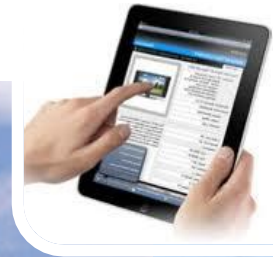




*We make energy efficiency easy.*



# Using 'Big Data' to Achieve Both Broad and Deep Savings in Hard-to-Reach Markets

## Steve Meyers

2013 ACEEE Energy Efficiency as a Resource  
Nashville, Tennessee  
Tuesday, September 23, 2013 (3:30)

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# Using Big Data Across Industries

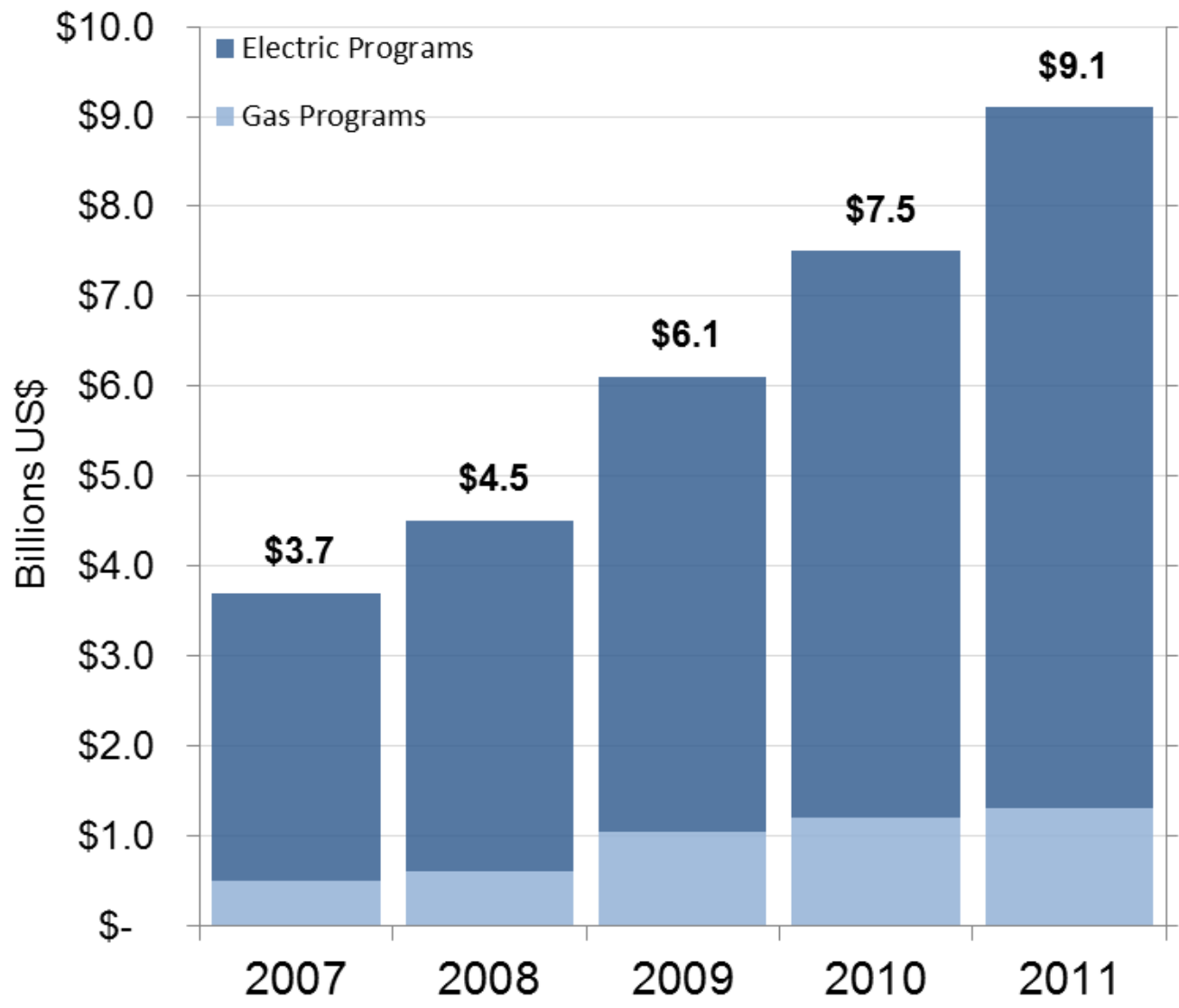


Could the energy-efficiency industry be using data more effectively?

# Utilities Have Aggressive Goals

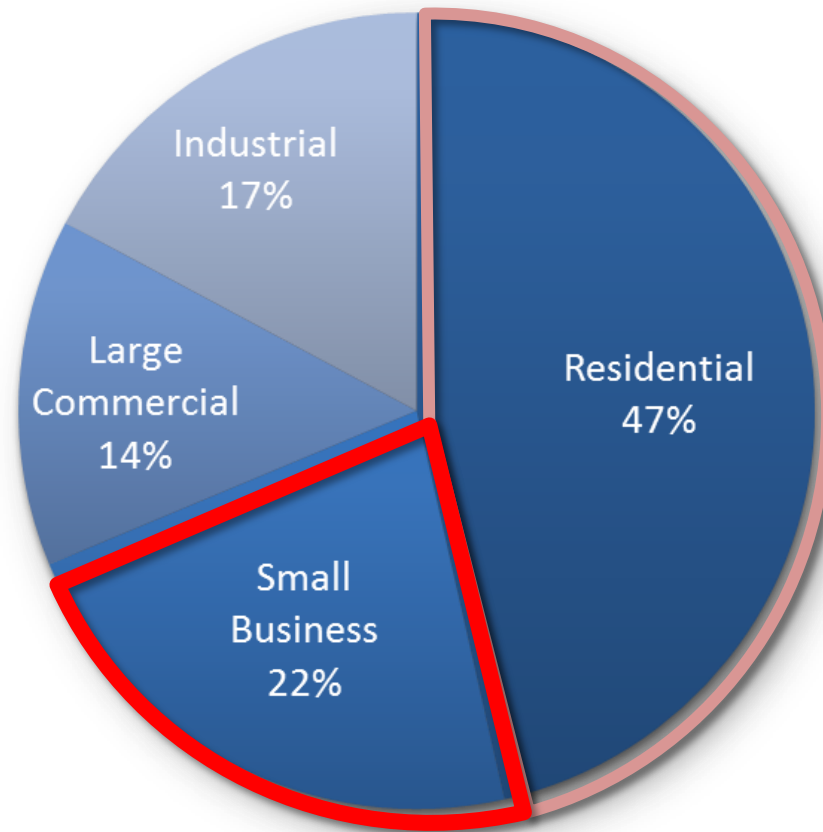


## US & Canadian Energy Efficiency Budgets



# We Need to Target New Markets

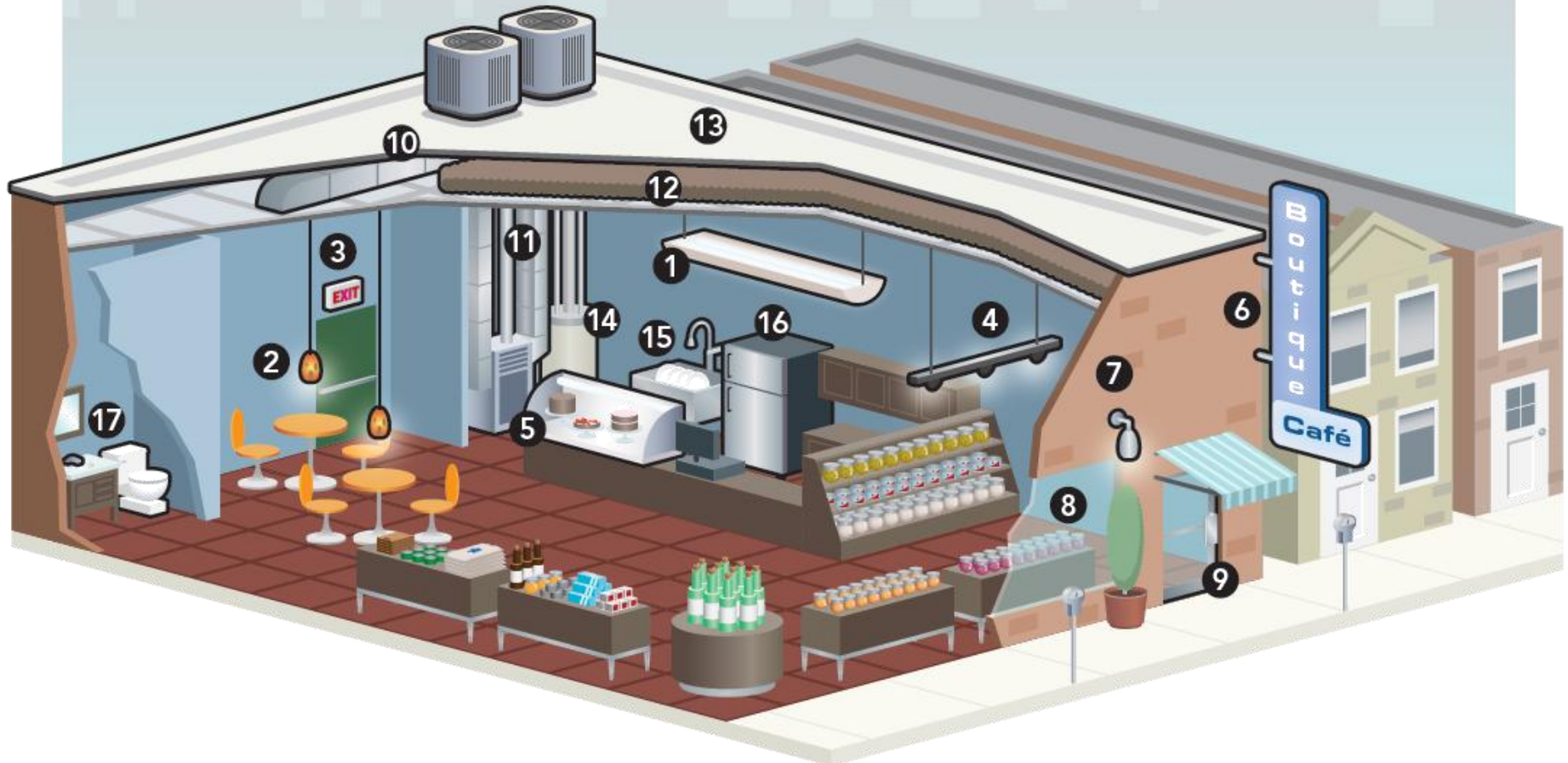
## US Retail Electricity Spend (~\$400 billion)



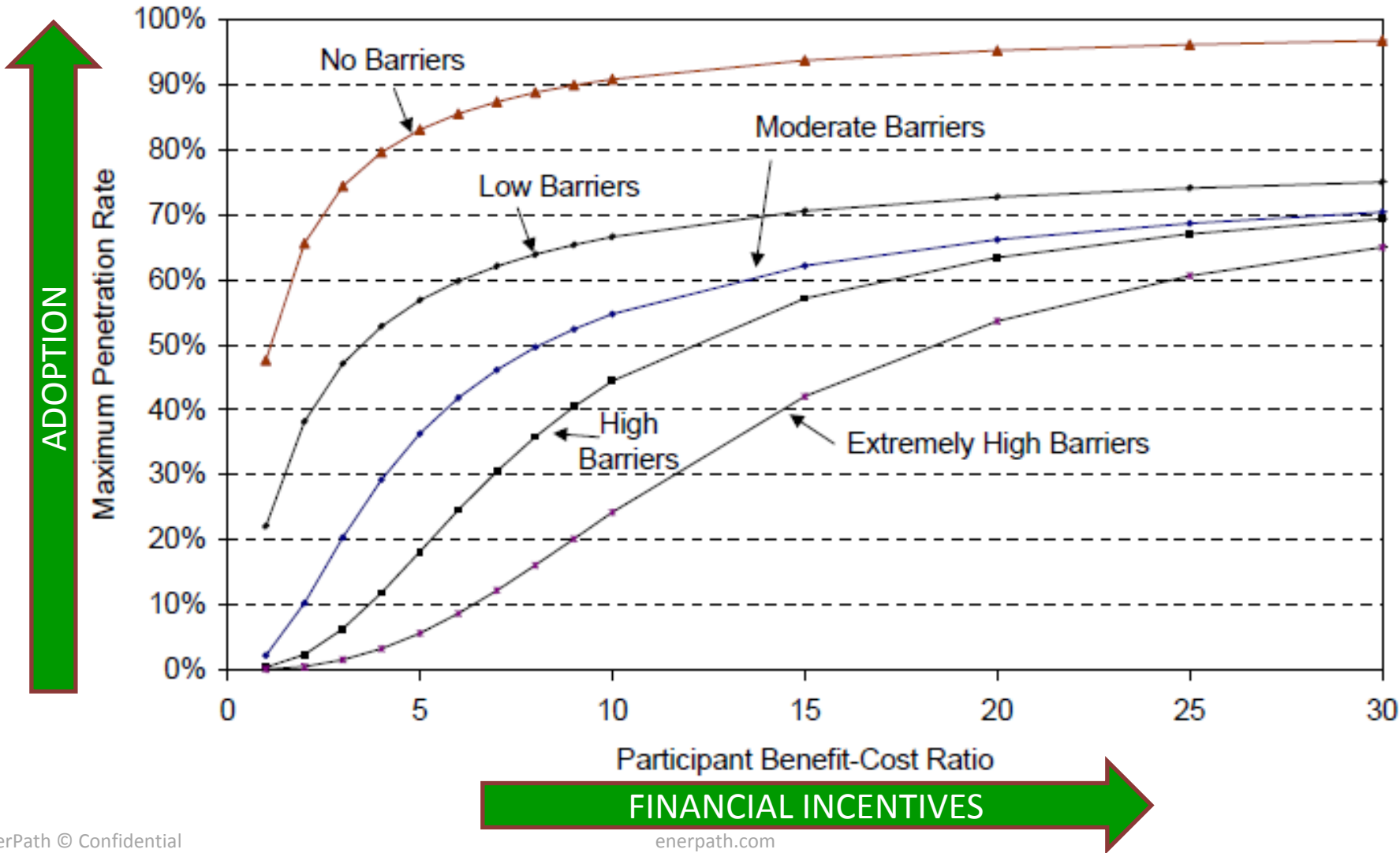
Source: <http://www.pewclimate.org/technology/overview/electricity>, <http://www.eia.doe.gov/aer/txt/ptb0201a.html>,  
[http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed\\_tables\\_2003/detailed\\_tables\\_2003.html](http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/detailed_tables_2003.html), <http://quickfacts.census.gov/qfd/states/00000.html>

# Understanding Mass Market Customers

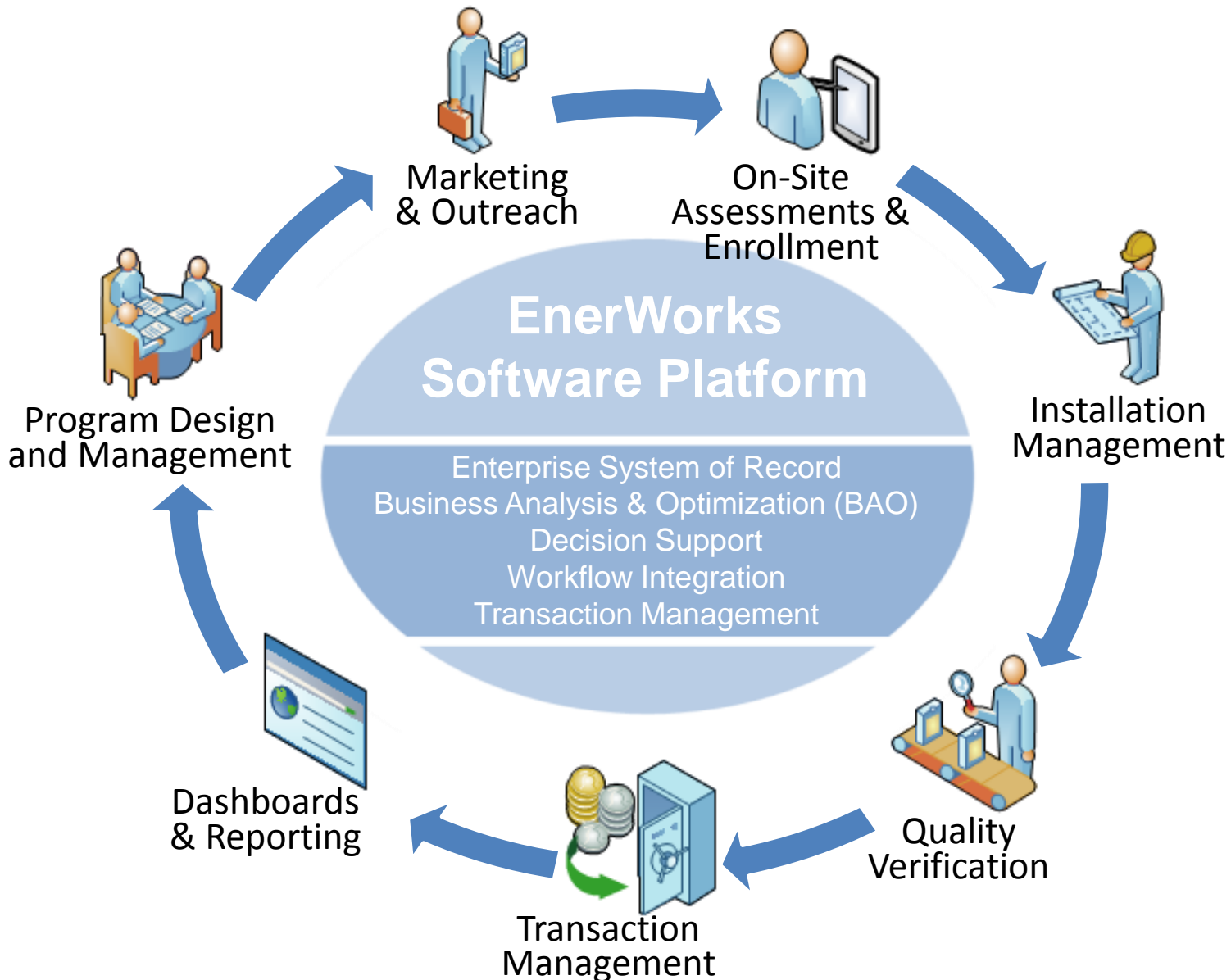
1. These customers are busy, so we have to make it easy for customers to adopt
2. Minimize transaction costs so these customers can be cost-effective
3. Layer-in measures to achieve more savings-per-customer over time.

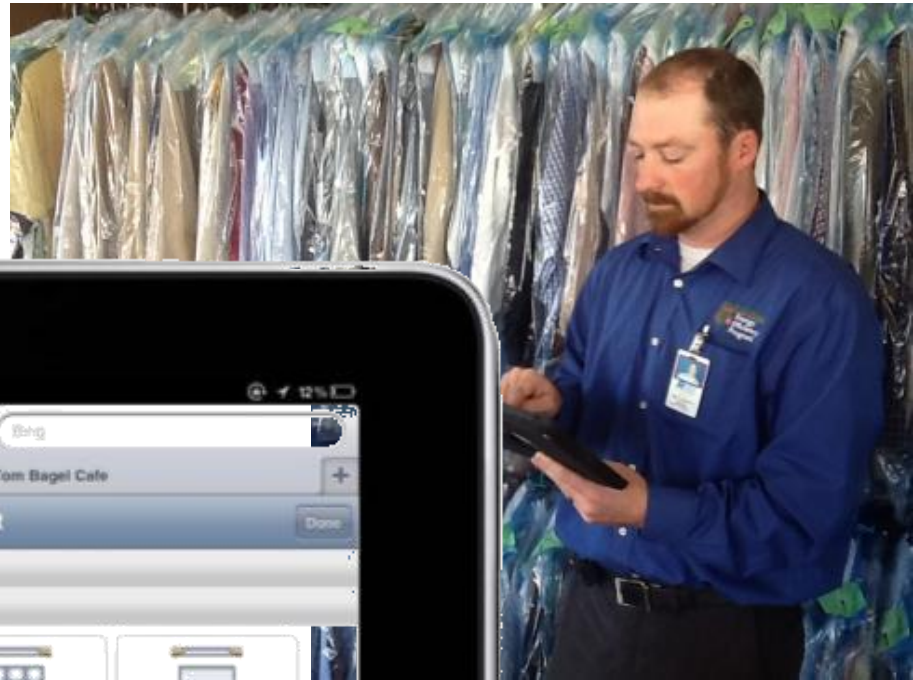


# Understanding Mass Market Customers



# Where and How are the Data Collected?





iPad 5:27 PM

a2demo.enerpath.com/?sessionUuid=bc866d53-2d78-4620-9c70-8bb0c...

Site Explorer Tom Tom Bagel Cafe

Back Perform Assess... Back Fluorescent Done

Lighting 0 > Default

Fixture Type

 Industrial 12	 Recessed Lensed Troffer 8	 Recessed Parabolic Troffer 8	 Recessed Volumetric Troffer 8
 Strip 12	 Surface Box Lensed 8	 Surface Box Parabolic 8	 Surface Wrap 8
 Suspended Direct 10	 Suspended Direct Indirect 10	 Suspended Indirect 10	

Compact Fluorescent

Exit Lighting

Fluorescent

Halogen Infrared

Halogen Infrared Quartz

Halogen Lighting

HID

Incandescent

Interior Lighting Controls

LED Lighting

Refrigeration 0 >



## Energy Saving Opportunities

Business Name:  
Owner:  
Account #  
Street Address:  
City, State ZIP:  
Phone:  
Email:

Tracking #: TVA-123456  
Assessment Date: MM/DD/YYYY

Energy Service Rep: John Smith  
ESR Phone: 123.456.7890

### Estimated Energy Savings

Estimated Annual Energy Costs



Current cost  
New cost

That's 84% savings  
in one year!

Estimated <b>CURRENT</b> annual energy cost:	\$1700
Estimated <b>NEW</b> annual energy cost:	\$900
Estimated annual energy savings	\$800

### Other Benefits

Additional benefits of an energy efficient business are manifold including those for:

#### Your Business

- Reduced material costs due to longer-lasting lamp life
- Increased property value due to decreased operational costs

#### The Environment

- Contribution to carbon emission reduction, which reduces pollution in the air
- Energy reductions that help prevent new power plants from having to be built

#### The Community

- Supporting a local workforce and the creation of green jobs within your community
- Monetary savings that can be reinvested into the local economy

\*These recommendations are based on estimates which are approximate and may not represent actual savings. Estimated savings can vary depending on operational conditions and climate. No warranty, expressed or implied, is made by these recommendations, including but not limited to any warranty of merchantability or fitness for any particular use or application.



EnerPath

energyright  
solutions





MainStreet Efficiency Program Office  
123 Center Park Drive, Suite 205  
Knoxville, TN 37922  
800.555.1234

## Customer Work Authorization

Business Name  
Owner  
Account #  
Street Address  
City, State ZIP  
Phone

Tracking #: TVA-123456  
Program Name: TVA SBCI  
Assessment Date: MM/DD/YYYY

I, \_\_\_\_\_ (Contact Name), a representative of \_\_\_\_\_ (Customer) am duly authorized to sign this Customer Authorization Form on behalf of Customer.

Customer hereby authorizes EnerPath Services, Inc. ("ESI" or "EnerPath") – Program Manager and its Contractor") to perform the following work (the "Work"): Replace and/or retrofit certain lighting equipment with the new, energy efficient lighting equipment at the Service Address set forth above and specified on the Energy Savings Opportunities Report (attached hereto) prepared by EnerPath for Customer's Facility. Customer acknowledges that Contractor has been authorized by the Tennessee Valley Authority (herein referred to by "TVA" or "Utility") to contact Customer only with regard to performing the Work, and that any other services, installations, improvements or equipment provided to Customer by Contractor have not been authorized by TVA, and TVA assumes no responsibility therefore. Customer hereby agrees that TVA makes no warranty, expressed or implied, with respect to the Work, including without limitation the implied warranties of merchantability and fitness for a particular purpose. Customer hereby agrees to hold harmless TVA, its officers, directors, and employees, from and against any and all liability, damages, losses, claims, demands, actions, costs, including attorneys' fees and expenses, and all court or arbitration or other dispute resolution costs, or any of them, resulting from arising out of, or in any way directly connected with Work performed by Contractor. Customer hereby agrees to hold the Contractor solely responsible for any and all claims, losses, liabilities, damages and expenses, including attorneys' fees and costs, which Customer may incur as a result of the Work.

Customer acknowledges that connected load at Customer's Facility may increase if the Work involves replacing burned out or missing lamps.

Customer understands that any materials removed (old ballasts and lamps) will be taken by the installation contractor and staged for pickup and disposal by a licensed hazardous disposal contractor. Customer understands that Utility may inspect and verify that the Work was performed, and hereby permits TVA reasonable access to Customer's Facility for such purpose. Customer also understands that they may be contacted regarding program evaluation and agrees to cooperate in providing needed information for the purpose of evaluation.

Customer acknowledges that certain data made available through the Energy Savings Opportunities Report may be used for the purpose of evaluating the program and analyzing energy related assets and consumption data at the Service Address set forth above and Customer consents to use of this data for the purpose of this program, and in providing Customer additional information as may be related to other energy efficiency or demand response programs or opportunities. The data will be used only for this purpose and confidentiality will be strictly protected.

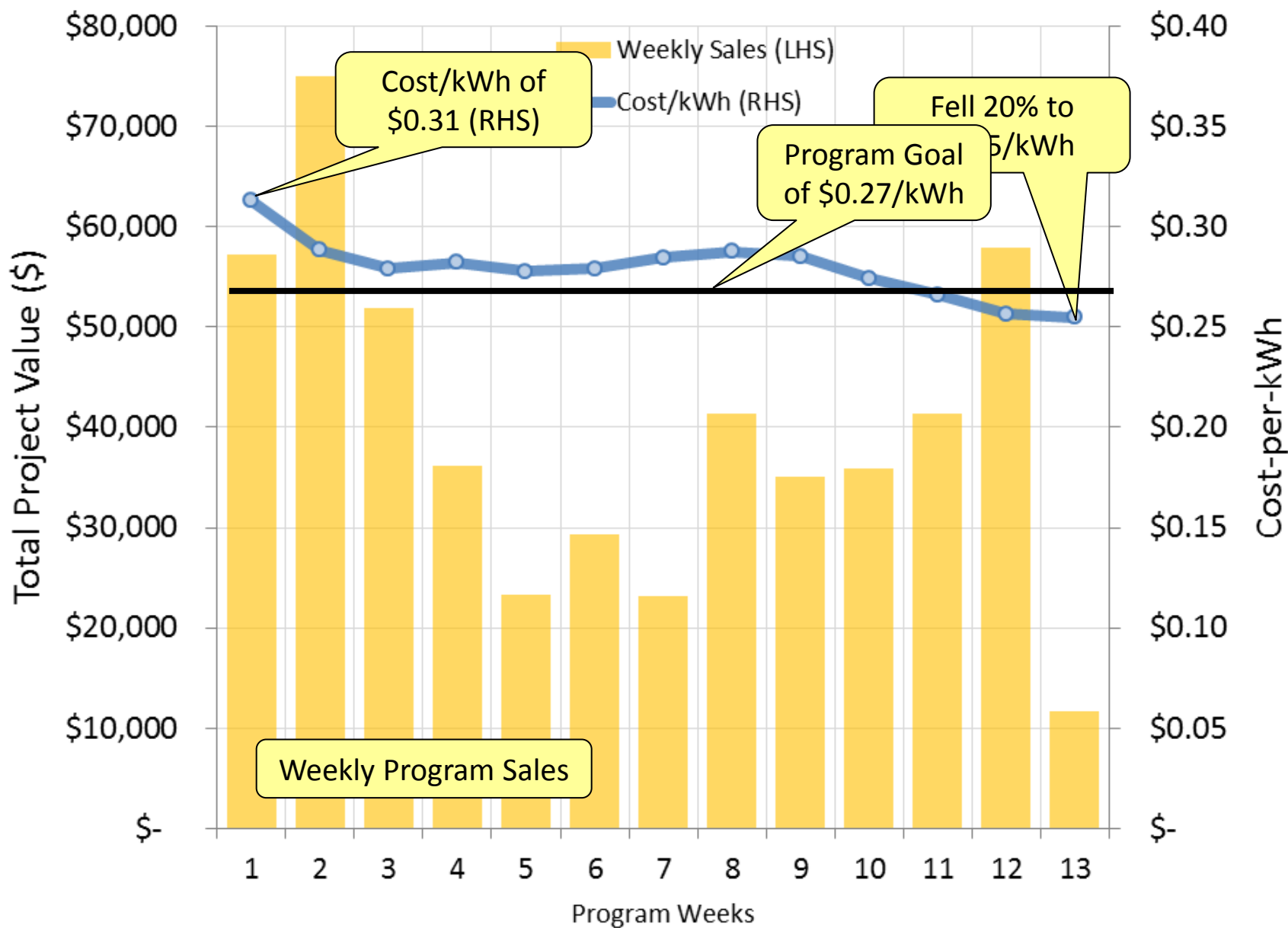
Signature: \_\_\_\_\_



EnerPath

energyright solutions TVA

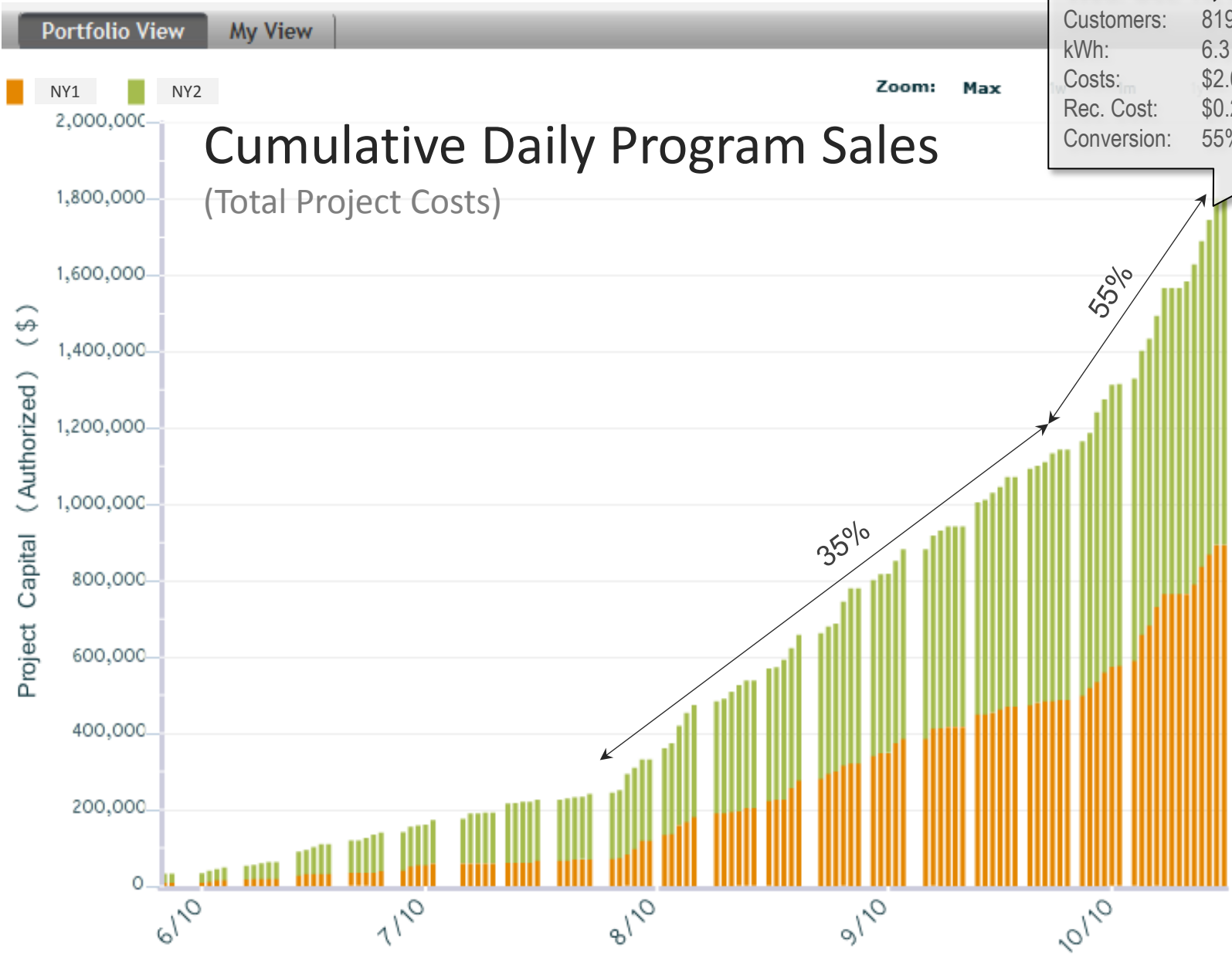
# Improving Cost-Effectiveness



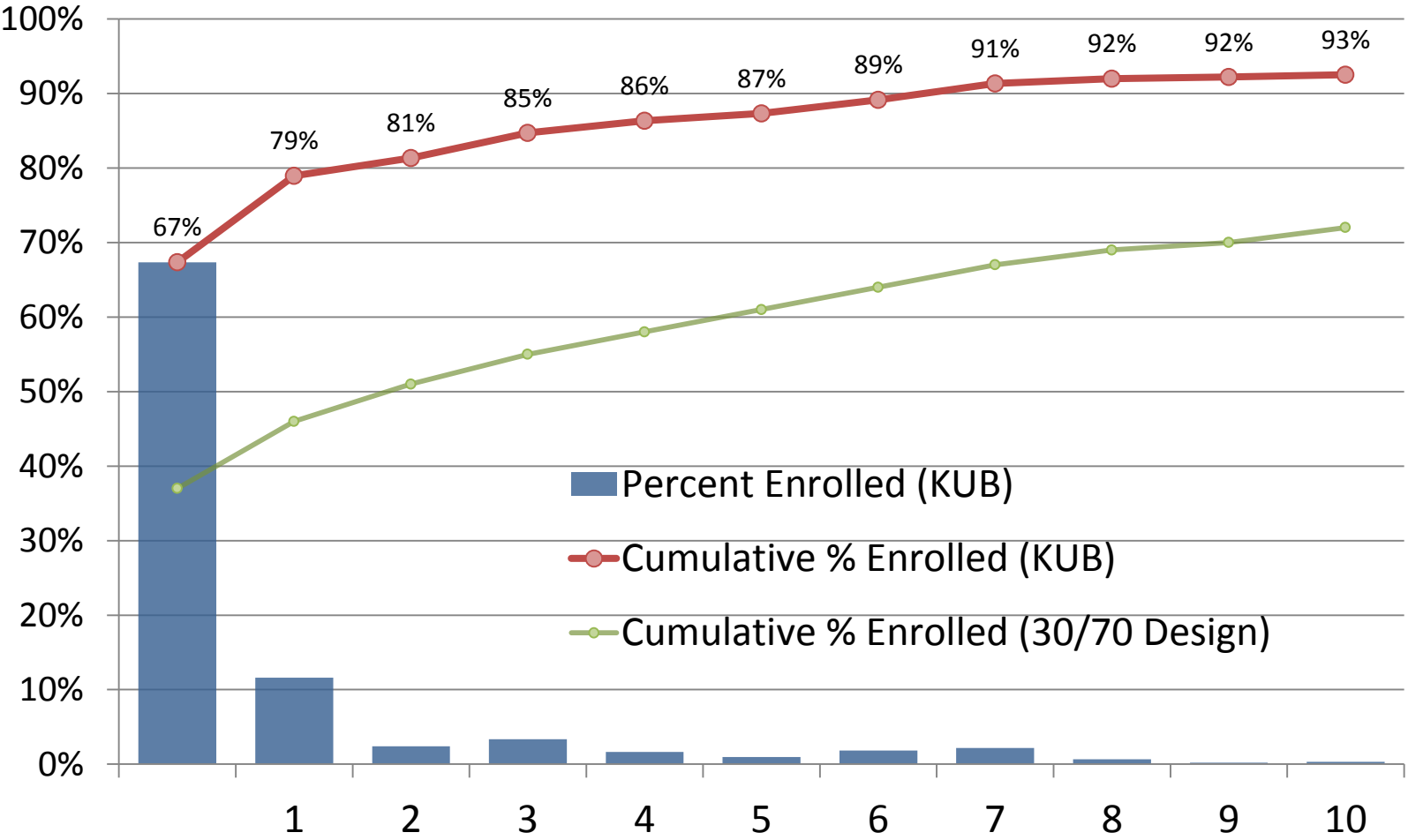
# Improving Sales



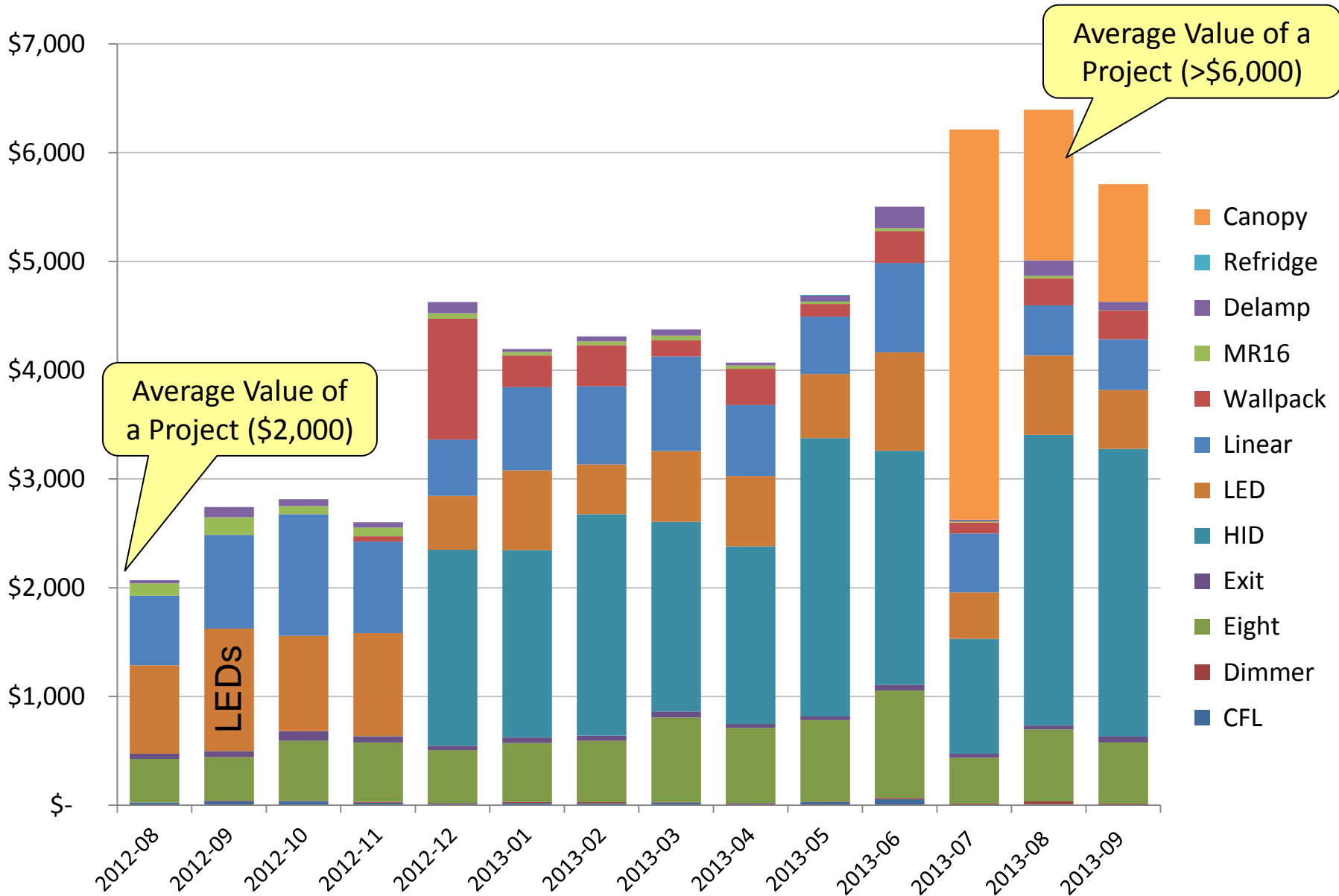
**Wed. Oct. 13, 2010**  
Customers: 819  
kWh: 6.3 million  
Costs: \$2.0 million  
Rec. Cost: \$0.23/kWh  
Conversion: 55%



# Pilot Design Impacts Adoption Rates

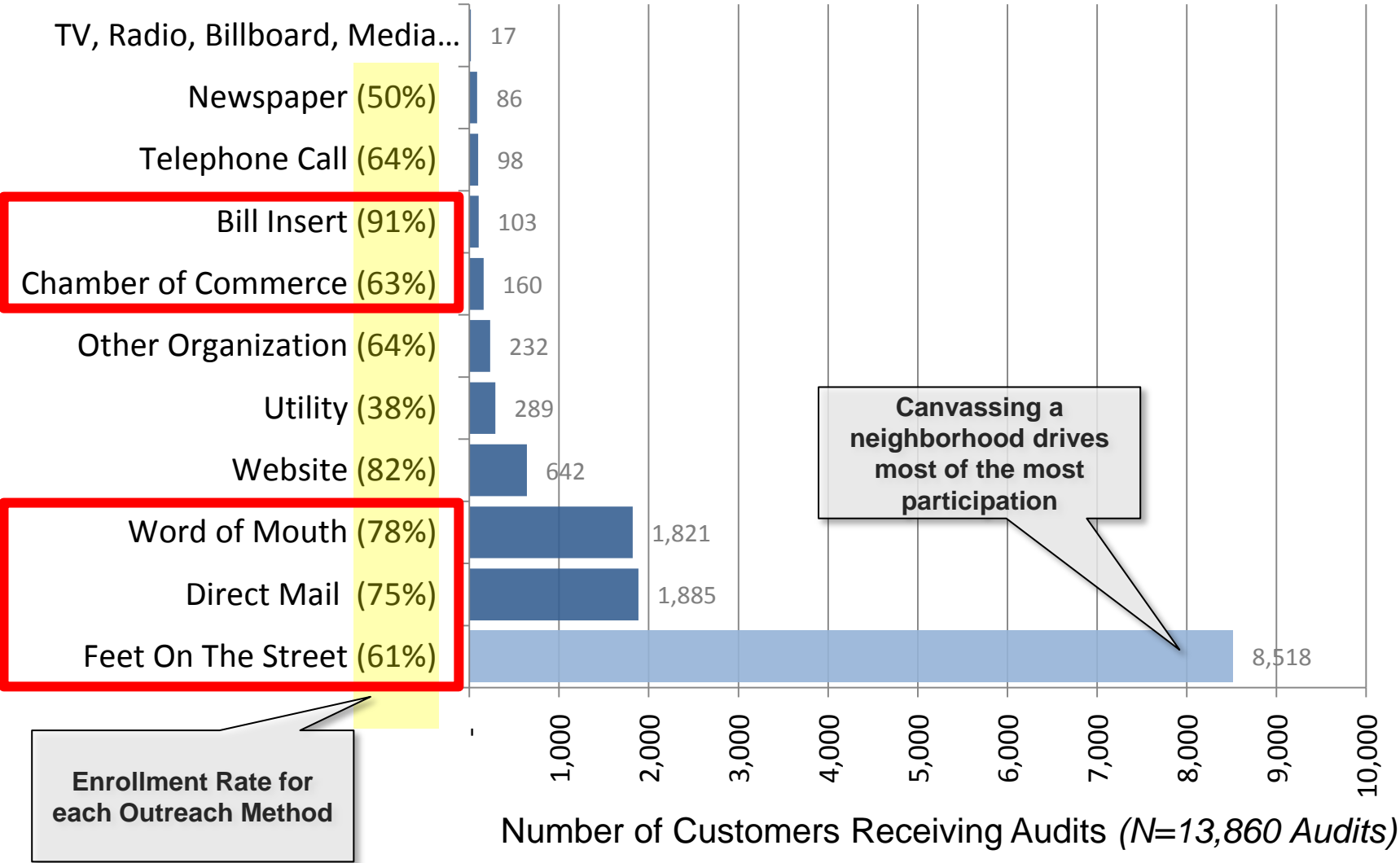


# Driving Deeper Savings Per Business



# Measuring the impact of marketing channels

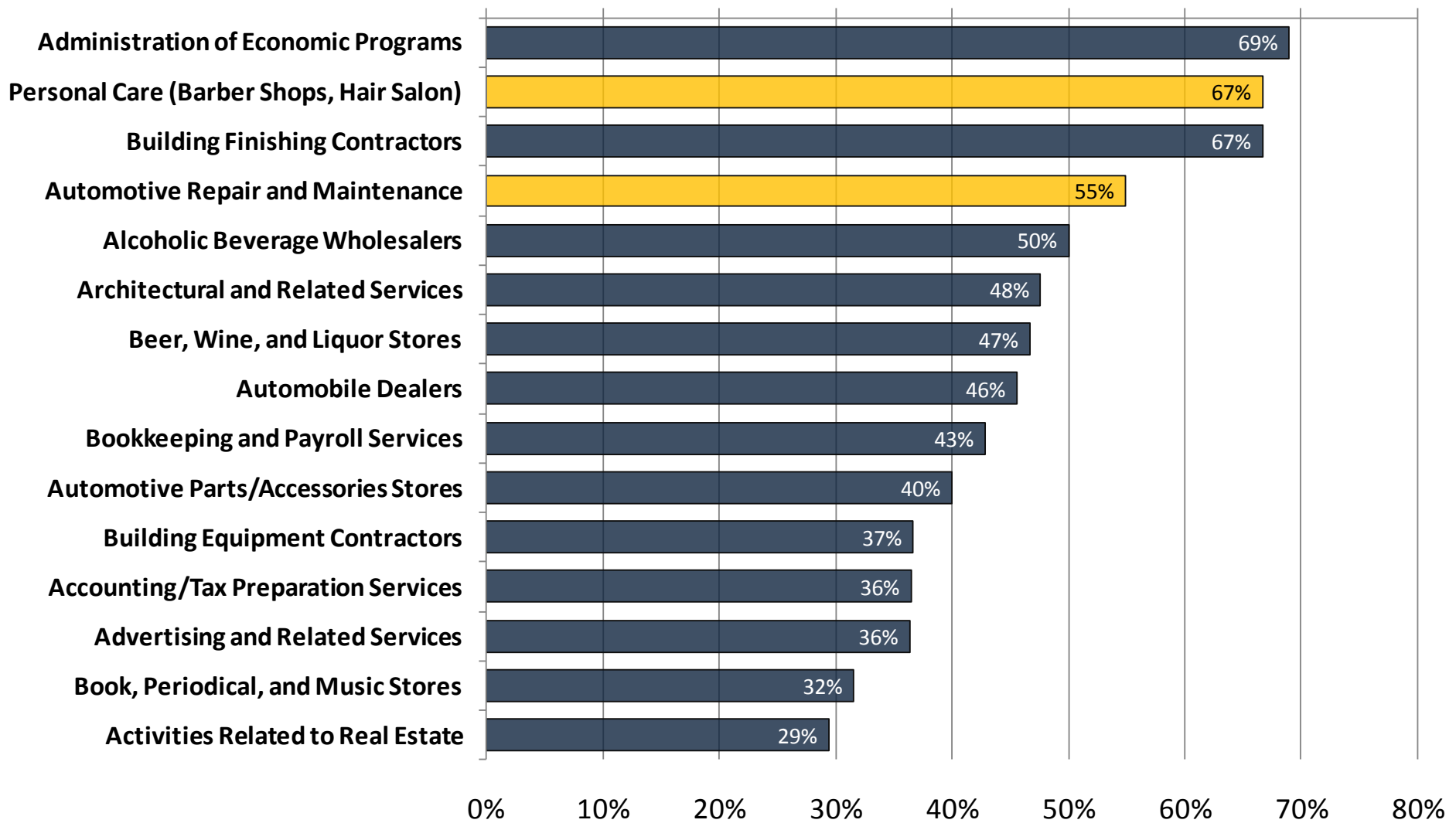
## How did customers hear about the program?



# Sub-segment Campaigns



## Adoption Rates by Business Type (NAISC)



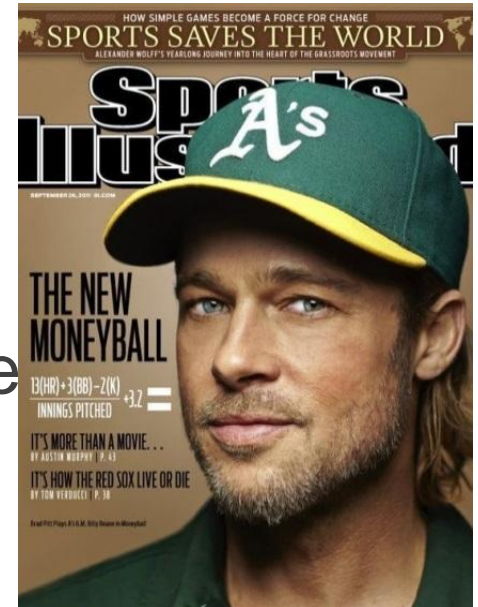


## Happy customers will buy more... if they can.

- SBDI Program in Texas found 91% of customers interested in residential EE programs.
- Appliance recycling program in California, in one year, found 50,000 of the total 153,000 participants wanted to participate in residential DR Thermostat Program
- SBDI Program in New York identified of 100 customers interested in large-commercial and multi-family programs
- Residential DI Program in Palm Desert CA where 5,500 homes enrolled in simple DI measures (\$6M of Utility Funds)
  - \$6M of utility investment resulted in \$14M of benefits
  - Identified ~1,000 customers who purchased high efficiency pool pumps
  - Identified ~300 customers willing to leverage utility funds 30:1

# The Rewards are Great!

1. Enter the data-driven world!
2. Grow sales (realized savings)
3. Improve cost-effectiveness
4. Find deeper savings (savings/customer)
5. Manage workflow
6. Increase program transparency
7. Wow your customers (improved customer sat)
8. Identify which marketing campaigns work best
9. Implement sub-segment or hyper-local campaigns
10. In the future blockbuster film about applying big data to energy-efficiency, Brad Pitt may play You!



# Thank You!

**Cambridge, MA  
Rochester, NY  
San Antonio, TX  
Redlands, CA  
Los Angeles, CA  
Knoxville, TN**

**Steven Meyers**

[steven.meyers@enerpath.com](mailto:steven.meyers@enerpath.com)

512-796-2242



[www.enerpath.com](http://www.enerpath.com)

**LAST  
SLIDE**

# Measuring Actual Installations

### Installation Records

Line#	ECM Code	Proposed Action	Assessed Qty.	Install Qty.	Qty. Installed	Qty. Not Installed	Installation Notes
1	F44T8RDX-R	Retrofit Lighting	6	6	<input type="text" value="6"/>	0	
2	No Change	No change to be made	1	0	0	0	
3	CFS18/1-SI	Retrofit Lighting	1	1	<input type="text" value="1"/>	0	
4	CFS18/1-SI	Retrofit Lighting	1	1	<input type="text" value="1"/>	0	
5	No Change	No change to be made	2	0	0	0	
6	F44T8RDX-R	Retrofit Lighting	3	3	<input type="text" value="3"/>	0	
<b>Total:</b>			<b>14</b>	<b>11</b>	<b>11</b>	<b>0</b>	

Showing 1 to 6 of 6 entries



## Los Angeles: LADWP (2008-2010)



- \$50M Total Retrofit Budget
- 26,000 small businesses retrofit in 24 months
- Up to \$2,500 of incentive per small business
- Participation Rate: >90%
- Customer Satisfaction Rate: >99%
- Average Project: Cost \$940 savings ~1kW of demand and 3,326 kWh/year
- Lighting Retrofits
- EnerPath manages 20 ESRs, 12 local subcontractors, marketing, outreach, installation, inspections, customer satisfaction, and reporting.
- Innovations: Real-time tracking via Google maps showing council districts; Lead generation for thermostats and toilets.

*"This has been one of our most successful non-residential programs, and has touched the most small businesses in a positive way," Program Manager, Los Angeles DWP*

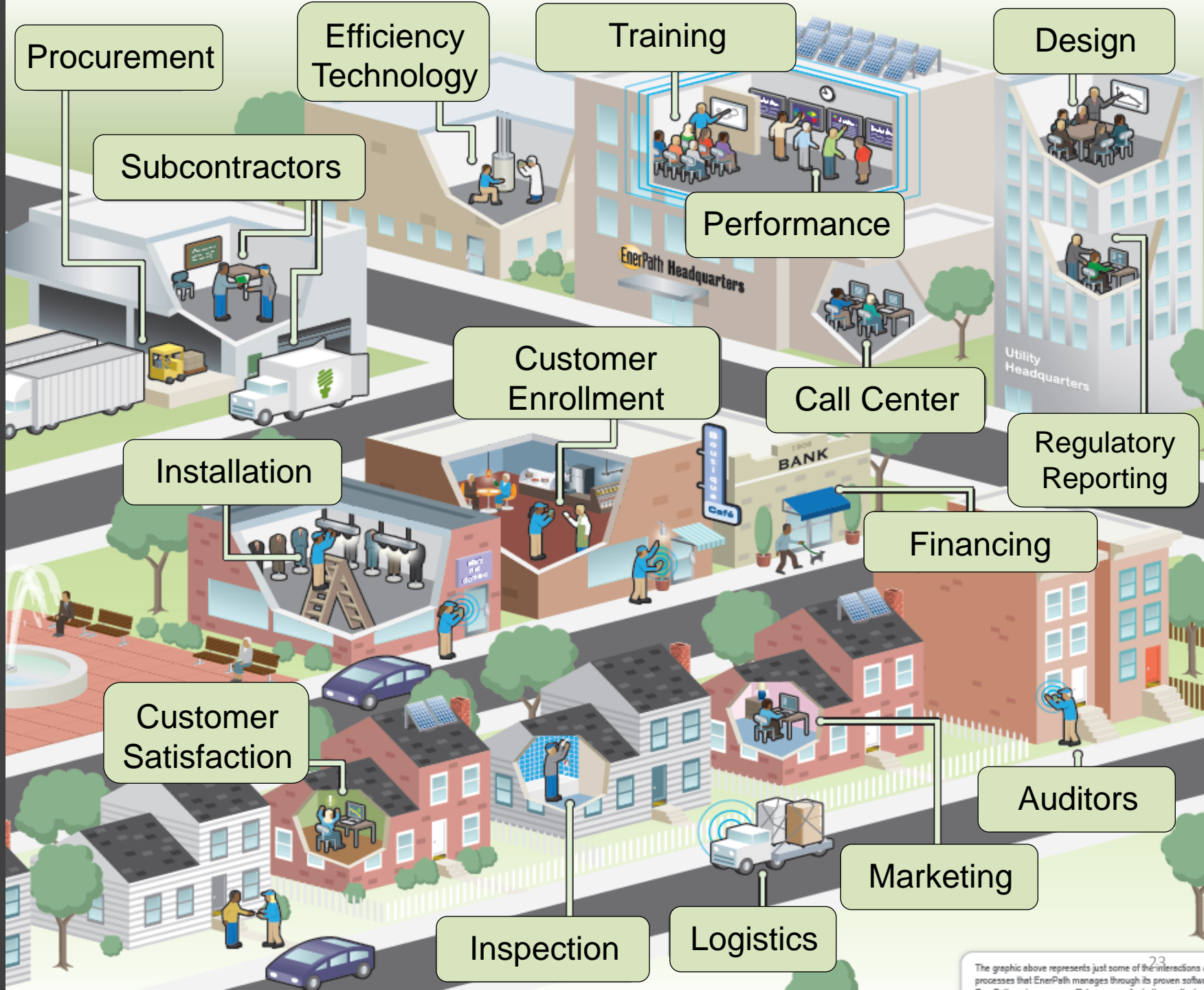
## NY: NYSEG and RG&E (2010-Present)



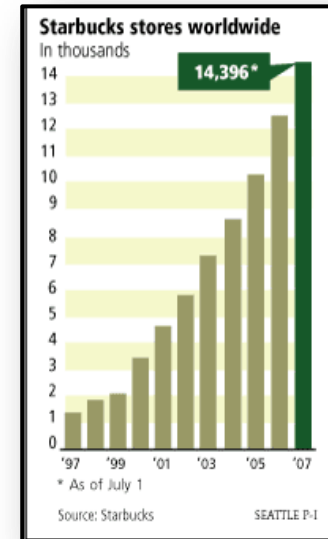
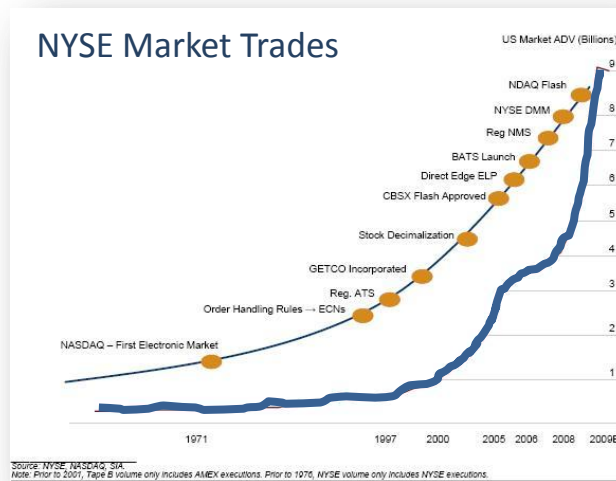
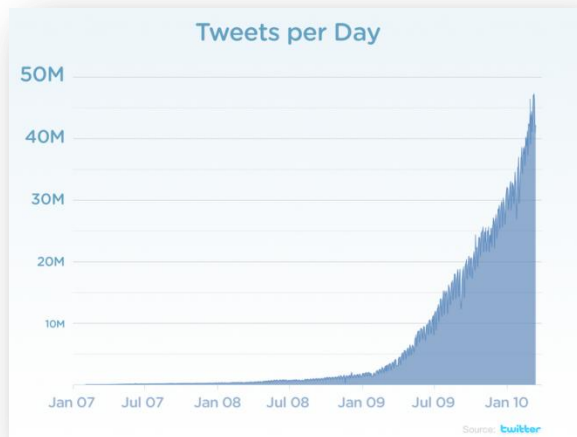
- \$30M Total Retrofit Budget
- Targeting 14,000 small businesses in 18 months
- 70% of the project costs supported by utility incentives with 30% customer Co-Pay
- Participation Rate: >65%
- Customer Satisfaction Rate: > 98%
- Average Project: Cost \$2,698 saving ~2kW of demand and 7,331 kWh/year
- Lighting Retrofits
- EnerPath manages 25 ESRs, 12 local subcontractors, marketing, outreach, installation, inspections, customer satisfaction, and reporting.
- Innovations: Multiple payment options; Community-based marketing coordinated with Utility; First deployment of iPad technology

Optimizing a Complex Supply Chain Drives Adoption

9/27/2013



The graphic above represents just some of the interactions and processes that EnerPath manages through its proven software. 23



## Energy Efficiency must be easy for customers.

1. Broad range of desirable efficient equipment that customers like
2. Easy methods of paying for efficiency
3. Delivered through an adaptive and scalable technology-enabled platform



# Customer Satisfaction

<b>How satisfied are you with our Energy Service Representative's performance?</b>	Very Satisfied	166	85%
	Satisfied	28	14%
	Not Satisfied	1	1%

<b>Did you notice and improvement in the lighting/lighting quality in your business?</b>	Yes	177	90%
	No	19	10%

<b>Would you recommend this program to another business?</b>	Yes	192	98%
	No	4	2%

<b>How would you rate the overall program performance?</b>	Excellent	132	68%
	Very Good	43	22%
	Good	18	9%
	Fair	1	1%

<b>Would you participate in a similar program?</b>	Yes	192	98%
	No	3	2%

<b>Given your experience with this program, will you make energy efficiency improvements at your home?</b>	Yes	162	83%
	No	34	17%

<b>How did you hear about this program?</b>	Letter from Utility	100	51%
	ESR at My Business	63	32%
	Word of Mouth	28	14%
	Other	5	3%

# Factors driving results

## Tenancy

	<u>Own</u>	<u>Rent</u>
Customers	513	488
Adoption Rate	90%	90%

## Referral

	<u>Direct Mail</u>	<u>Canvassing</u>	<u>Other</u>
Customers	462	436	322
Adoption Rate	95%	85%	92%

## Copay

	<u>No Copy</u>	<u>Copy</u>
Customers	1,075	143
Adoption Rate	93%	74%

# Measure Mix

Measure Type	Measure Mix		\$/kWh
	By Cost	By Savings	
Wallpack	7%	4%	\$ 0.47
Canopy	5%	3%	\$ 0.44
Exit	1%	1%	\$ 0.37
Eight	15%	12%	\$ 0.33
HID	31%	24%	\$ 0.33
Refridge	2%	2%	\$ 0.27
Linear	18%	21%	\$ 0.23
Delamp	2%	2%	\$ 0.19
LED	18%	25%	\$ 0.19
MR16	1%	2%	\$ 0.18
CFL	1%	4%	\$ 0.04
Grand Total	100%	100%	\$ 0.26