

DATA-DRIVEN PROGRAM MANAGEMENT

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WHEN *Experience* MATTERS



AGENDA

1. Thermostats as Consumer Devices
2. Leveraging Data Effectively
3. Data-Driven Program Planning



THERMOSTATS AS CONSUMER DEVICES

- Thermostats have evolved into data-driven consumer devices
- Internet of things opens new data and opportunities for M&V
- Variation in mix of functionality across thermostats can cause problems
 - Differentiating between noise and impacts in data
- Energy savings is not the only driver for purchasing thermostats

HOW TO LEVERAGE DATA EFFECTIVELY

PROGRAMMATIC APPLICATIONS

How can we most effectively deliver the program?

ANALYTIC APPLICATIONS

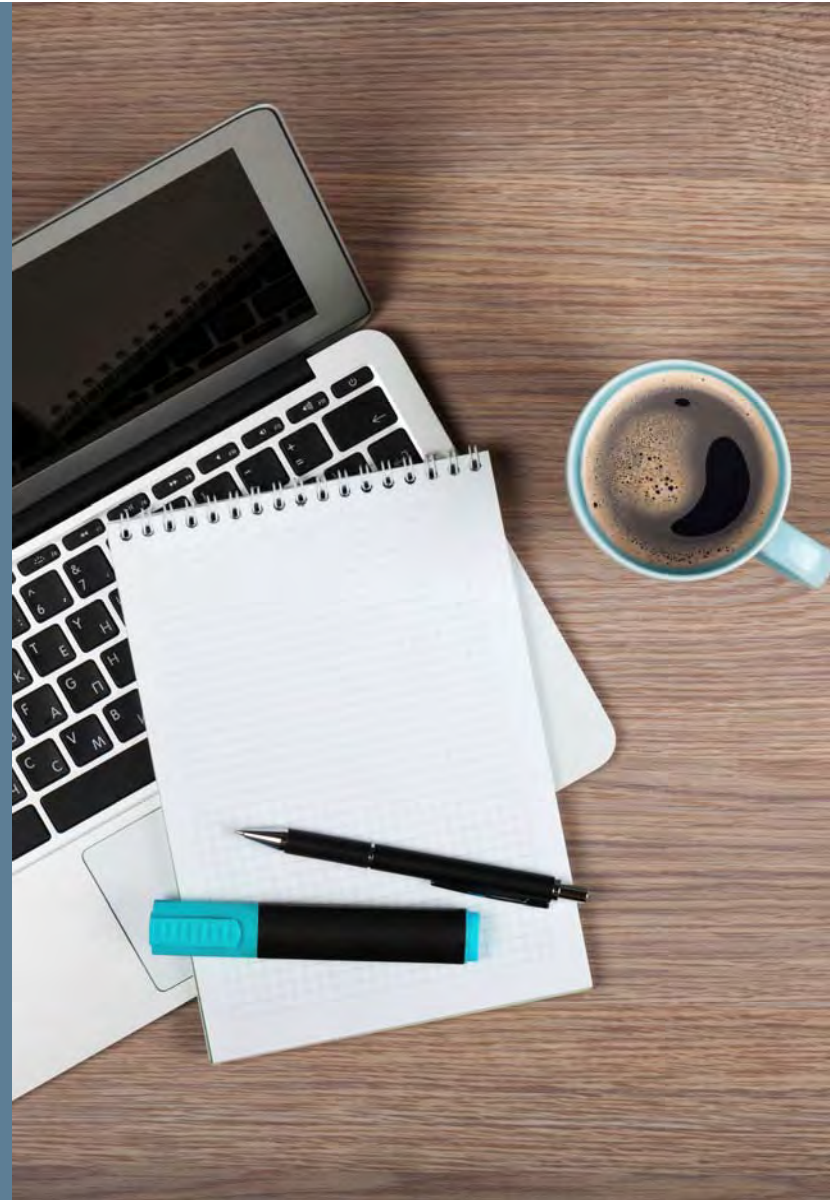
How effective was the program we delivered?

Combining the analysis of data sets allows one to view each device in the context of the real world.

WHEN *Experience* MATTERS

DATA-DRIVEN PROGRAM PLANNING

1. Develop Program Framework
2. Collaborate with Utility
3. Research/Collect Outside Data
4. Research and Select Thermostat
5. Develop Program Operating Plan
6. Develop Weather Forecasting Tools
7. Implement Program



1

DEVELOP PROGRAM FRAMEWORK

- Research topics and questions
- Implementation strategy
 - DR strategy?
 - BYOT vs Multi-Device vs Single Device?
 - DI component?



2

UTILITY COLLABORATION

- Research AMI System
 - Interval Timing
 - Data Sharing Requirements
- Collect Participant Attribute Data
 - Customer List
 - Customer Satisfaction Surveys, etc.
- Collect Historical AMR Data of Participant Pool
 - Analyze usage, loadshapes, etc.

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OUTSIDE
DATA
COLLECTION

THERMOSTAT
SELECTION

PROGRAM
OPERATING
PLAN

WEATHER
FORECASTIN
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IMPLEMENT
PROGRAM

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OUTSIDE DATA COLLECTION

- Historic Weather Data (NOAA)
- RECS Data
- Census Data
 - Sources:
 - US Decennial Census (10 years)
 - American Housing Survey (2 years)
 - American Community Survey (1 year)
 - Research what/how data is collected for 1:1 comparisons

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THERMOSTAT SELECTION

- Driven by Program Strategy
- Research Specific Devices and Manufacturers
 - What data is collected?
 - When is data time stamped?
 - At creation OR when it hits the server?
 - Smart-cycling DR thermostats?

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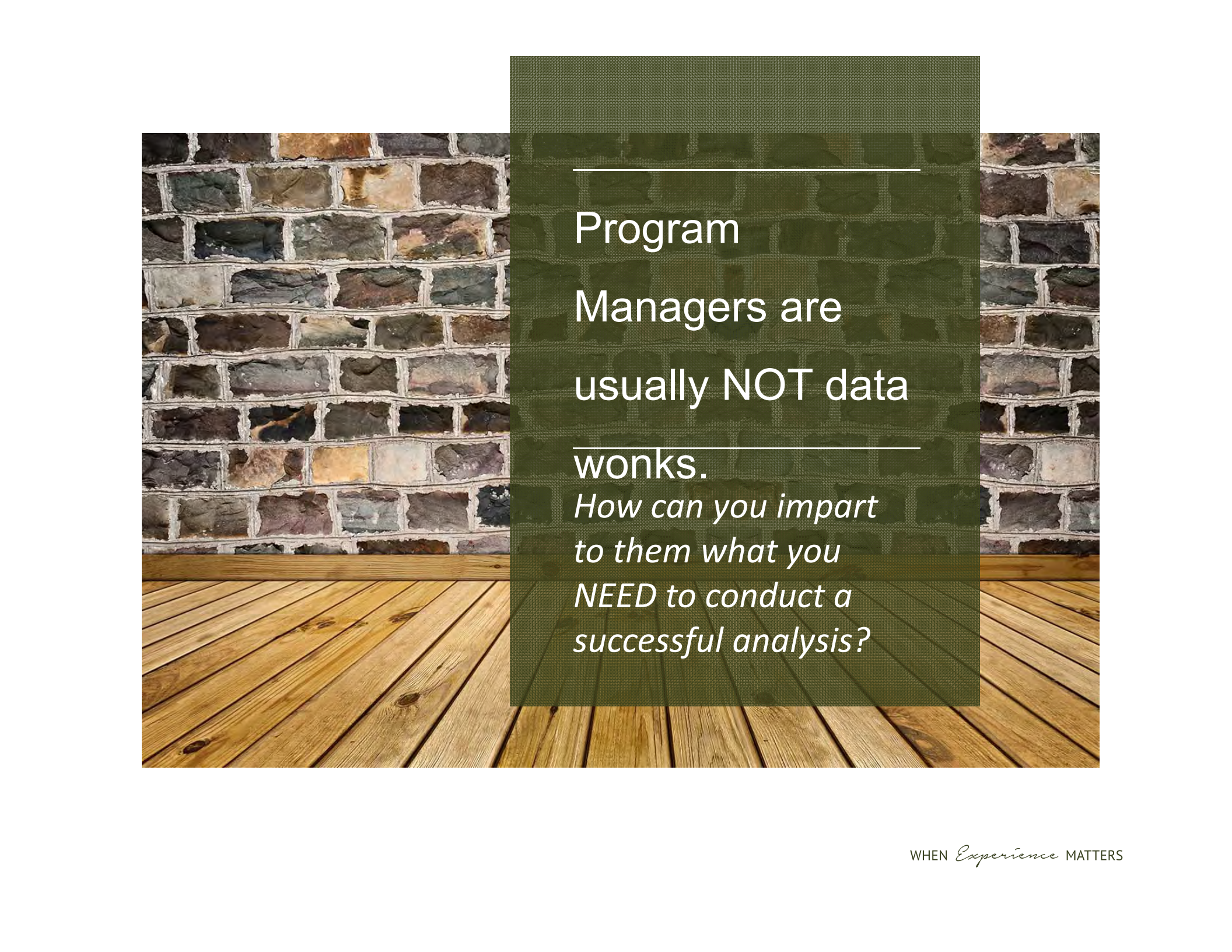
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PROGRAM OPERATING PLAN

- Research Plan
 - Research Questions
 - Analysis Methodology
 - Data Requirements
 - Min volume of participants
 - ID data sets to collect (timing/sequence of generation and collection)
 - Quality requirements
- Outreach and Recruitment Strategy
 - Research % realization rate of recruitment channels
 - Target customers based upon analysis of historic AMR data

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Program
Managers are
usually NOT data
wonks.

*How can you impart
to them what you
NEED to conduct a
successful analysis?*

PROGRAM OPERATING PLAN (CONT.)

- Program Management Plan
 - Overview of data sets/sources
 - Data Collection Mechanisms
 - Online registration system, DI Techs, participant surveys, etc.
 - Program Operations Data
 - *What data do they need to collect to record their actions/decisions?*
 - Timing of Data Collection
 - Historic Data: Collect from existing sources (Ex: AMR Data)
 - One-time Data: One chance to collect (Ex: Registration Data)
 - Ongoing Data: Collect periodically (E.g. Weather Data, AMR Data)
- Participant Communication Guidelines

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WEATHER FORECASTING SYSTEM

- Valuable Tool for Program Management
- Ensures consistent:
 - Logic in program management decisions
 - Implementation of DR strategy
- Facilitates:
 - Larger understanding of weather within program territory
 - Communication with Participants

IMPLEMENT PROGRAM

WEATHER FORECASTING SYSTEM

PROGRAM OPERATING PLAN

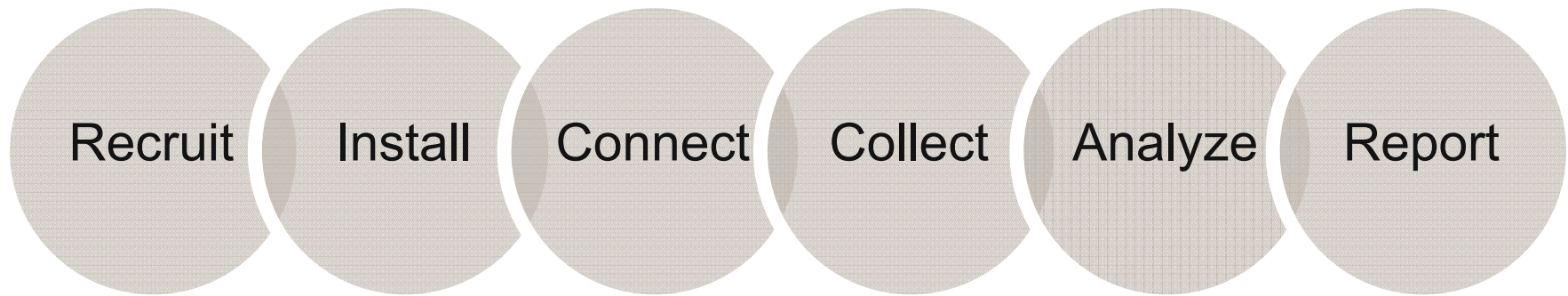
THERMOSTAT SELECTION

OUTSIDE DATA COLLECTION

UTILITY COLLABORATION

DEVELOP PROGRAM FRAMEWORK

IMPLEMENT PROGRAM



QUESTION S



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THANK YOU

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