Higher income and education levels
Discount was most important factor
Non-energy benefits attractive
  • Increased security
  • Controlling lighting remotely
  • 25% neutral about energy-saving benefits

Usage and Persistence
Actual usage reasonably aligned with intentions
Most continued to interact via hub
  • More frequently than manual

Installation rates
Data analysis consistent with survey
Higher ISR for A-line bulbs (93%) than for BR30 (77%)
Hub Data

Timestamp issues
- Multiple user requests recorded, regardless of device state
- Timestamps generated by cloud-based system vs device hub
  - Could be out of order

Unable to use final dataset
- Delayed receipt from manufacturer
- Data quality issues

Potential exists to measures changes in usage
- Lots of potentially valuable data
- Minor improvements to data collection needed
Conclusions

Recruitment was successful

May be good model for future emerging tech offerings

Non-energy benefits vs. saving energy

• Potential to increase equipment usage
• Most were interested in saving energy
• Initiatives offering efficiency and non-energy benefits likely most attractive

Discount was important

• Most would not have purchased without discount
• Current market pricing may be barrier for general adoption; utility incentives can help

Data have value

• Potential for robust analysis
• Clarify requirements with third-party data providers
• Test data collection tools prior to launch
• Attempt analysis with sample of data
Thank You / Q&A
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