

# MicroClimates, Inc

We make your home smart about you.

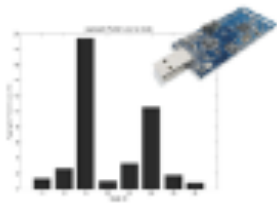
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Nathan Ota, PhD  
CTO MicroClimates

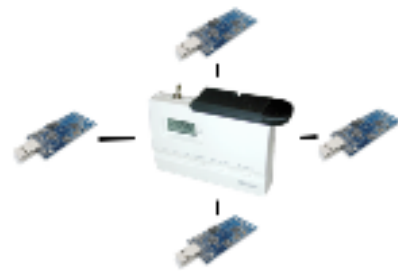
Presentation ETD Workshop  
September 18, 2008  
Berkeley, CA

# Research from UC Berkeley: 2001-2007

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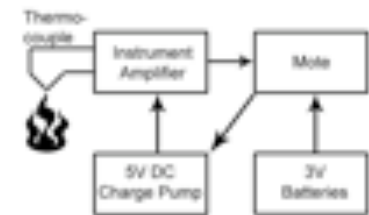
RF performance  
in homes



Multi-sensor  
HVAC controls



Multi-tiered  
software & systems



Modular energy  
monitoring

with help from researchers Spencer Ahrens and Wen Hsu

What is success?

# A second look at our challenges

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9,600 lbs per year

The amount of HVAC-related CO2 emissions for the average US household.

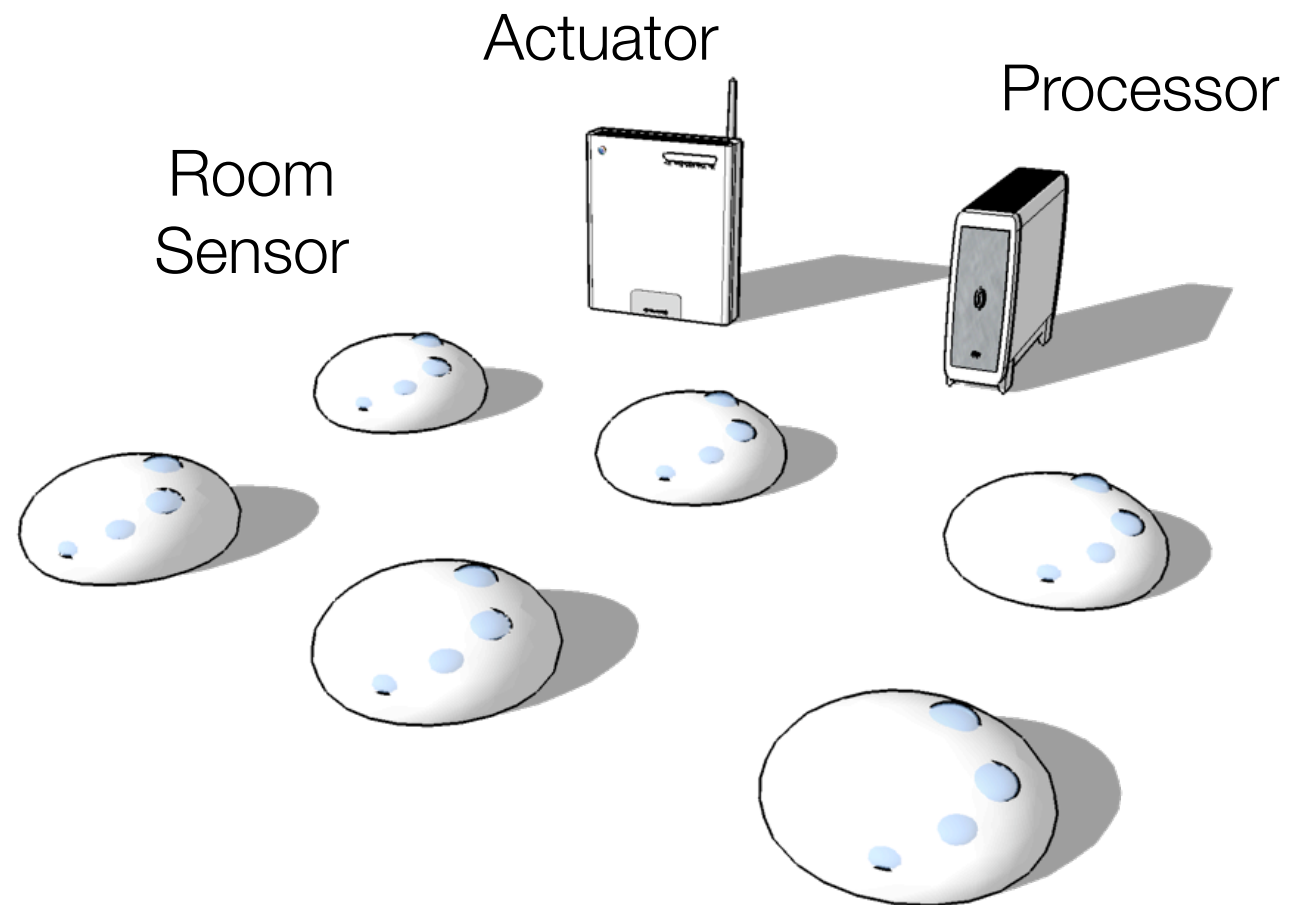
“It’s not just going to affect poor people, but also moderate to middle-class households. People are going to become more impoverished to pay for heating this winter.”

**The New York Times**

# Living better with MicroClimates

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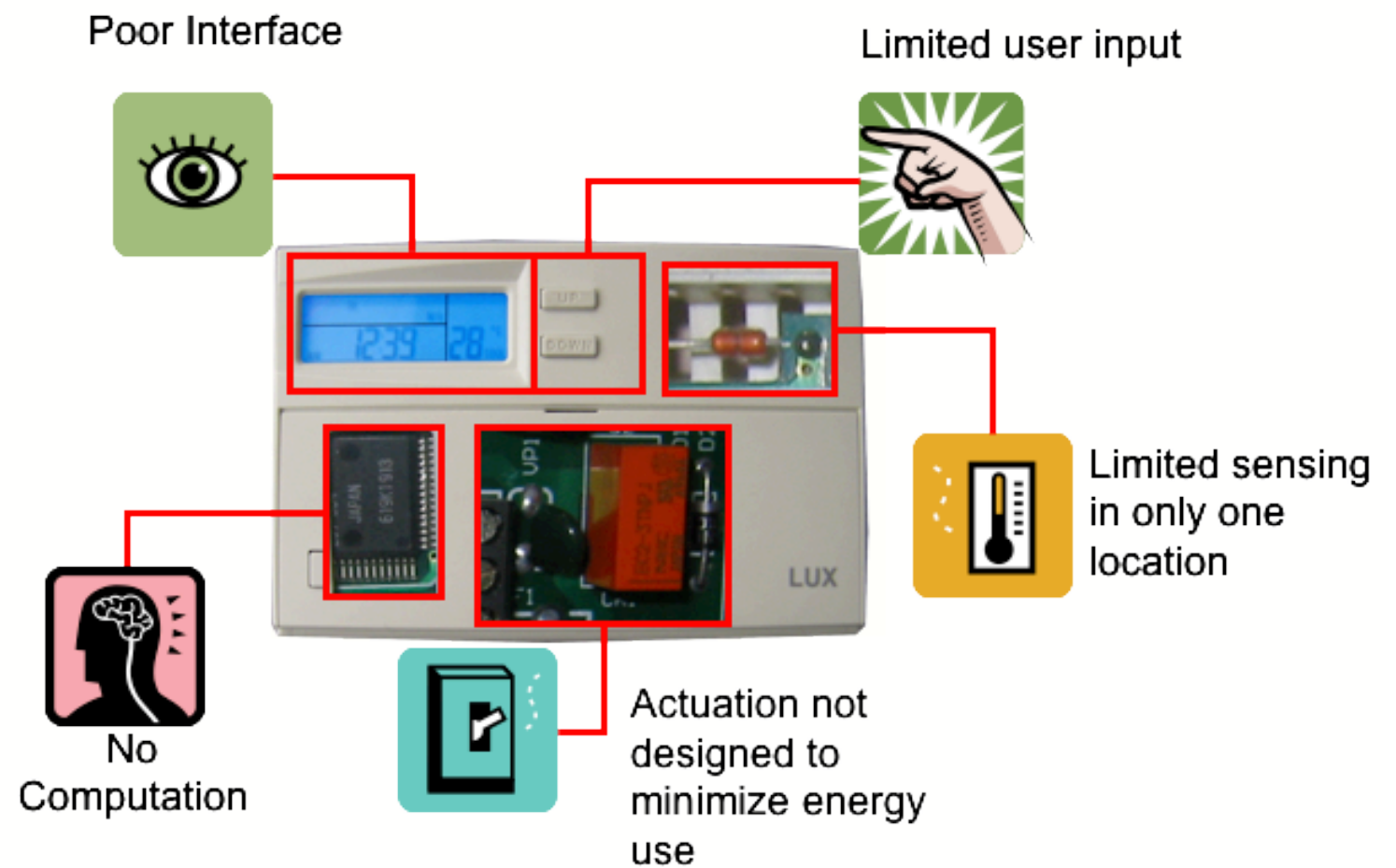
- Out-of-the-box heating and cooling energy savings up to 30%.
- Provides homeowner the information and capability to balance comfort, cost, and carbon footprint preferences.
- Control customized for individual homes and preferences.



# Perspective on the status quo

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- 10-15 year product lifetime
- Commodity cost
- Contractor-friendly



# “Crossing the Chasm” with Disaggregation

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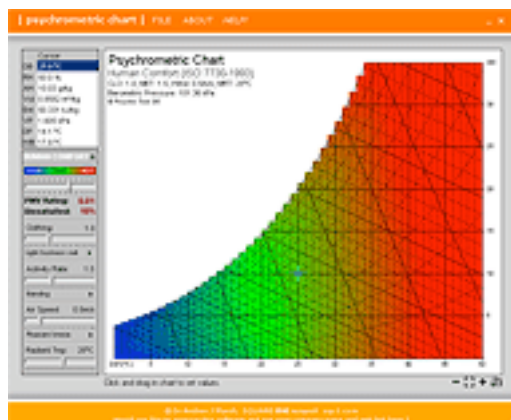
Wire replacement &  
energy monitoring

New control algorithms  
& connected systems



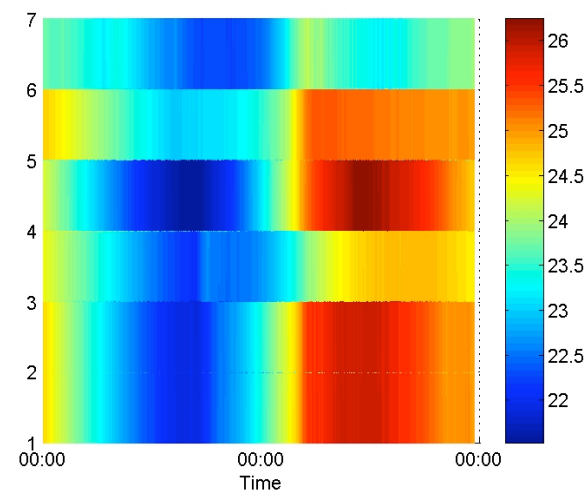
# Opportunities to reduce “on” time and save energy

Substitute comfort conditions



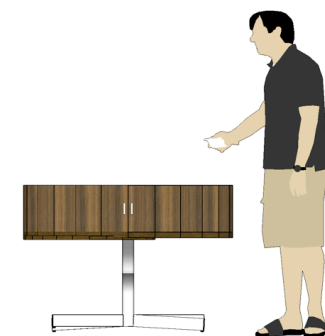
+

Spatial and temporal characteristics



+

Learned user behavior & enhanced reactivity





# MicroClimates platform supports energy efficiency, energy information, and demand response

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1

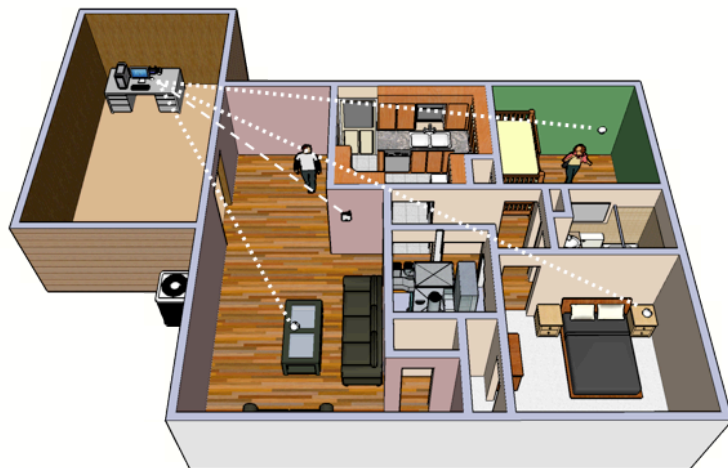
Characterize comfort and “metabolism” of the home using sensors

2

Customize control for people and home using server-side web services

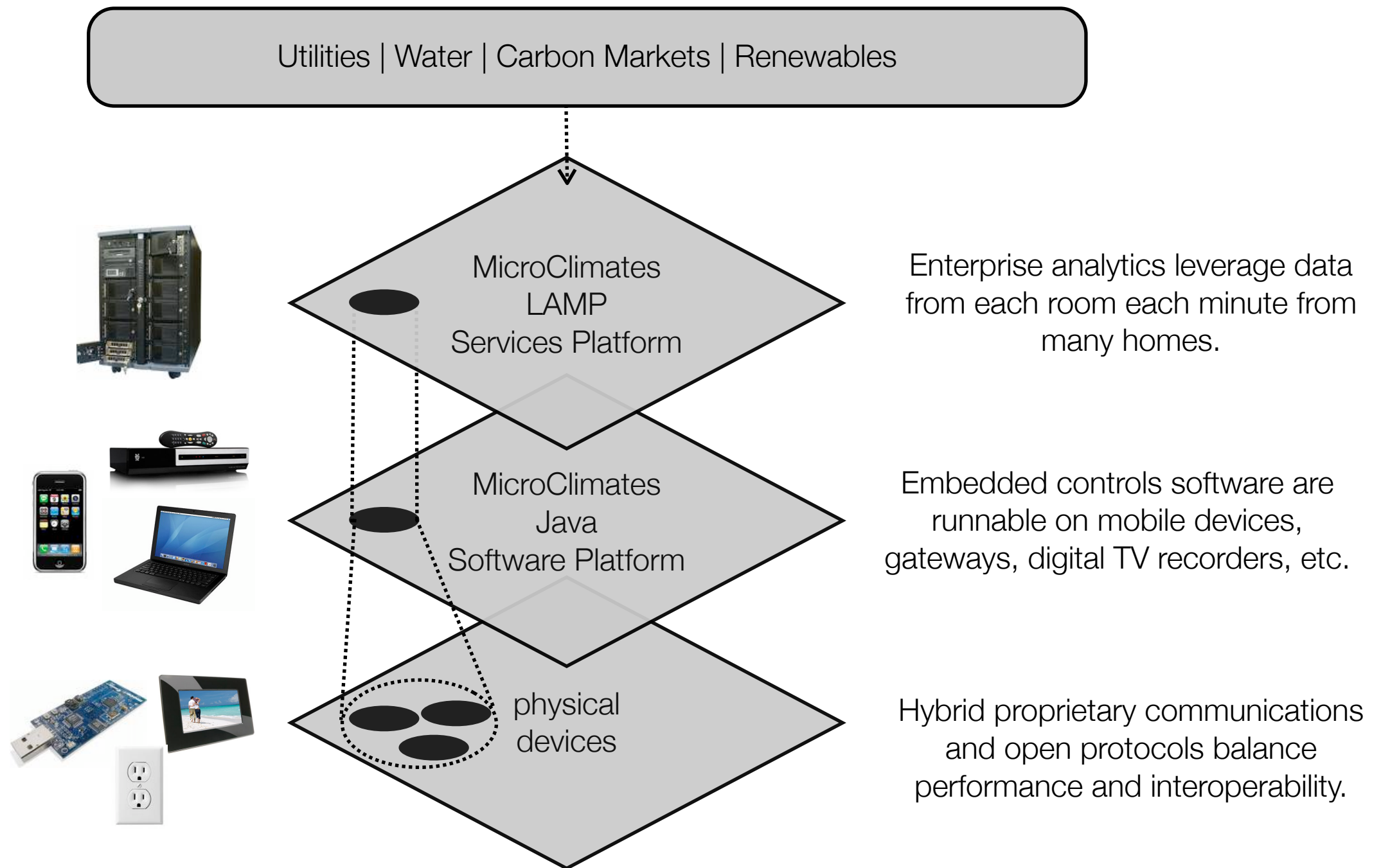
3

Connect people to opportunities and services like demand response



# MicroClimates platform

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# A new paradigm: micro-innovation



# Where we're at

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- Building on successful California deployments with winter trials.
- Product launch 2009.

thank you.

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CTO MicroClimates

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Special thanks to:

CITRIS

CEDR

CEC

PIER

NSF

CET

Lester Center