

Meter Data Management

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Agenda



The Problem
The Solution
The Result
The Future



The Problem



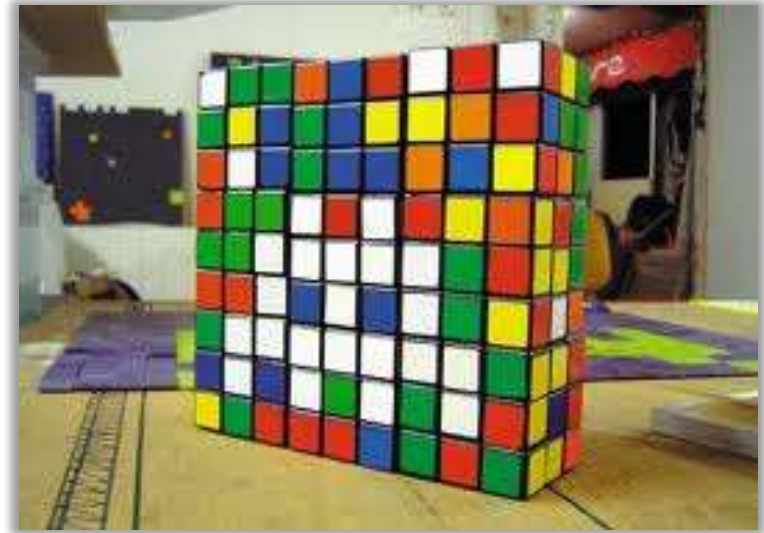
Before AMI

- 480,000
 - Data points per year



After AMI

- 480,000,000
 - Data points per year

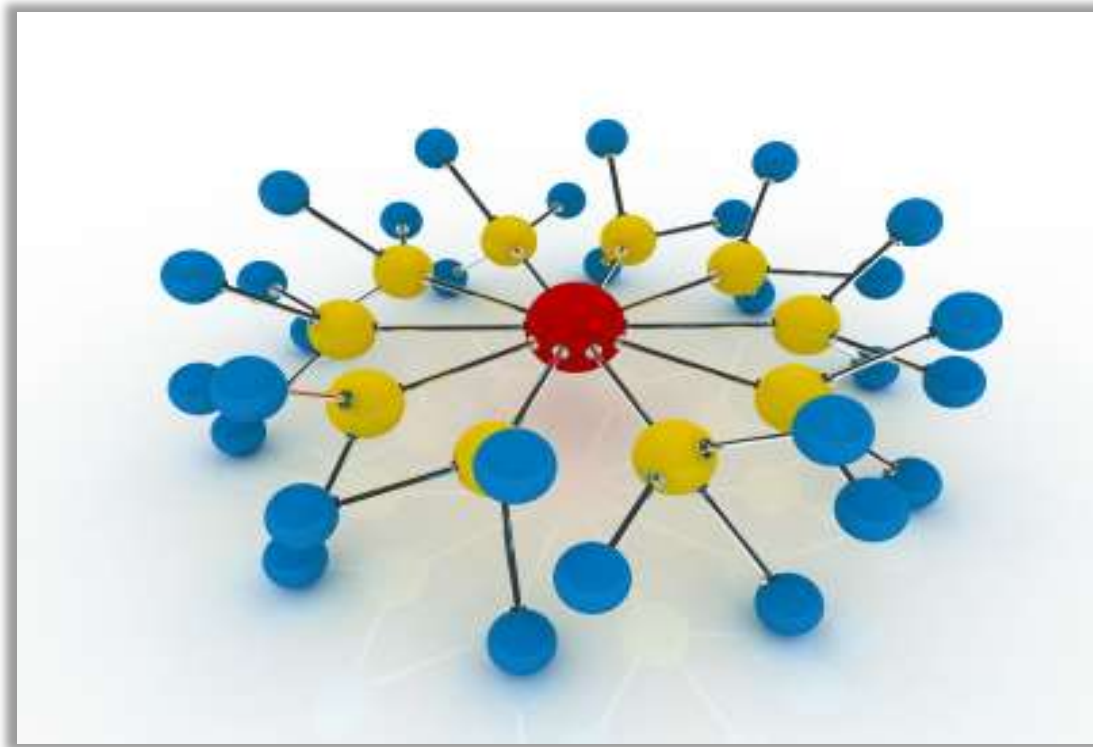


The Solution



Meter Data Management System

System that stores, analyzes, and shares meter data across the organization(s).

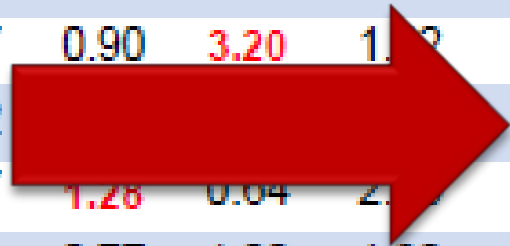


The Result



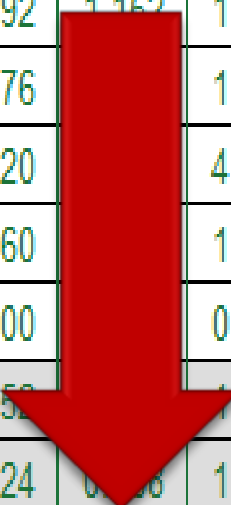
- Running Validation, Estimation and Editing
 - Validating 1,000,000 meter intervals per day
 - Missing Interval Example

<u>Date</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>
01/14/2011	0.64	1.02	0.77	0.77	0.64	0.90	0.64	1.92	3.20	1.92	0.77
01/15/2011	0.90	1.02	0.90	0.90	1.02	0.77	0.77	1.28	1.15	2.05	1.15
01/16/2011	1.02	0.77	0.90	0.90	1.28	0.77	0.90	3.20	1.92	0.77	1.28
01/17/2011	1.41	0.64	0.77	0.64	0.77	1.02				NA	2.30
01/18/2011	0.77	0.64	0.77	0.90	0.90	0.77	1.28	0.64	2.69	1.79	1.15
01/19/2011	1.41	0.77	0.77	0.77	0.77	1.28	0.77	1.02	1.92	1.92	2.05
01/20/2011	0.90	0.77	0.90	1.28	0.90	0.90	0.77	1.15	2.69	3.20	2.30
01/21/2011	1.54	1.28	1.02	1.15	1.28	1.02	1.02	1.66	2.69	5.50	1.54
01/22/2011	1.02	0.64	0.77	0.90	0.77	1.28	0.77	2.30	1.41	2.05	0.64
01/23/2011	1.41	0.90	0.90	0.90	0.90	0.90	1.28	3.58	1.28	0.90	0.90



The Result – MDM Example

Date ▲	Begin Read	● 1:00	● 2:00	● 3:00	● 4:00	● 5:00	● 6:00	● 7:00	● 8:00	● 9:00	● 10:00	● 11:00
01/10/11	25370	0.640	0.768	0.768	1.280	0.768	0.768	0.768	2.432	1.792	1.152	1.024
01/11/11	25404	1.408	0.768	0.768	0.768	0.768	0.640	0.768	2.048	2.176		1.152
01/12/11	25436	0.512	1.024	0.896	0.896	1.024	0.768	0.896	0.768	1.920		4.736
01/13/11	25492	1.792	0.896	0.896	0.896	1.280	1.024	0.896	1.152	2.560		1.024
01/14/11	25530	0.640	1.024	0.768	0.768	0.640	0.896	0.640	1.920	3.200		0.768
01/15/11 ●	25563	0.896	1.024	0.896	0.896	1.024	0.768	0.768	1.280	1.152		1.152
01/16/11	--	1.024	0.768	0.896	0.896	1.280	0.768	0.896	3.200	1.024	0.768	1.280
01/17/11 ●	25634	1.408	0.640	0.768	0.640	0.768	1.024	0.896	1.024	1.664	3.136	2.304
01/18/11	25674	0.768	0.640	0.768	0.896	0.896	0.768	1.280	0.640	2.048	1.792	1.152
01/19/11	25709	1.408	0.768	0.768	0.768	0.768	1.280	0.768	1.024	1.920	1.920	2.048
01/20/11	25743	0.896	0.768	0.896	1.280	0.896	0.896	0.768	1.152	2.688	3.200	2.304
01/21/11	25789	1.536	1.280	1.024	1.152	1.280	1.024	1.024	1.664	2.688	5.504	1.536
01/22/11	25836	1.024	0.640	0.768	0.896	0.768	1.280	0.768	2.304	1.408	2.048	0.640

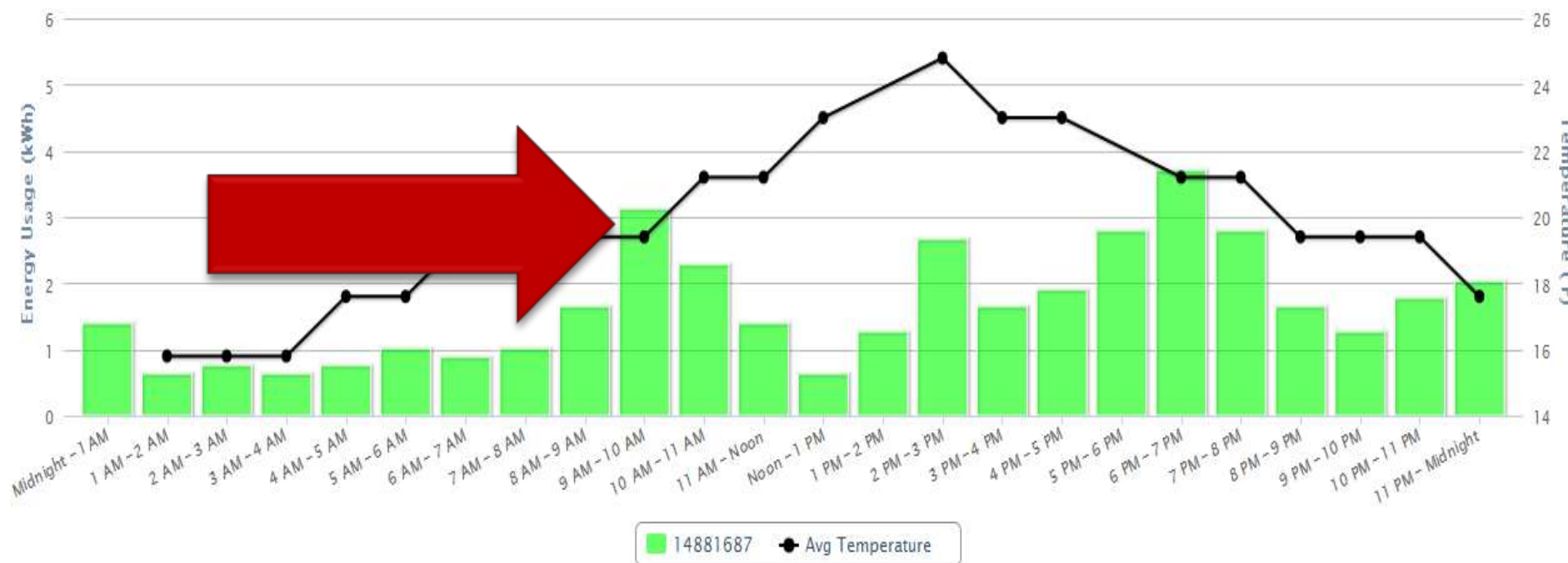


View your actual billed usage as a result of your household consumption.

Acct: 6528808

Monthly > Daily > Hourly

Energy Usage for Mon Jan 17, 2011



Billing	
Bill Date:	Feb 2011
Billing Days:	1/7/2011 to 2/8/2011

Usage	
Meter:	14881687
Peak Usage:	3.71

Weather	
Average Temperature:	20° F
High Temperature:	25° F
Low Temperature:	16° F

The Result

- Processing 1,000,000 intervals per day
 - 6 VEE Rules
 - Missing Interval Example
- Web Presentment
 - 900 views per month

ENERGY  check

Google powermeter

The Results – Web Survey

- How valuable is Google PowerMeter? **6.8 out of 10**
- Do either Google PowerMeter or Energy Check help you understand your electric usage? **82% Yes**
- Have you been able to decrease your electric usage using either Google PowerMeter and/or Energy Check? **26% Yes, 39% No, 35% Don't Know**
- Comments
 - The fact that MVEC is on the cutting edge of technology in providing its customers information that is not available with municipal utilities.
 - I am the envy of others who are with other electric companies!!
 - I love the idea, but it is clearly in its infancy. There is need for a refinement in the GUI and information provided. You need to be able to tie high usage events back to "why" so that the consumer can take action to change.(e.g. cold weather, high wind, etc.)

The Future

- Bill Presentment
- Blink Analysis
- Prepay
- Line-Loss Analysis
- Transformer Load Analysis
- Consumption Monitoring
- Load Management Control Verification
- Voltage Analysis
- Real-Time Engineering
- Demand Response 2.0
- Further Data Mining



Summary

- The Problem
 - Significant data increase
 - Business need to utilize data
- The Solution
 - Meter Data Management System
- The Result
 - Solid data foundation
 - Presenting data to membership
- The Future
 - Build off strong data foundation



Thank You



● Questions?

