



Power System
Engineering, Inc.



Developing Optimal DSM Deployment Strategies

Using Impact Evaluations to Provide the Highest Program Value

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PSE's DSM Experience

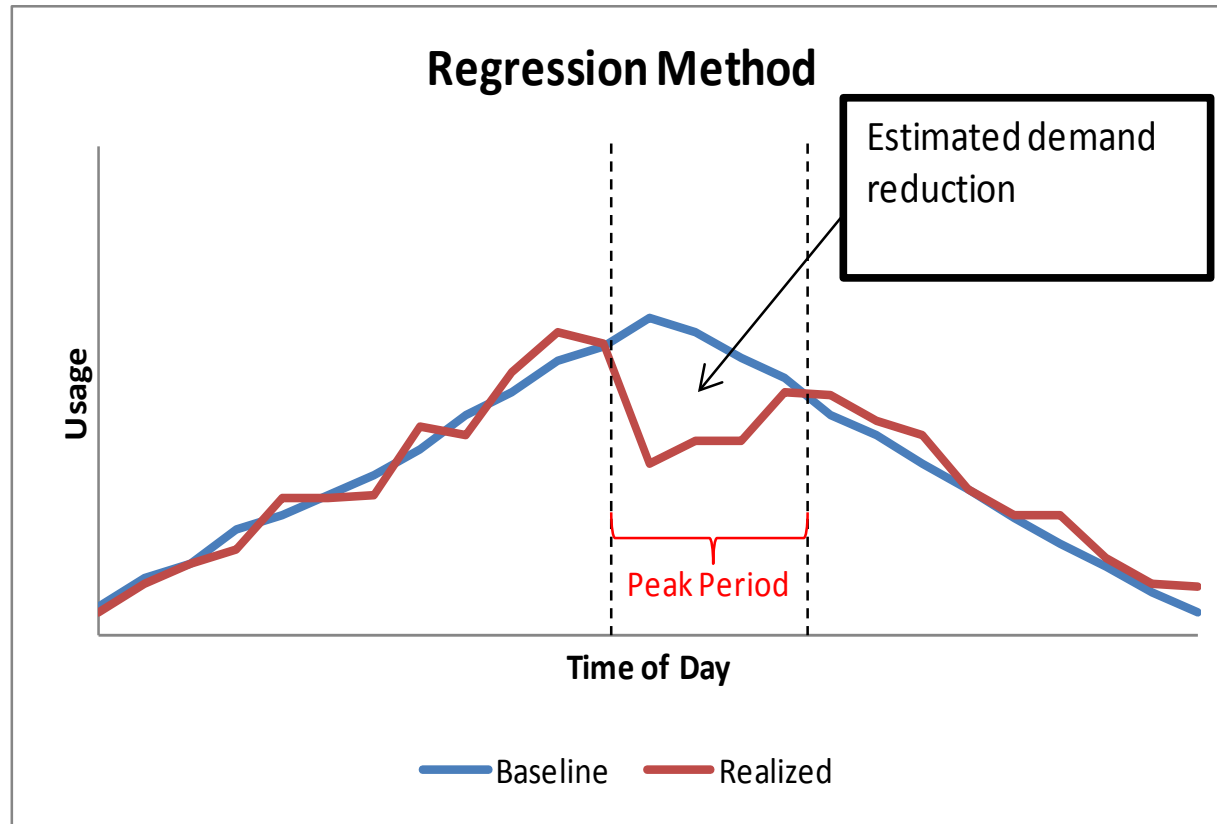
- Study and Deployment Team Leader on \$60 Million DOE Smart Grid Demonstration grant involving 23 utilities across the country
- Cost/benefit, demand impact evaluations, M&V, and deployment strategy research for numerous utility DSM programs around the country
 - Including Opower M&V evaluations, direct load control, dynamic pricing, and other energy efficiency programs
- Leading upcoming EUCI conference in St. Louis at the end of January “Demand Response: The Economic and Technology Considerations from Pilot to Deployment”.

Presentation Agenda

- Advantage of Regression Analysis
- Why Looking at Consumer Characteristics is Important When Evaluating DSM Programs
- Value Proposition in Customizing Deployment Strategy for Consumer Characteristics
- Key Elements and Steps for Optimal Deployments

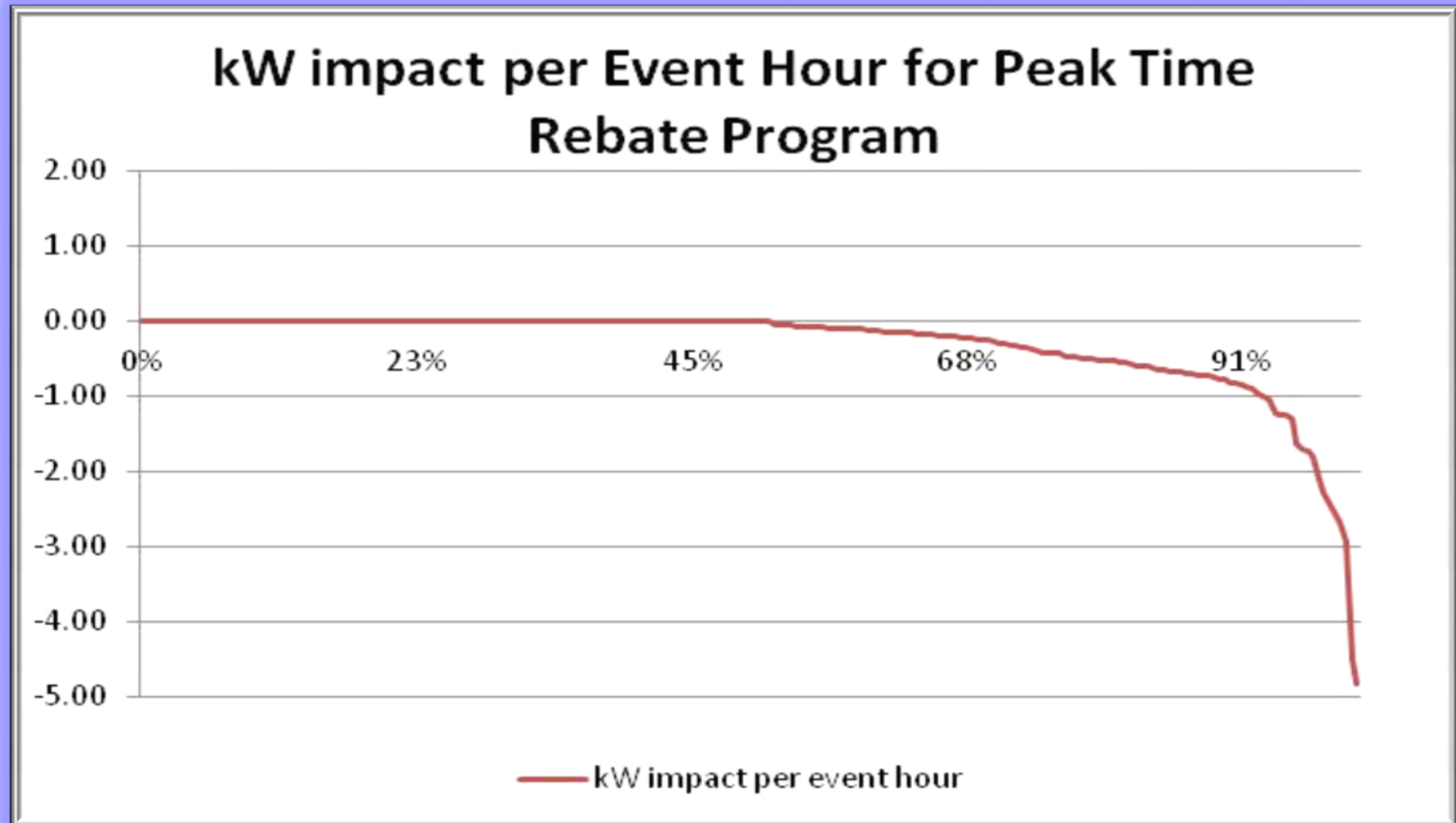
Regression Methods in Demand Impact Evaluations

- Compare hourly expected demand to actual demand
- Expected demand is a function of climate changes, event, **participant characteristics**, etc...



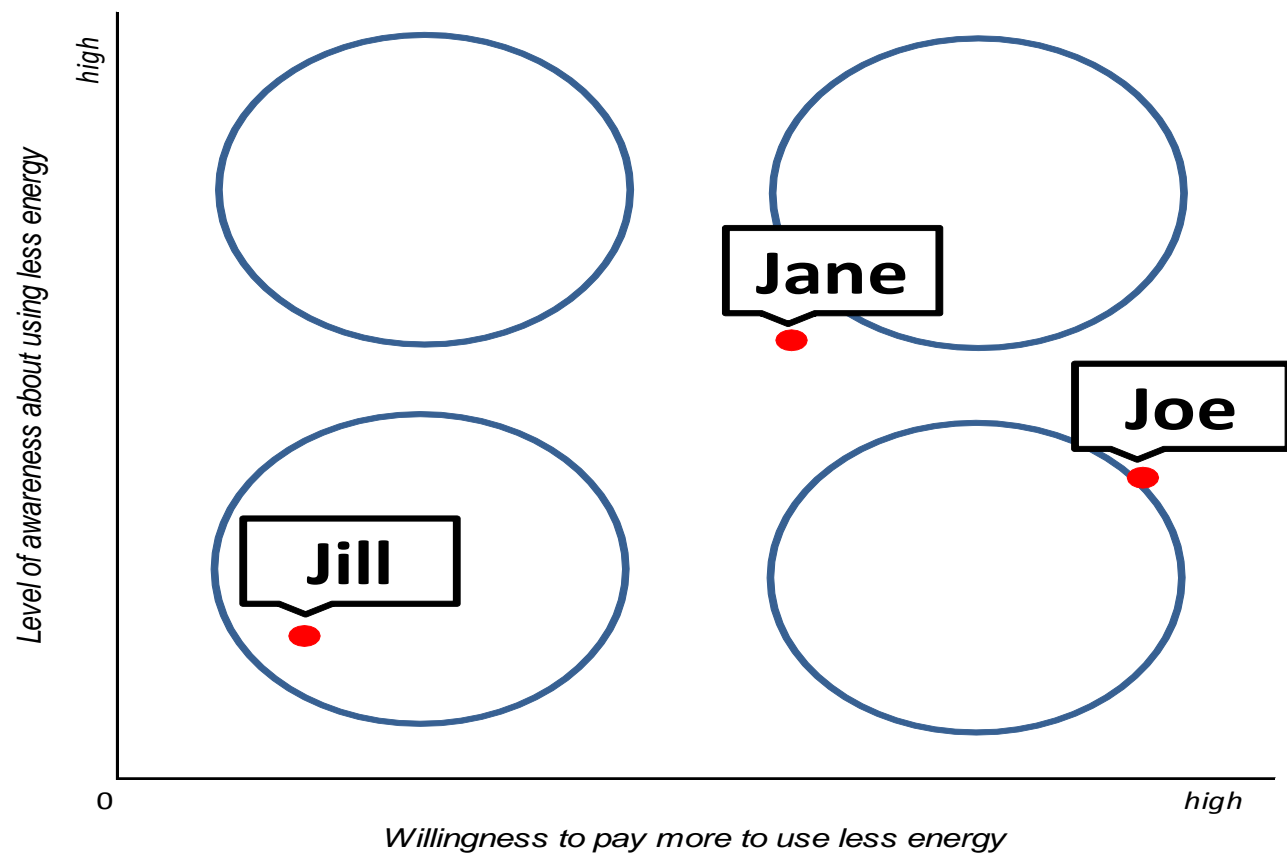
Why Are Key Drivers Important?

- First half of participants don't respond... most benefits produced by 10% of the people



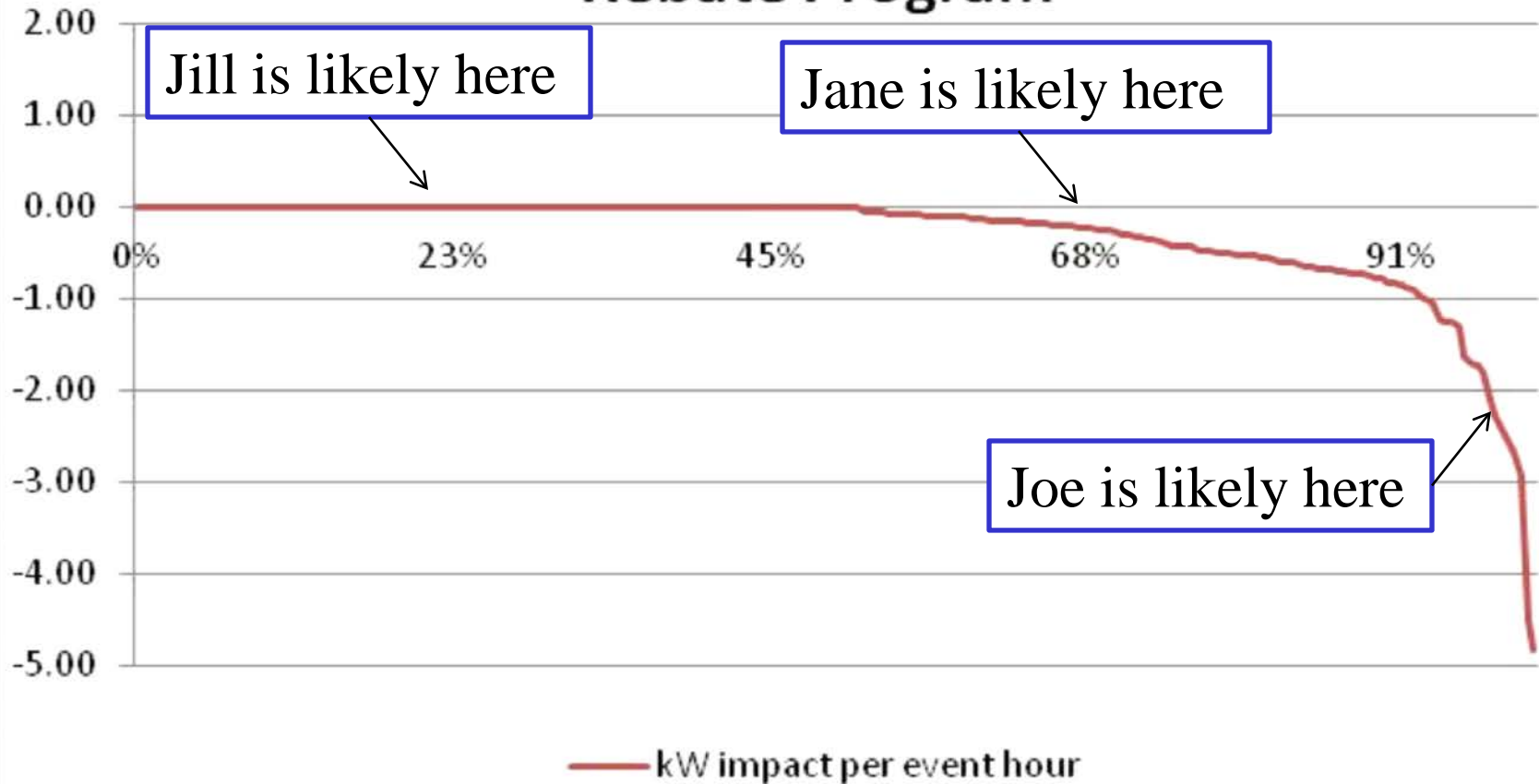
Assume a System of Three Consumers

- Jane has the motivation to change behavior, Joe has the ability to change behavior. Jill has neither



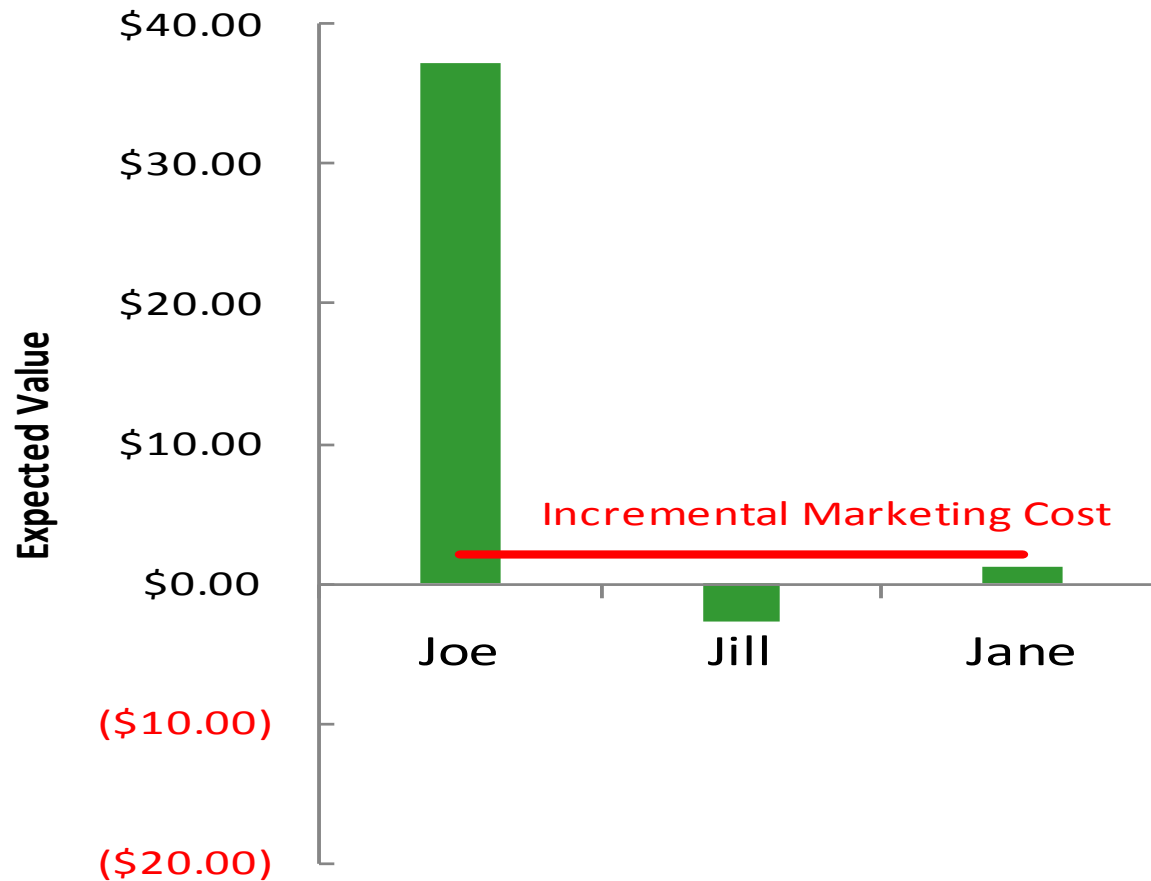
Why Are Key Drivers Important?

kW impact per Event Hour for Peak Time Rebate Program



Potential Value Proposition

Reallocate marketing resources from Jill to Joe



Value of DSM Program

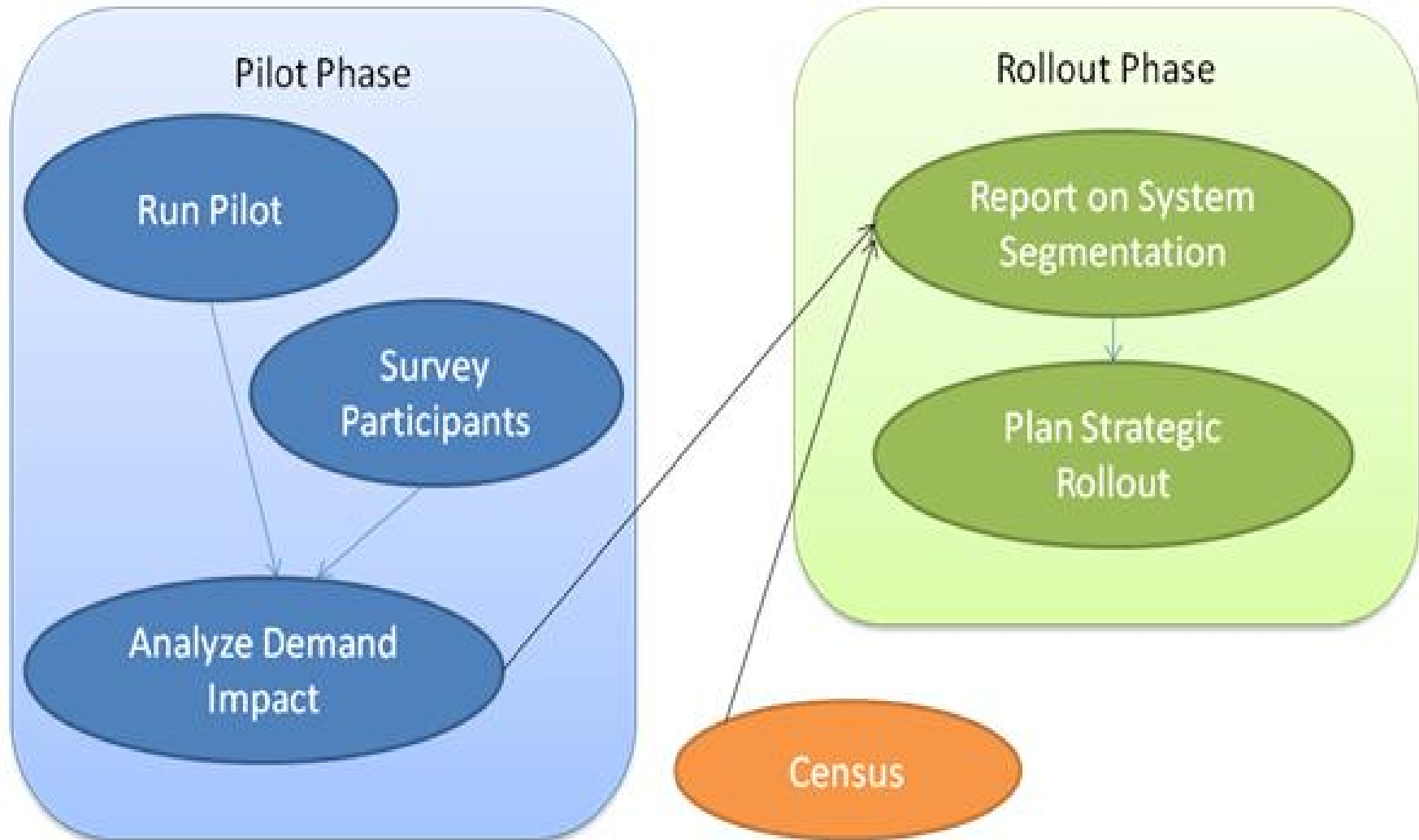
Customized strategy increases chances of Joe participating and decreases chances of Jane leading to less waste and higher benefits

**Assume a
10,000
customer
system
comprised of:**

- 1/3 “Joe’s”
- 1/3 “Jill’s”
- 1/3 “Jane’s”

Consumer Type	Expected Value (no customized strategy)	Expected Value (customized strategy)
“Joe” Consumers	\$124,321	\$372,963
“Jill” Consumers	\$(8,999)	\$(1,800)
“Jane” Consumers	\$3,833	\$3,833
Total Value	\$119,155	\$374,996

PSE Suggested Key Elements



Suggested Steps for DSM

1. Pilot program with multiple marketing strategies
2. Survey participants
3. Demand/energy impact analysis of pilot
4. Census or other data gathering of system
5. Segmentation and optimized roll-out strategy
 - Target low-hanging fruit and maximize program ROI
 - Manage customer perceptions, expectations, and word-of-mouth

Questions?

Thank You!

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