Expand Your Thinking: A Design Strategy for a New Mix of Behavioral Programs

Linda Dethman, Cadmus Group
Patrice Ignelzi, EnerNOC Utility Solutions

BECC 2013/November 18-20/Sacramento, CA
Unite for new program ideas!
Four steps

1. Start with behaviors, theories, or interventions
2. Consider all three elements to get the best fit
3. Conduct preliminary research
4. Ensure the program can be evaluated
A word about behavior schemes

End Use

California Statewide Average Electricity Use Per Household

- Lighting (Estimate)
- Refrigerators & Freezers
- TV, PC & Office Equipment
- Pools & Spas
- miscellaneous
- Air Conditioning
- Laundry
- Dishwashing & Cooking
- Space Heating
- Water Heating

California Energy Efficiency Strategy Plan
January 2011 update
Many other schemes

Purchase versus Non-Purchase

Savings Potential

10 TOP

Popularity
How about a consumer-based scheme?

- Change your habits
- Get rid of stuff
- Invest in a lifestyle
- Automate your home
- Upgrade your home
- Maintain your home
- Use equipment better
Close up: Change your habits

- Use cold water
- Unplug
- Take shorter showers
- Turn off lights
- Hang out laundry
- Full Loads
- Dress warmer/colder

Change your habits
Extending the reach of an appliance rebate program

Traditional focus
- Encourage purchase of more efficient appliances

Added focus
- Encourage more efficient use of those high-efficiency appliances
- Support adoption of newest technologies
Help from social sciences

- Neoclassical economics
- Cognitive science
  - Framing/Priming
  - Loss aversion
- Decision heuristics
  - Ease and convenience
  - Recognition of encouraged behavior
- Diffusion of innovation
  - Technology acceptance & adoption
Interventions to Increase Purchase and Usage Efficiency

- Financial Incentives
- Framing
- In-person Interactions
- Follow-through

Behavior Change

Energy Saving Reminder: Remember to turn off your computer at the end of the day!
Resulting behavior changes

• Buy something different
  – Tankless instead of storage water heater
  – More appropriately sized unit

• Change habits
  – Unplug/turn off
  – Wash clothes in cold water

• Use appliances better
  – Install the bulbs
  – Program the thermostat
  – Turn down water heater temperature
A new program idea uniting behavior, theory, interventions. . .

Personal Energy Trainer (PET)
What do I want in a PET?

**Can do without**
- Handsome
- Money saving

**Must be**
- Timely, reliable, polite, committed, convenient
- Able to track my progress
- Under my control
- Habit forming
- Able to track my progress
- Timely, reliable, polite, committed, convenient
Social science evidence

- **Learning theory**
  - Positive reinforcement
  - Feedback
- **Bounded rationality and decision heuristics**
  - Ease and convenience
  - Elimination of choices
- **Theory of planned behavior**
  - Behavioral control
PET Interventions

Commitment

Framing

In-person Interactions

Feedback

Rewards and Gifts

Behavior Change
Resulting behavior changes

• Change your habits
  – Unplug/turn off
  – Shift timing

• Get rid of stuff
  – Take out the wine cooler
  – Put wine in basement

• Use equipment better
  – Thermostat control
  – Use fans instead of A/C
So, shake or stir

NEW OR REFRESHED PROGRAMS
A typical day with my PET

- Puts my house to bed when I’m ready
- Wakes me up with positive feedback
- Turns porch light on after dark, provides comfortable homecoming
- Asks: My schedule? Can I make your life better?
- Alerts or reassures me as needed
- Gives immediate and cumulative feedback
- Adjusts lights, coffee machine, appliances, HVAC
Thank You!

“Paving the Way to a Richer Mix of Residential Behavior Programs”

www.calmac.org

QUESTIONS?

Contacts:

— Linda.Dethman@cadmusgroup.com
— Pignelzi@ernnoc.com