Energy Efficiency and Demand Response Programs

Con Ntalianis, Robert Straubinger
SAP Labs
Agenda

Energy Efficiency and Demand Response Programs

• Program Requirements

• Program Management
  – Campaign management
  – Segmentation
  – Automation and Execution

• AMI
  – Technology, Enhancement, Solution Integration

• Summary
DSM Expectations (Customer Workshop)

Program Targeting
- Gather Customer Information
- Define eligibility requirements
- Grow program-adoptation
- Approval process

Program Creation
- Define program goals
- Define terms of program
- Program proposal and approval
- Program simulation - pilot

Program Strategy
- Legislation
- Corporate Initiatives

Program Decommissioning
- Rate changes
- Device disposition
- 3rd party integration
- Customer notification

Lead/Opportunity Mgmt
- Process tracking

Program Administration
- Eligibility (proof of qualification)
- Execution / enrollment
- Equipment requirements
- Equipment verification
- Fulfillment (ie loans and rebates)
- New program potential – future business
- Ongoing analysis - reapportioning
- Exception handling

Monitoring and Reporting
- Budgeting
- Forecasting
- Goals dashboard
- Customer Feedback on demand
- Program Performance Analytics
- Program evaluation
- One view of the customer
- Various reporting
- Auditing (internal & external)
Functional Expectations

Programs around Energy Efficiency, Demand Response, AMI Pilots require comprehensive planning, execution and monitoring tools

- 360° view of program
- Easy-to-use, rich functionality
- Consistency in marketing, enrollment, billing and tracking
- Integration to equipment and (AMI) infrastructure
- Analytics of program success, cost and revenue
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Program Management Processes

Programs around Energy Efficiency, Demand Response, AMI Pilots require comprehensive planning, execution and monitoring tools.
Program Design

Programs around Energy Efficiency, Demand Response, AMI Pilots require comprehensive planning, execution and monitoring tools.

**Example 1:**
Create a demand response capacity of 100 MW in the residential customer base. Participants receive free equipment and a one time credit of $50.

**Example 2:**
Enroll commercial customers in a critical period agreement. Smart meter is required. Comparison to last month. Credit if current consumption below previous month in critical peak period.
## Fit of Marketing capabilities in SAP CRM

### Marketing capabilities in SAP CRM

<table>
<thead>
<tr>
<th>Mkt. resource management</th>
<th>Segmentation and list mgmt.</th>
<th>Campaign management</th>
<th>Lead management</th>
<th>Trade promotion management</th>
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<tbody>
<tr>
<td>Strategy and planning</td>
<td>External list import</td>
<td>Multichannel execution</td>
<td>Lead generation</td>
<td>Business Planning &amp; Perf Mgmt.</td>
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<tr>
<td>Budget and costs</td>
<td>Segments and list mgmt.</td>
<td>E-marketing</td>
<td>Lead qualification</td>
<td>Trade Promotions</td>
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<tr>
<td>Couponing</td>
<td>Marketing attributes</td>
<td>Dialog marketing</td>
<td>Lead distribution</td>
<td>Retail Execution</td>
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### Marketing analytics

<table>
<thead>
<tr>
<th>Predictive analytics</th>
<th>Measurement and reporting</th>
<th>Customer analytics</th>
<th>Forecasting and planning</th>
<th>Optimization and refinement</th>
<th>Product analytics</th>
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</thead>
</table>
Program Management Processes

Programs around Energy Efficiency, Demand Response, AMI Pilots require comprehensive planning, execution and monitoring tools.
Programs around Energy Efficiency, Demand Response, AMI Pilots require comprehensive planning, execution and monitoring tools.

- **Create Marketing Plan**
  - Timeline
  - Budget
  - Resources
- **Campaign Management**
  - Activities
  - Segmentation
  - Preparation of Execution
### Campaign Details

#### General Data
- **ID**: C/2008-ISU-DEM-001
- **Description**: Peak Shaving Residential
- **Type**: Rate Change Campaigns
- **Objective**:
- **Tactic**: high
- **Priority**:
- **Employee Responsible**: Steven Park
- **Marketing Organization**:
- **Currency**:
- **Parent**: C/2007-ISU-ELC
- **Authorization Group**:

#### Dates
- **Planned Start**: 11/01/2008
- **Planned End**: 02/01/2009
- **Current Status**: Released
- **New Status**:

#### Channel
- **Communication Medium**: Personalized e-Mail
- **Sender**: Steven Park
- **Form for E-Mail**: Z_ISU_ECCELECTRICITY_INFO_HTML
- **E-Mail Address**: WEBMASTER

### Segments

<table>
<thead>
<tr>
<th>Action</th>
<th>Segment</th>
<th>Description</th>
<th>Job Status</th>
<th>Target Group Size</th>
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<tbody>
<tr>
<td></td>
<td>Target Group</td>
<td>Residential customer, Electricity</td>
<td>Job not scheduled</td>
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### Products

<table>
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<th>Action</th>
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<th>Edit List</th>
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<tr>
<td></td>
<td></td>
<td>No result found</td>
</tr>
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</table>

### Parties Involved

<table>
<thead>
<tr>
<th>Action</th>
<th>Edit List</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>No result found</td>
</tr>
</tbody>
</table>

### Notes
### Target Group: Residential customer, Electricity

#### General Data
- **Target Group**: Residential customer, Electricity
- **Usage**: Campaign
- **Profile Set**: Residential electricity customer
- **Segmentation Basis**: Residential customer, Electricity

#### Administrative Data
- **Created By**: Axel Nemminger (MEMMNGERA) on 05/03/2002
- **Changed By**: Steven Park (UT-MM-P) on 10/03/2008

#### Deduplication
- **Deduplication Method**: No Deduplication/Undo Deduplication
- **Priority**: 0

#### Size
- **Planned Size**: 0
- **Current Size**: 53

#### Status
- **Active**: ✓
- **Modeling Completed**: 

#### Target Group Member List
- **Insert**, **Search Members**, **Show assigned Objects**

<table>
<thead>
<tr>
<th>Member ID</th>
<th>Member</th>
<th>City</th>
<th>Country</th>
<th>Main Contact</th>
<th>Employee Responsible</th>
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<tr>
<td>ISU031A094</td>
<td>Cindy Winslow</td>
<td>New York City</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISU031A062</td>
<td>Clara Dominguez</td>
<td>New York City</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>ISU031A053</td>
<td>Joseph Edwards</td>
<td>New York City</td>
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<tr>
<td>ISU031A074</td>
<td>Stephen Hague</td>
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<td>ISU031A097</td>
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<tr>
<td>ISU999A999</td>
<td>Henry Wistuba</td>
<td>New York City</td>
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<tr>
<td>ISU031A088</td>
<td>Richard Adam</td>
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<tr>
<td>ISU031A079</td>
<td>Samuel Walters</td>
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<tr>
<td>ISU031A073</td>
<td>Ken Threl</td>
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Program Management Processes

Programs around Energy Efficiency, Demand Response, AMI Pilots require comprehensive planning, execution and monitoring tools.
Campaign Execution
Programs around Energy Efficiency, Demand Response, AMI Pilots require comprehensive planning, execution and monitoring tools.
Customer Enrolment Process

- Enrolment standalone or combined with Utilities service
- IC WebClient integration
  - Campaign alert
  - Contract Management Process for product change
  - Product Selection
- AMI integration
  - Review equipment

Programs around Energy Efficiency, Demand Response, AMI Pilots require comprehensive planning, execution and monitoring tools.
Customer is part of campaign C/2008-ISU-DEM-001.
Offer enrollment, check equipment status.
Customer is part of campaign C/2008-ISU-DEM-001.
Offer enrollment, check equipment status.

Set up new contracts at Denver, Elliott Lane 1048
Contracts start on 11/10/2008
Create contracts from New premises at (Denver, Elliott Lane 1048)
Customer is part of campaign C/2008-ISU-DEM-001. Offer enrollment, check equipment status.

Contract Management - New Contracts

Set up new contracts at Denver, Elliott Lane 1048

Contracts start on [ ] Apply
Create contracts from [ ] Go

<table>
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<tr>
<th>Division</th>
<th>Select</th>
<th>Item</th>
<th>Product</th>
<th>Config</th>
<th>Description</th>
<th>Premier Address</th>
<th>Start Date</th>
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<tr>
<td>Electricity</td>
<td>☑</td>
<td>10</td>
<td>ISU_ELE_SUPPLY4</td>
<td>☑</td>
<td>Electricity/High Risk Cust./Secdo...</td>
<td>Denver, Elliott Lane 1048</td>
<td>1/10/2008</td>
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Parameter | Value
--- | ---
Interruptible A/C | 18 kW
Serialnumber | 
Peak Saving Enrollment | Yes
Smart Meter Pilot Program | Yes
3-Tier-Savings-Plan | 
Eco Electricity Commitment | 10$/Month
Loyalty Enrollment | Yes
Programs around Energy Efficiency, Demand Response, AMI Pilots require comprehensive planning, execution and monitoring tools.
Integration of CRM and Billing

Enrolment

- Program participation as product or product attribute
- Product search integrated with AMI services representing meter capabilities
- Definition of product attributes aligns with meter
- Attributes informational or billing related
- Billing related parameters correspond to billing facts

Analytics

- Evaluation of customer performance in demand response programs
- Feedback for segmentation input
- Standard reports for marketing and campaign monitoring
Agenda

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  – Automation and Execution
• AMI

• Summary
What is AMI?

**Advanced Metering Infrastructure (AMI)** is a communication network and meters providing usage information at regular intervals (at least hourly) and collected at least daily.”
(Source Utilipoint, 2006)

### Capabilities

- Measure electricity, record consumption, and meter event information electronically
- Remote connection and disconnection
- Tamper detection
- Outage detection
- Quality of supply monitoring
- Demand limiting
- Communications interface to a range of devices like
  - in-property display
  - direct load control equipment
  - link to a computer in the premises
What is AMI?

Benefits

- Provide regular and accurate meter readings, eliminate estimated bills and provide flexible billing options;
- Reduce network non technical losses by decreasing the incidence of theft or fraud and vacant premise consumption;
- Improve the reliability of the overall electricity network;
- Reduce costs to generate and deliver electricity;
- Minimise barriers to competition in both generation and retail;
- Provide increased and relevant information to electricity users to assist in promoting the efficient use of electricity and enable consumers to make their own decisions on cost conservation;
- Contribute to the Government’s energy and conservation policy objectives;
- provide an increased accuracy in the settlement process, allowing retailers to optimize their contracted positions against consumer load
- Provide a platform for future energy-focused innovation
AMI System Landscape

Technical Processes by AMI Vendor products

- Home Area Network (HAN)
- Local Area Network (LAN)
- Wide Area Network (WAN)

Central

Coordination of installed AMI Systems
Upload of data to subsequent processes

Collaboration based on ESOA Services

- Meter Data Unification

Commercial Proc’s by SAP products

- Meter & Energy Data Repository
- Meter & Device Master Data
- CRM/CIS Data
- Service Provider Data
- EAM Data
- Intercompany Data Exchange
- Enterprise Asset Management
  • Service Mgmt

Enterprise Management & Business Support

NetWeaver

Enterprise Service Repository
### Define AMI Capabilities

#### Change View "Advanced Meter Capabilities": Overview

<table>
<thead>
<tr>
<th>Advanced Meter Capabilities</th>
<th>AMI Cap.</th>
<th>Txt AMI Capability</th>
<th>AMI3-Rel</th>
<th>AMCO-Rel</th>
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<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Remote disconnection</td>
<td>✔️</td>
<td>✔️</td>
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<tr>
<td>2</td>
<td>2</td>
<td>Remote reconnection</td>
<td>✔️</td>
<td>✔️</td>
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<tr>
<td>3</td>
<td>3</td>
<td>Remote meter reading</td>
<td>✔️</td>
<td>✔️</td>
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<tr>
<td>4</td>
<td>4</td>
<td>Manual meter reading</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>On-demand meter reading</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>Test entry</td>
<td>✔️</td>
<td>✔️</td>
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<tr>
<td>7</td>
<td>7</td>
<td>Annex AMI Capability</td>
<td>✔️</td>
<td>✔️</td>
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<tr>
<td>8</td>
<td>8</td>
<td>Annex second AMI Capability</td>
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<td>9</td>
<td>9</td>
<td>Test for BW</td>
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<tr>
<td>10</td>
<td>10</td>
<td>AT-Test 2008 capability</td>
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<tr>
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<td>AT-Test 2008 capability next generation</td>
<td>✔️</td>
<td>✔️</td>
</tr>
</tbody>
</table>
SAP AMI Enhancements

Assign the AMI Capabilities to the smart meter
SAP AMI Enhancements

Provide the ability to view the smart meters capability

IC-Webclient provides the ability to display the devices AMI capabilities.
SAP AMI Enhancements

Provide the ability to perform on-demand meter reads

The status of the on-demand button will change once the button is triggered and when the meter read is received.

Meter reading details will be updated when the read is received.
**SAP AMI Enhancements**

**Perform remote disconnection**

![Request disconnection interface](image)

<table>
<thead>
<tr>
<th>Selected</th>
<th>Disc. Status</th>
<th>Device</th>
<th>Smart Meter</th>
<th>Description</th>
<th>Request Rem...</th>
<th>In Other Disc. ...</th>
<th>In Other POD</th>
<th>Supply Guar...</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓</td>
<td></td>
<td>10019694</td>
<td></td>
<td>AMI meter</td>
<td></td>
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</tr>
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</table>

**Disconnection Document 784, Activity 0001**

- **Disconnection Doc:** 784
- **Reference Object:** Premise, 0000019640, 12 WALLSTREET, Walid
- **Disconnection date / time:** 16.10.2008 / 08.33
- **Notes:**

**Buttons:**
- Save
- Cancel
- Save and Disconnect Immediately

- **Relevant for Billing:**
- **Status:** Disconnection started
Provide the ability to view the customers interval usage

Provide the ability to display values and graph. In addition provide the ability to download values in a spreadsheet.
Questions?

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