

WHERE PEOPLE AND ENERGY CONNECT

## IMPACT OF U.S. BUILDINGS

### Energy

» **39%** of energy consumed in U.S.

### Environment

» **38%** of CO<sub>2</sub> emissions in U.S.

### Economy

» **\$350** billion spent annually on energy in U.S.

Source: U.S. Green Building Council

OPPORTUNITY | SOLUTION | TARGET MARKET | VALUE

## ENERGY EFFICIENCY SOLUTIONS



Lighting System  
HVAC System  
Equipment & Appliances  
Building Materials

OPPORTUNITY | SOLUTION | TARGET MARKET | VALUE

## ENERGY EFFICIENCY SOLUTIONS

*“People are the number one untapped resource  
for energy management.”*

-Mike Kounnas  
VP & Founder of Smarte Building

OPPORTUNITY | SOLUTION | TARGET MARKET | VALUE

## OBERLIN STUDY

» 31% energy reduction (lo-res. feedback).

Source: Oberlin College, Lewis Center for Environmental Studies

OPPORTUNITY | SOLUTION | TARGET MARKET | VALUE

## OBERLIN STUDY

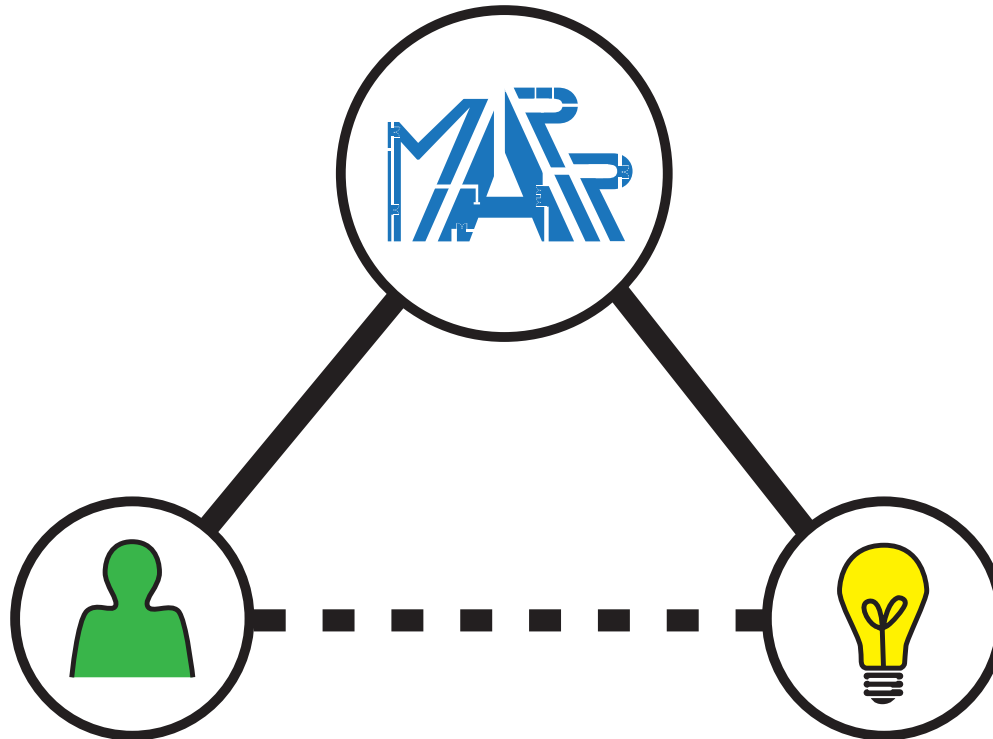
» 31% energy reduction (lo-res. feedback).

» 55% energy reduction (hi-res. feedback).

Source: Oberlin College, Lewis Center for Environmental Studies

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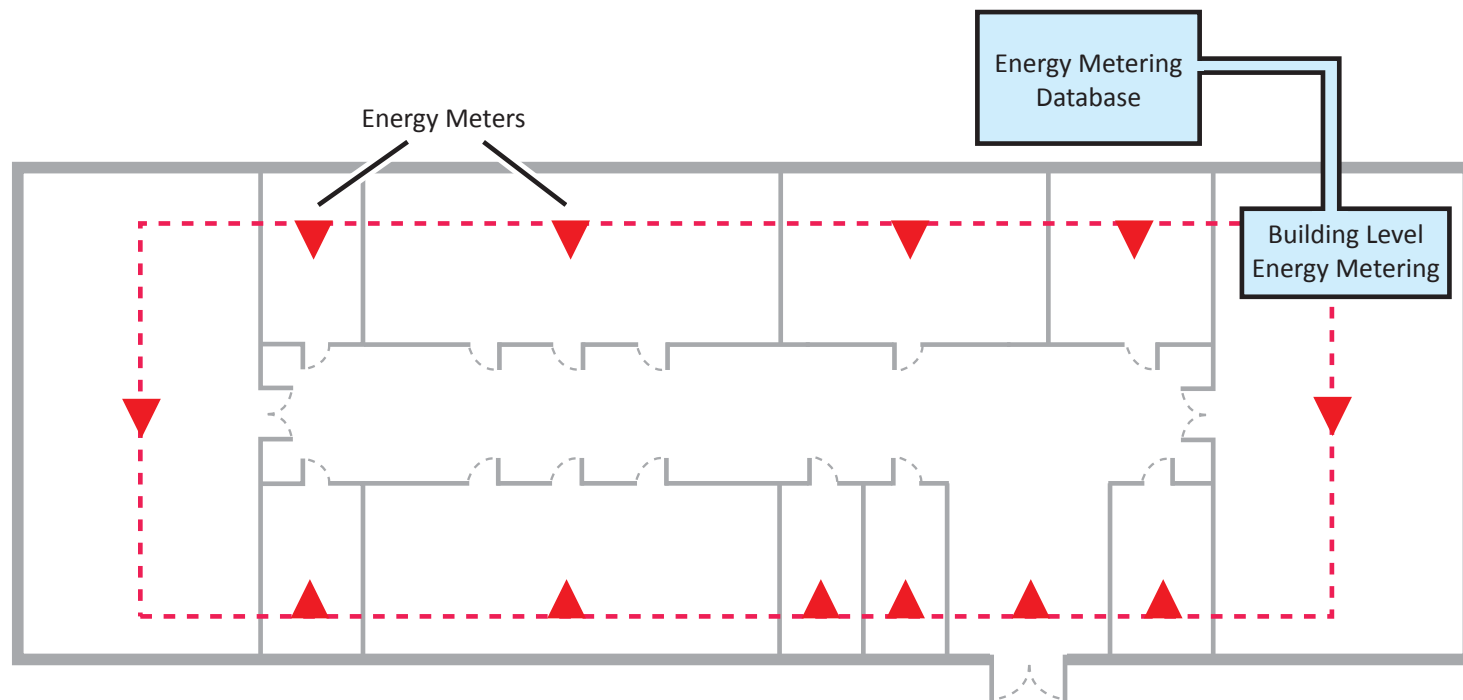
## CONNECTING PEOPLE AND ENERGY



OPPORTUNITY | SOLUTION | TARGET MARKET | VALUE

## CONNECTING PEOPLE AND ENERGY

### » Measure Energy

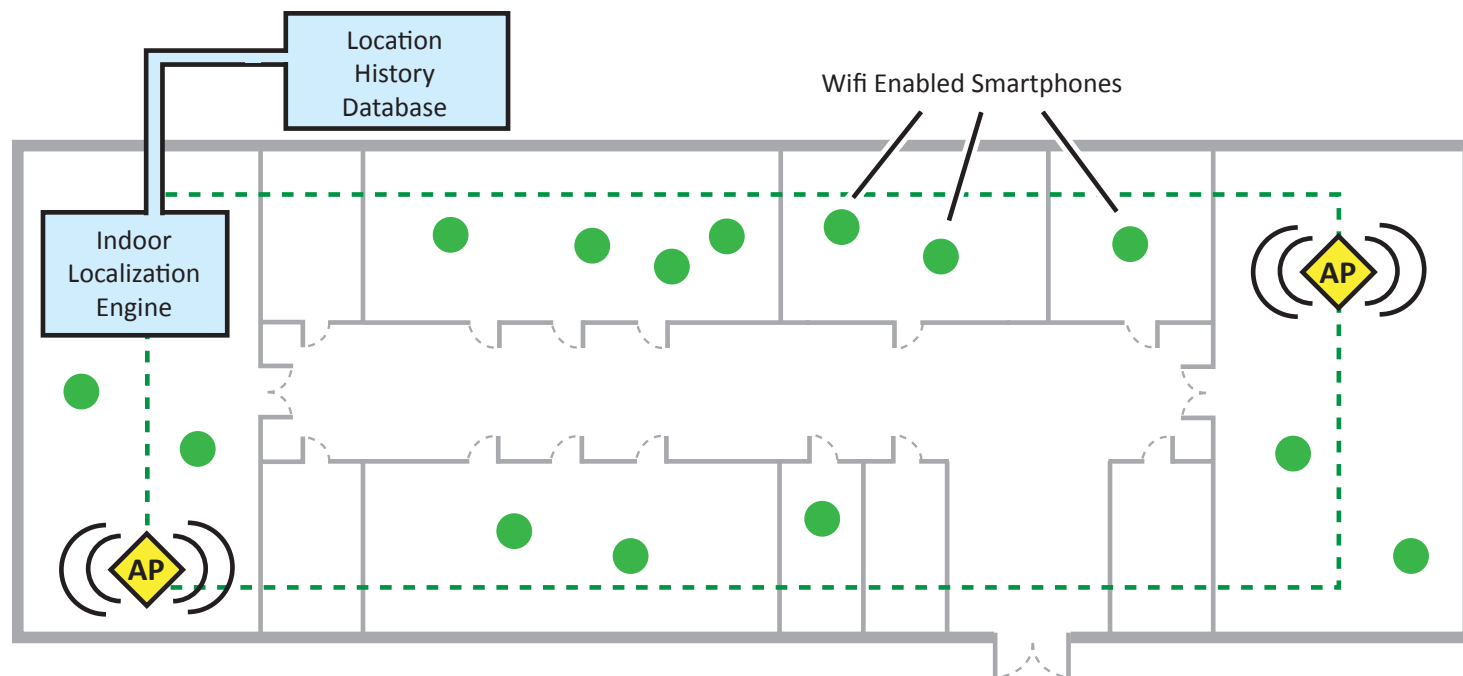




OPPORTUNITY | SOLUTION | TARGET MARKET | VALUE

## CONNECTING PEOPLE AND ENERGY

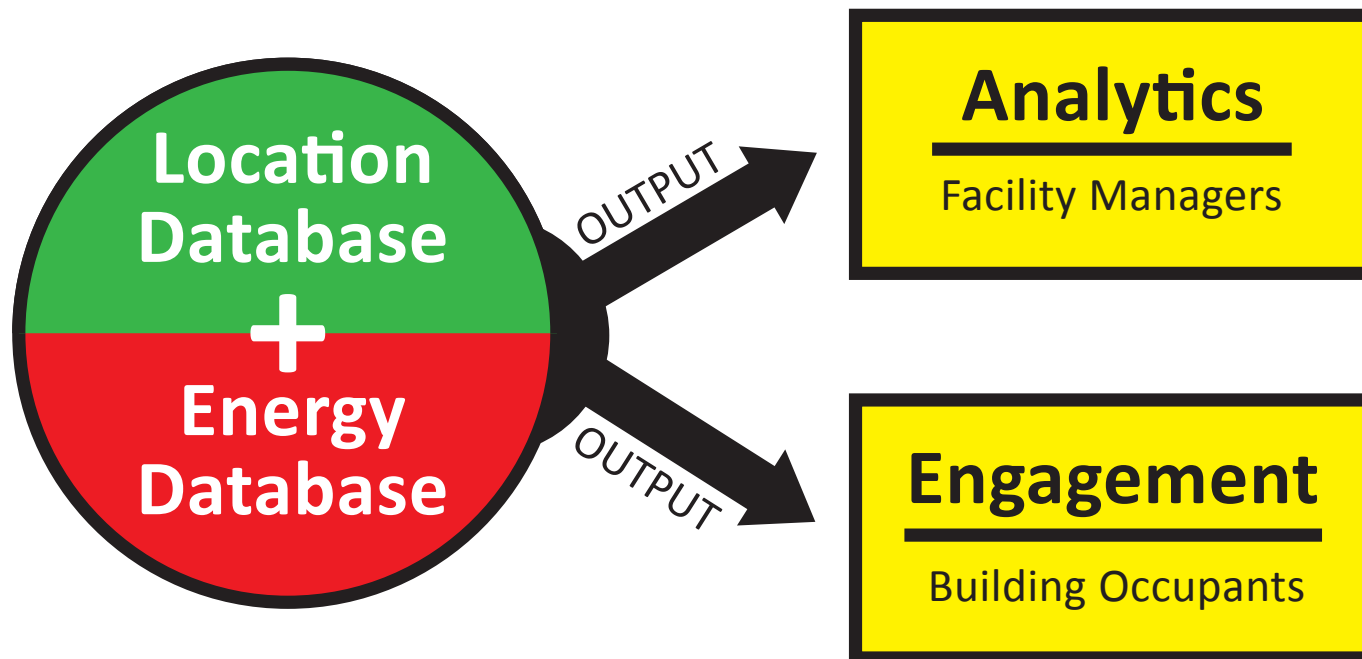
### » Monitor Location



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## CONNECTING PEOPLE AND ENERGY

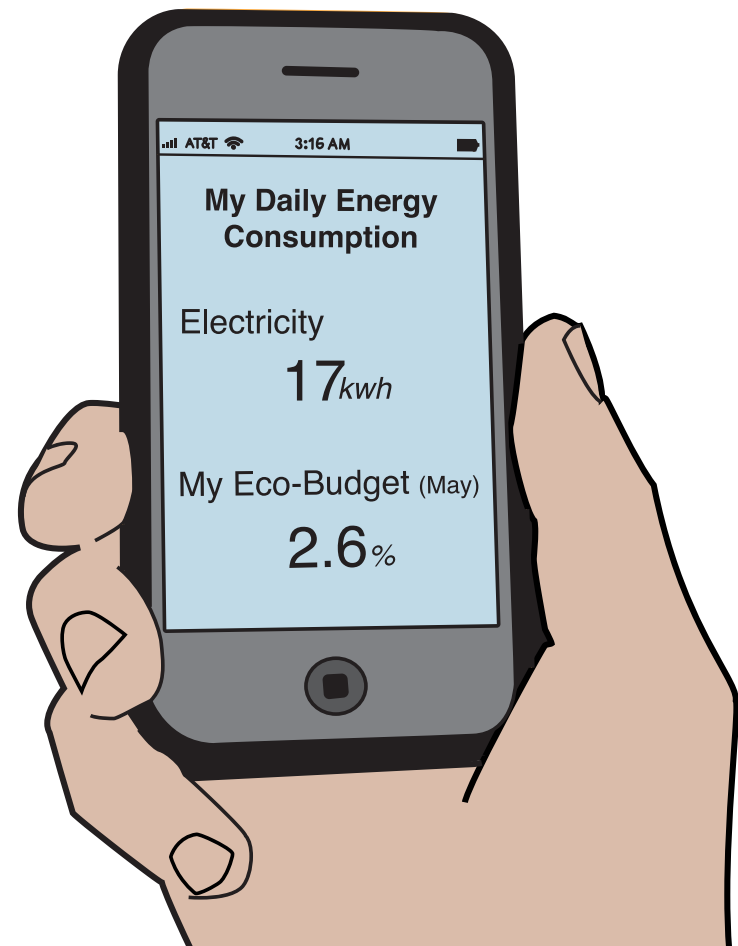
» Manage Efficiency



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## ENGAGEMENT

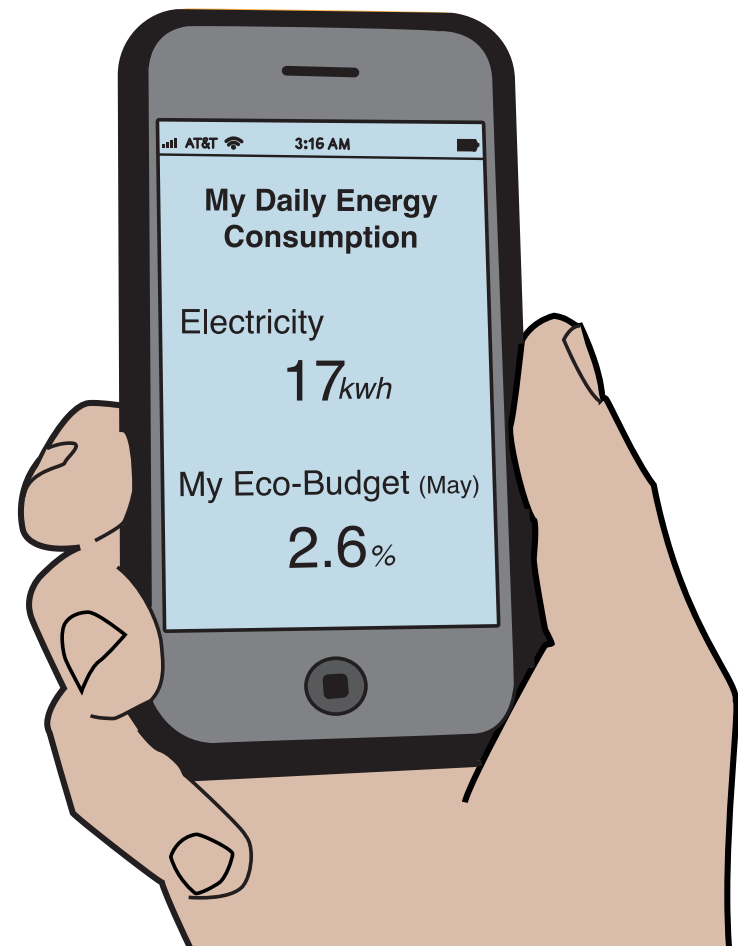
» Eco-Budgeting



OPPORTUNITY | SOLUTION | TARGET MARKET | VALUE

## ENGAGEMENT

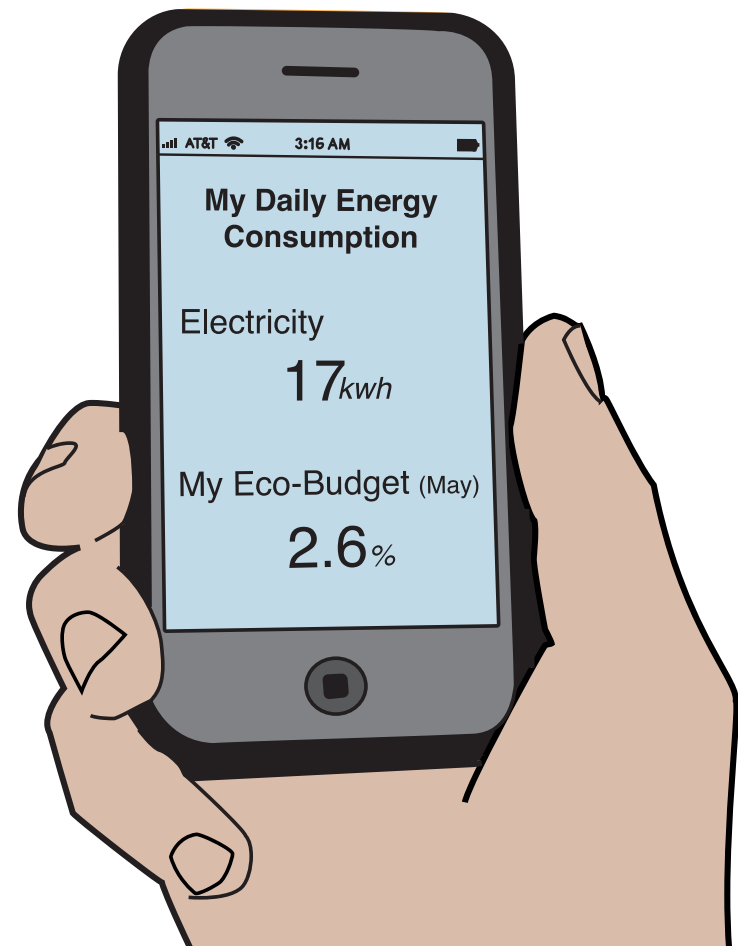
- » Eco-Budgeting
- » Competition



OPPORTUNITY | SOLUTION | TARGET MARKET | VALUE

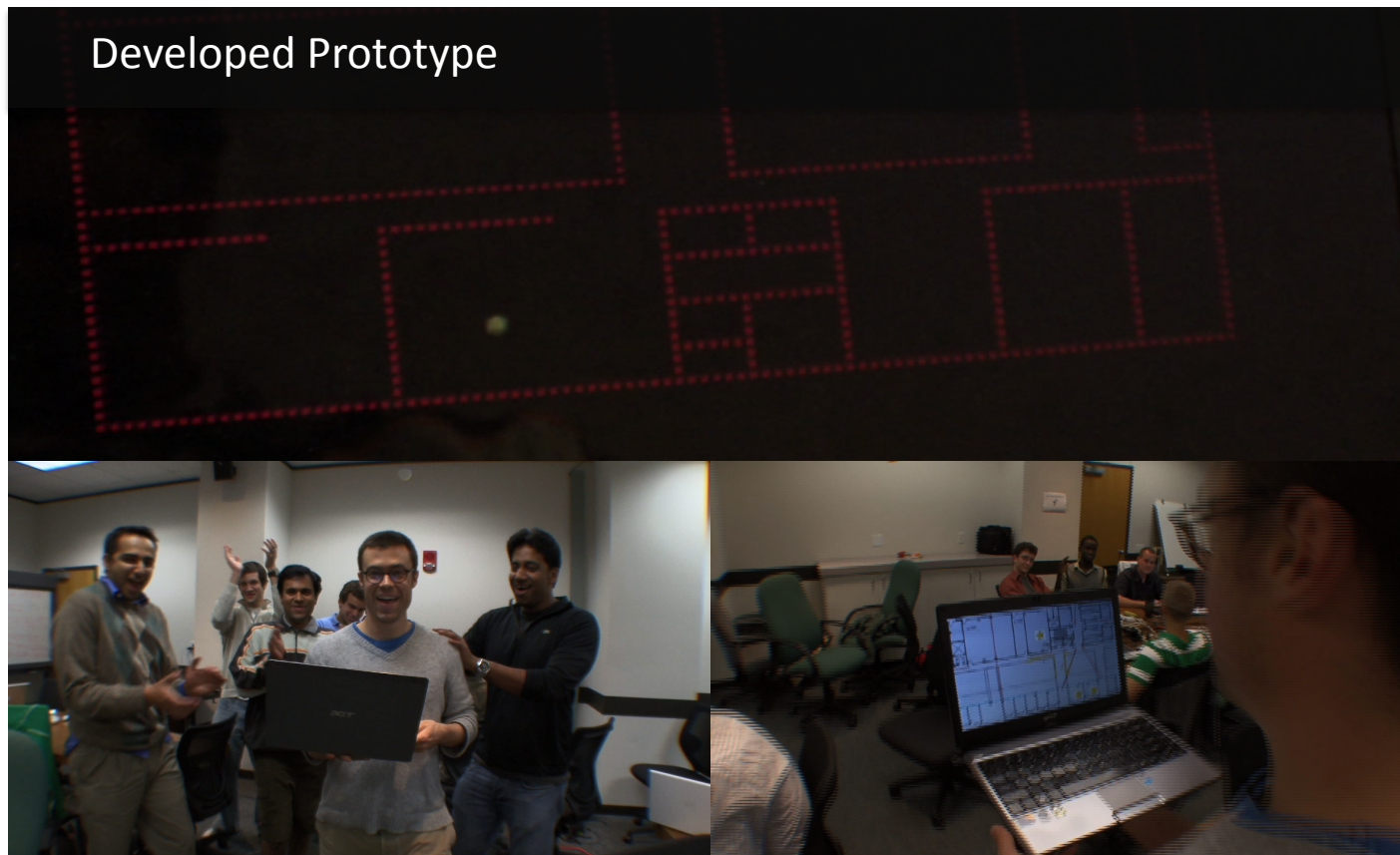
## ENGAGEMENT

- » Eco-Budgeting
- » Competition
- » Gaming



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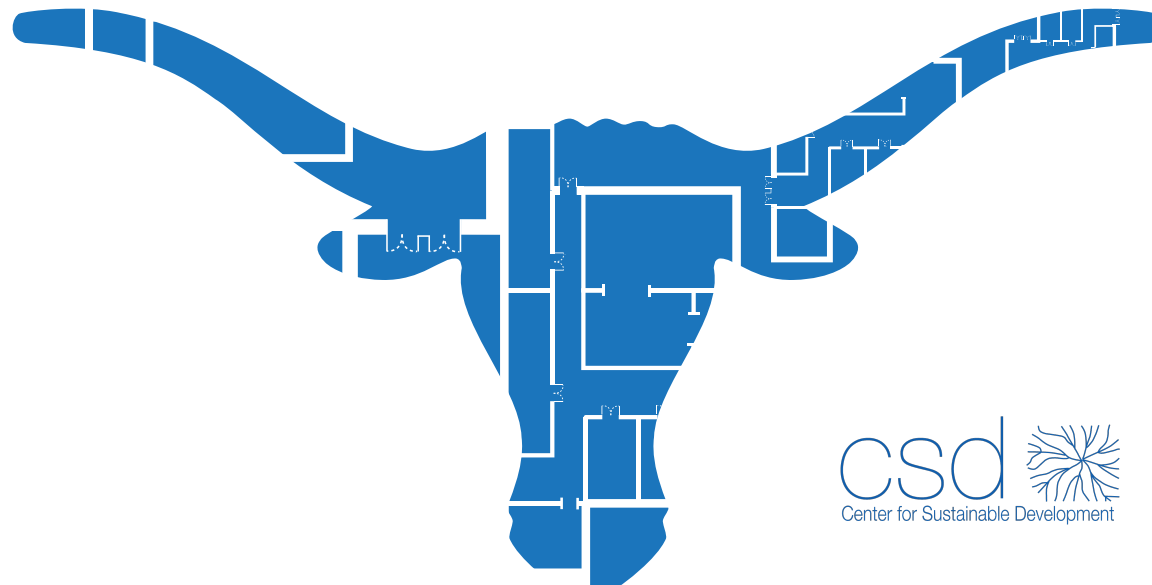
## 3 DAY STARTUP



OPPORTUNITY | SOLUTION | TARGET MARKET | VALUE

# UT SMART BUILDING INITIATIVE

The Center for Sustainable Development



OPPORTUNITY | SOLUTION | TARGET MARKET | VALUE

# UT SMART BUILDING INITIATIVE

The Center for Sustainable Development

## » Phase I

- Develop Technology
- Proof of Concept Pilot



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# UT SMART BUILDING INITIATIVE

The Center for Sustainable Development

## » Phase I

- Develop Technology
- Proof of Concept Pilot

## » Phase II

- Year Long Study
- 4 Test Buildings

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# UT SMART BUILDING INITIATIVE

The Center for Sustainable Development

## » Phase I

- Develop Technology
- Proof of Concept Pilot

## » Phase II

- Year Long Study
- 4 Test Buildings

## » Phase III

- Campus Wide Implementation

OPPORTUNITY | SOLUTION | TARGET MARKET | VALUE

## UT SMART BUILDING INITIATIVE

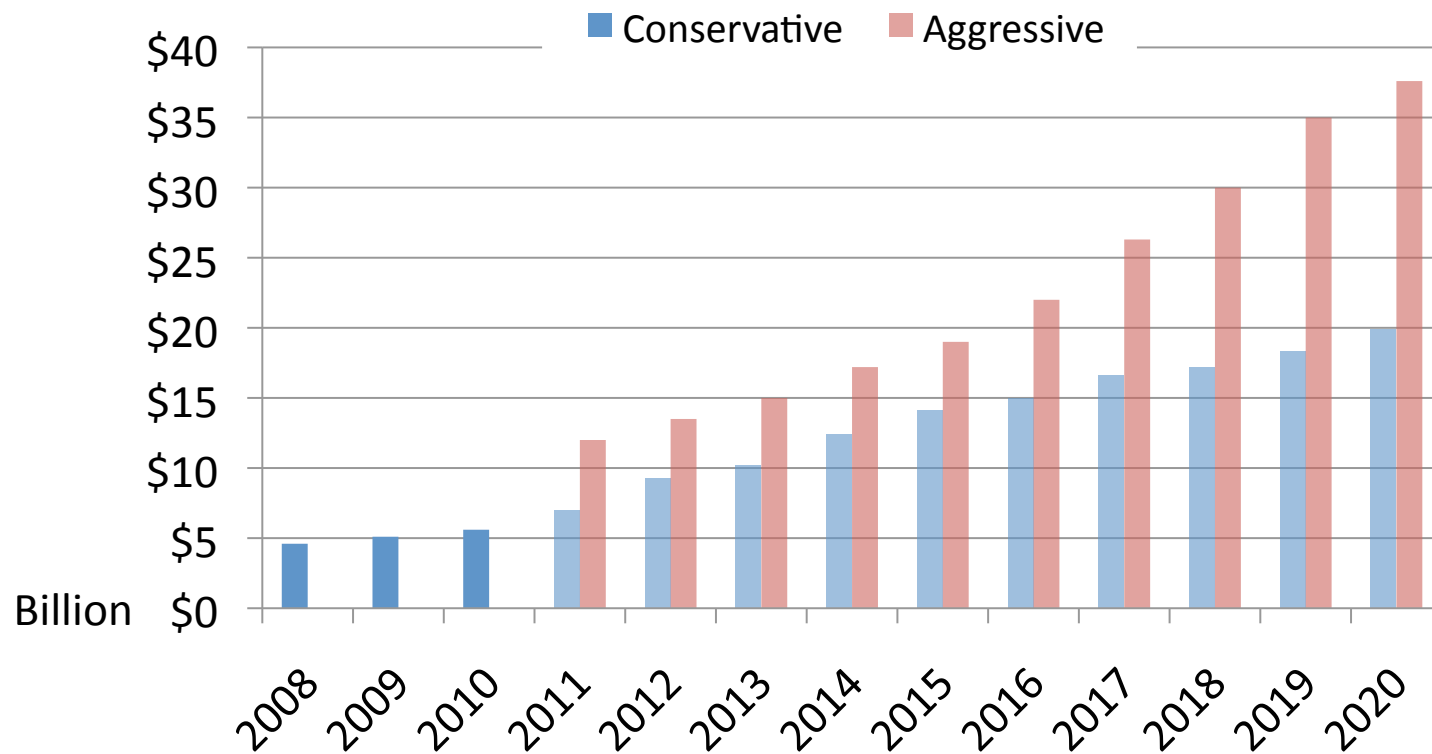
The Center for Sustainable Development

*“I believe mApp’s integrated system could easily result in energy savings in the 20% - 30% range and lead to a fundamental change in how we look at the running of our buildings.”*

-Dr. Werner Lang  
Director, Center for Sustainable Development

## MARKET SIZE

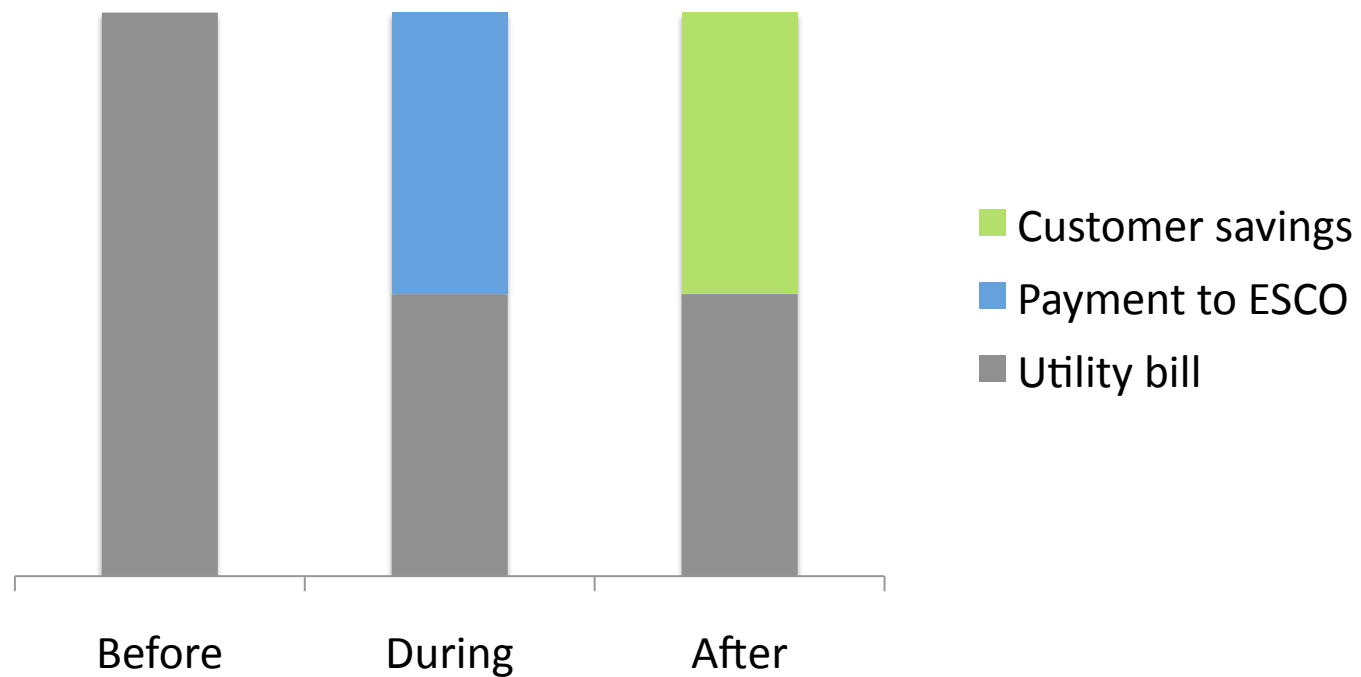
**ESCO Industry Forecast, U.S.**



Source: Pike Research

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## PERFORMANCE CONTRACTING

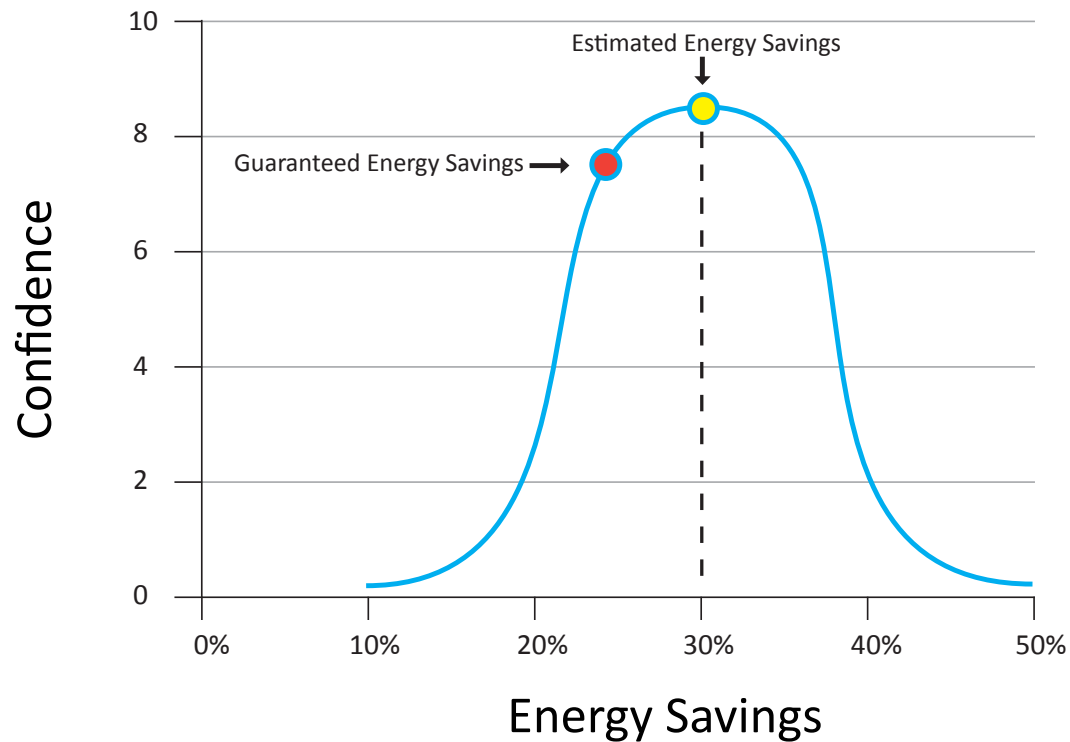


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## RISK MANAGEMENT

Investment Grade Energy Audit

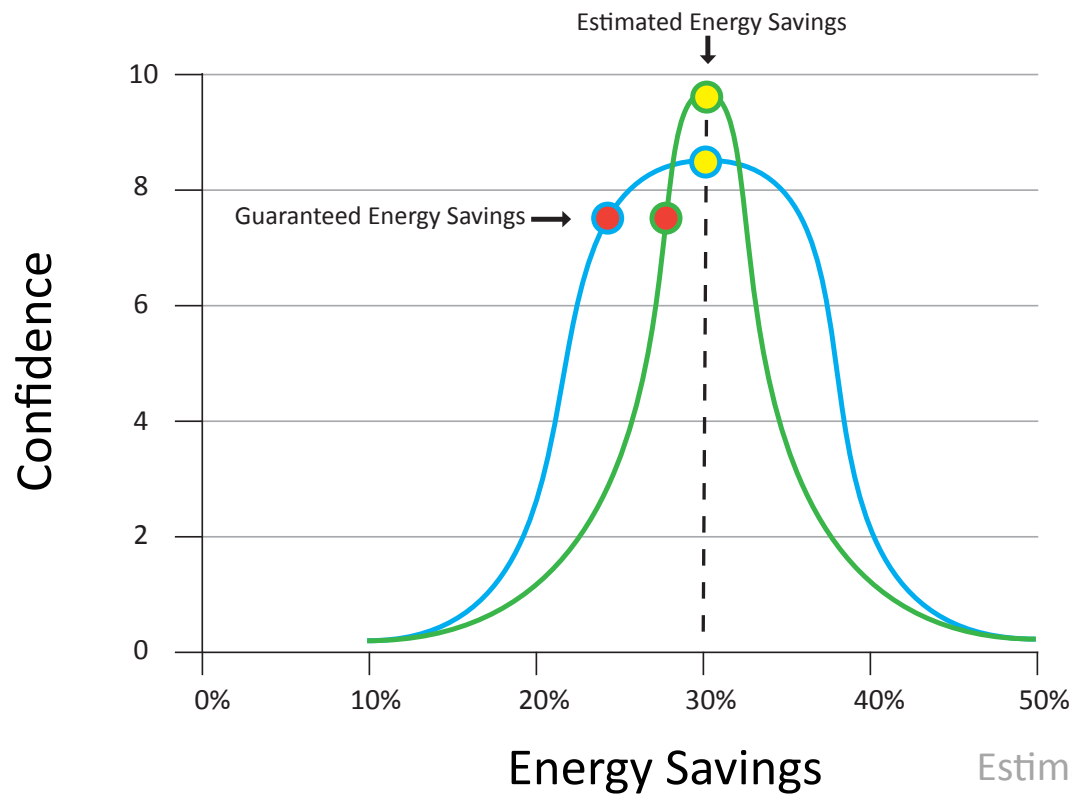
» 5% - 10% standard deviation



## RISK MANAGEMENT

mApp Analytics

» 2% - 5% standard deviation\*



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## EXAMPLE

University of Texas

- » **\$20** million annual utility bill.
- » **15** million square feet.

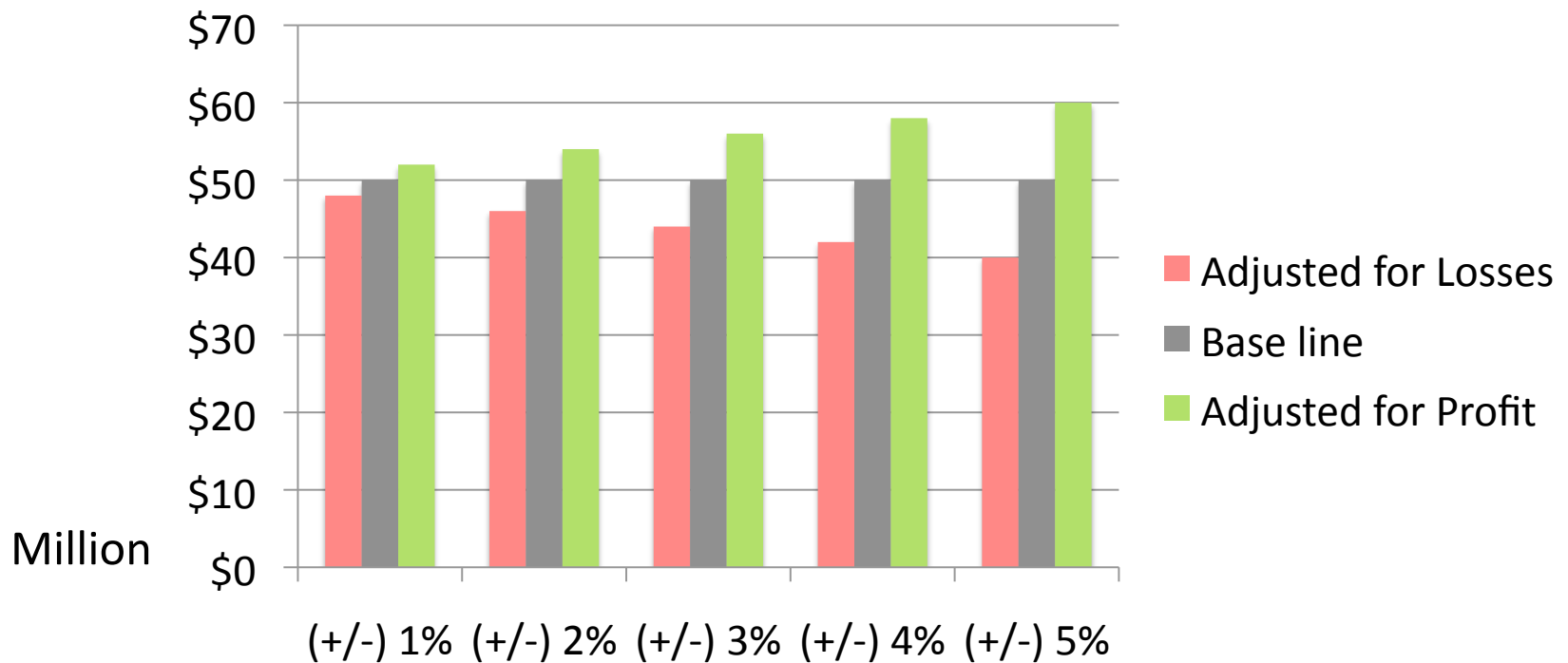
ESCO

- » **30%** estimated energy savings.
- » **25%** guaranteed energy savings.
- » **\$50** million contract (\$40M investment, \$10M profit).
- » **10** year payback period.



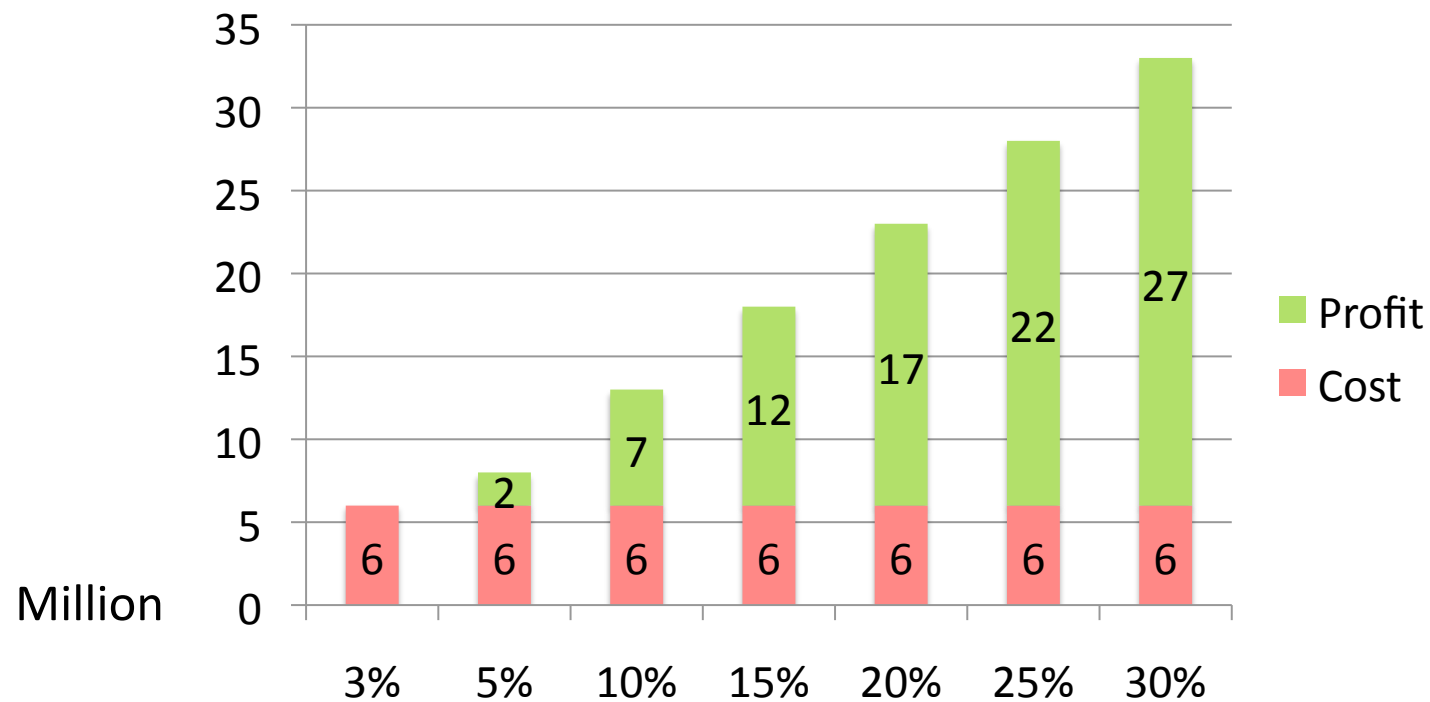
## EXAMPLE

Every 1% increase or decrease in the average energy savings over the course of the 10 year contract will result in \$2 million in profits or losses.



## EXAMPLE

mApp costs \$0.40 per square foot.



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## MARKET VALIDATION

Hubbell Automation

» **Tom Braz** Vice President

“There is a clear market need for this idea.”

CM<sup>3</sup>

» **John Hollister** Vice President

“You are on the right track!”

Clark Energy Group

» **Patrick Woods** senior associate

“Please keep us informed of mApp’s progress.”

Con Edison

» **Maura McGowan** engineer

“I’m surprised no one has thought of this already.”

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## MARKET BARRIERS

### » Privacy Concerns

- Anonymous tracking
- 80% US prefer to work for eco-friendly co. \*

### » Smartphone Reliant

- 42% of US has Smartphones \*\*
- Representative sampling

Source: Tandberg/IPSOS Mori Study \*  
eMarketer \*\*

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## INTELLECTUAL PROPERTY

We are in the process of applying for a methods patent for the use of Indoor Localization for energy management.

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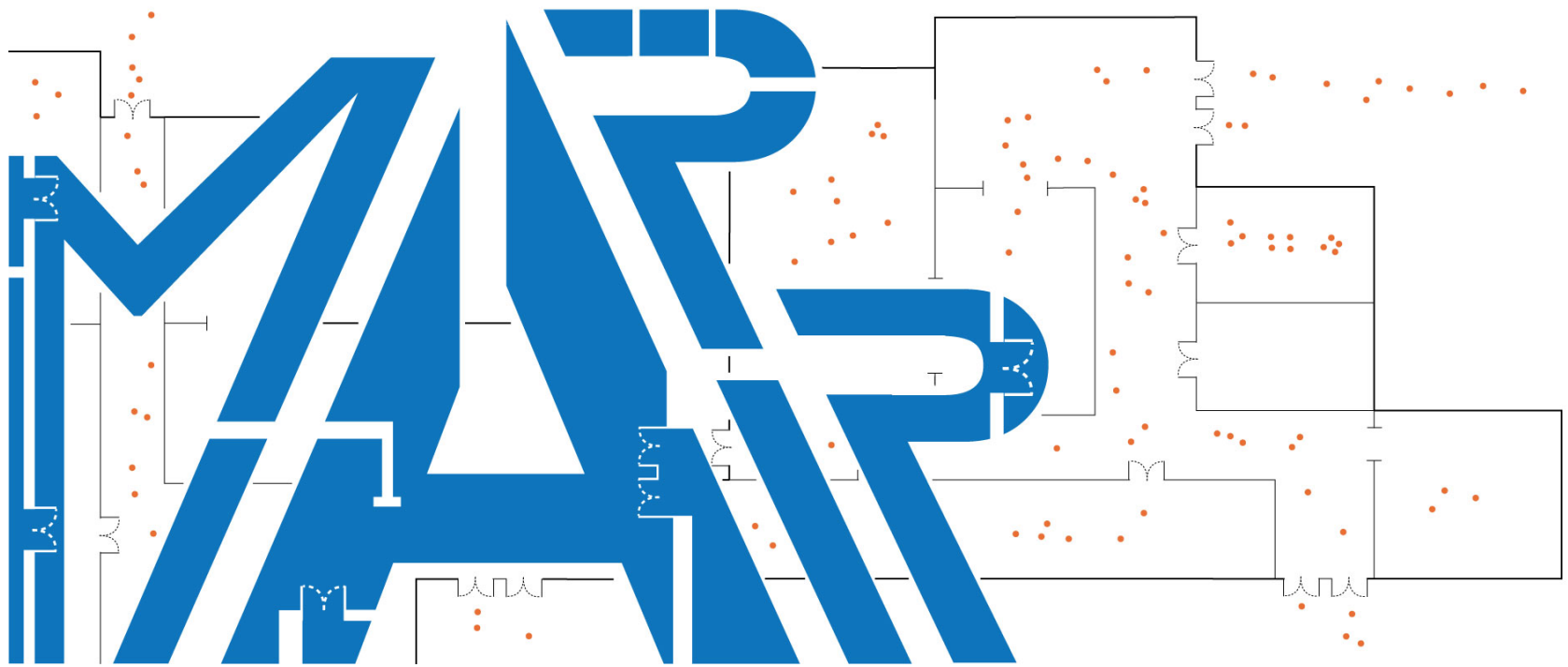
## NEXT STEPS

### » UT Smart Building Initiative

- Phase II
- Cost = \$250,000

### » Commercial Partner

- Dell - Eric Graham, Global Facilities Energy Sustainability Program Manager
- Hubbell-Automation – Tom Braz, Vice President
- Smarte Building – Mike Kounnas, Vice President



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