# Leveraging the Web for Customer Engagement*

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Utilities have long used web portals for electronic billing and simple service work. As the sophistication of customers has grown, some utilities have leveraged their corporate web page to provide energy efficiency and helpful hints. However, the introduction of the data collected with Smart Meter/Advanced Metering Infrastructure (AMI) systems provides a significant opportunity as well as a challenge for utilities. The utility can present customer-focused web portals that create an entirely new experience and leverage the detailed customer usage information to drive additional services and expanded customer engagement. However, few utilities are prepared to do so. Utilities have traditionally used data presentment capabilities of a Meter Data Management System (MDMS) or specialized data presentment package to provide customer's usage data. This article provides a new perspective to help utilities rethink their customer portal plans based on market developments and customer needs.

## LEVERAGING THE INTERNET FOR SMART METERING PROJECTS

With the advent of the AMI solutions, the amount of information that utilities have on their customers, and the quantity and quality of information that can be provided to these consumers, has exploded. Early in the smart meter marketplace lifecycle, industry pundits predicted that the manner in which utilities would leverage the Internet to engage their customers would change – but has it? With the exception of some high-visibility utility success stories, most utilities have fallen short of expectations.

Utilities have included the presentment of usage information as part of their core requirement set of their smart meter project. Given that the source data for this information was the MDMS, which consolidates and stores data gathered by the AMI system, utilities looked initially to these solution providers for the customer web presentment capability. While a significant percentage of the utility's consumers may visit the utility's website to look at the newly available explosion of data, the greater question is what has and will keep them coming back. One thing that is pretty certain – it is not kWh usage data presentment.

## A CONSUMER FOCUS

Generally, consumers are not interested in their monthly, daily or hourly kWh – if they even understand what a kWh is. Although the utility bills the customer based on kWh consumed – or therms of gas or cubic feet of water – the customer is actually purchasing the utility of the commodity (i.e. the satisfaction obtained by the use of energy rather than the act of using it). It is the ability to light a home, cook a gourmet meal, take a hot shower, watch the latest DVD on their state of the art HDTV, launder clothes, or sit in the hot tub drinking a glass of Bootleg Cabernet that the consumer is purchasing. Seen from this perspective, the act of providing base kWh usage data doesn't make much sense.

Rather than focus on the mere presentment of kWh usage data, the utility should examine this opportunity from the customer perspective. What do customers want…?

- Cost — Customers are concerned about their bill. And more importantly, customers will modify their usage behavior when presented with information on how their consumption translates into cost. Utilities should present dollars instead of

*Published in the May/June 2010 issue of Electric Light and Power Magazine

engineering elements. How much money did the consumer spend on electricity? There is some concern that these component values will not exactly match the eventual monthly bills due to taxation, rate effect, etc.; but the customer value of the information exceeds this concern.

- Carbon Footprint — For a growing segment of the population, translating the electric energy consumption into carbon greenhouse gas emissions allows the concerned customer to understand the impact of their personal energy consumption. And as the customer modifies their energy use, they can visually understand the environmental benefit.
- Comparative Information — An important question for most consumers is – "how am I doing relative to …." In isolation, the individual consumer can only compare their usage against themselves over time. Real value arises when they can understand how they compare against others. While needing to ensure individual customer information privacy, the utility can aggregate average data based on house size (obtainable from publicly available property data), appliance and usage qualifiers (consumer provided), zip code or census tract data, or similar.
- Historical Data — Some consumers will want to be able to perform their own analysis on their energy usage data. While it is reasonable that there is a limit to what is stored on-line, a method of access to a greater amount of historical data must be provided.
- Rate Analysis — With the anticipated proliferation of advances rates such as Time-of-Use (TOU), Critical Peak Pricing (CPP), Peak-time Rebate (PTR), or Real Time Pricing (RTP); consumers need guidance the impact of these rate programs. The ability to leverage the hourly or better interval data to analyze current bill impact of new rates as well as what-if scenario planning based on changes in customer behavior provides a powerful and reliable basis for predicting customer impact. This reduces customer fear of uncertainly and should lead to higher acceptance rates of voluntary programs.
- Alerts — Consumers could establish custom alerts to inform them via email or SMS that a preconfigured $, GHG or usage threshold has or will be exceeded.
- Conservation Suggestions — While utilities have provided conservation guidance via general information or consumer-initiated analysis and reports, the availability of the interval-based usage data enables a more robust energy consumption analysis and resulting recommendations on conservation opportunities. Additionally, once the change is made, the customer can use their data to understand the actual impact.
- Web Communities — Leveraging the explosive acceptance of user generated content and social media, utilities can provide a mechanism for consumers to rate or recommend conservation methods, similar to TripAdvisor or similar sites. Social media can be used to alert consumers to new information, web capabilities or service offerings.
- Support for Home Area Network (HAN) or Demand Response (DR) program engagement — This would include enrollment, device provisioning and ongoing support and engagement.
- Support for Distributed Generation or Renewable Options — Solar and wind are becoming increasingly attractive alternatives as energy costs escalate and the equipment costs decline. Favorable tax treatments and utility/government financing or rebates are also stimulating interest. Utilities could provide tools that take into account all of the appropriate design metrics while leveraging the customer's actual usage data to estimate required size, payback period, etc. This web engagement could springboard to solution provider references, financing solutions, government rebate information, and utility rate options.

The above represents an incomplete list of solutions envisioned. But just as importantly, what will be the solution sets that arise in the future that cannot be imagined today? How will the utility's web engagement strategy and architecture support the current solution requirements as well as provide the innovation and flexibility to offer future services? Equally important, how will the utility's vendors/partners support this solution structure and architecture?

## THE MDMS ROLE

The web portal engagement opportunities described above are fundamentally focused on the manipulation and presentment of information to engage customers in how their lifestyles impact their electric, gas or water usage. While the analytics behind this effort are similar to those that form the basis of MDMS solutions, the focus is entirely different than traditional MDMS requirements surrounding the management of metering data and the creation of billing determinants. While MDMS solutions have expanded to provide management of the wide variation of available metering information including voltage and power quality information, tamper alarms, meter diagnostics, DR or conservation measurement and verification, etc. — and support for new services such as connect/disconnect — they remain fundamentally focused on internal utility operations.

The term MDMS itself is becoming somewhat of a limiting descriptive for the solutions being provided by MDMS platforms. A better descriptor might be Operational Data Management Systems or Operational Information Systems. While the MDMS label will likely remain in the near-term, the operational focus is certainly destined to grow as utilities look to extract more Smart Grid related value out of their smart meter systems. The introduction of enterprise solutions and applications such as volt/var optimization, feeder monitoring, faulted circuit indicators, and transformer monitoring will require utilities to refine their strategies to manage many more types of devices, provide additional analytics and interface with additional utility operations systems. As more utilities implement Distribution Management Systems (DMS), the role of the MDMS in brokering data will evolve as the DMS requires much different latency than traditional MDMS solutions provide.

In the context of this expanding and evolving operational focus, a valid question is whether the MDMS providers can or should also provide a full suite of customer focused solutions. The answer is a resounding "maybe, it depends, perhaps not," … The determinant will be to what extent the MDMS vendor can or wants to focus their efforts on these very different solution segments: utility operations and customer engagement. And this fractured focus extends beyond mere resource assignment but to solution architecture. Architecture considerations for customer focused solutions include:

- An enterprise web architecture is different than the traditional MDMS solution architecture.
- Security requirements and measures for web portals that extend outside the utility data center DMZ to millions of customers are different than those for internal access-managed applications.
- MDMS solutions typically do not maintain or manage dollars – this is the purview of Customer Information Systems.
- Web strategies that focus more on presenting information that is meaningful to customers will find themselves combining information from many sources, not just presenting data from the MDMS.

Given that creating truly engaging web portals is both an art and science of its own, using the MDMS for both internal and external utility focus is not optimum.

## PRIMED FOR SUCCESS

Based on this complex and evolving information and customer environment, it is recommended that utilities look at procuring the solutions described in this article in the following fashion:

- MDMS — Utilities should continue to procure the MDMS as operational solutions, as has become common practice. Core adapter and operations application requirements are well defined and there are a sufficient number of suppliers to provide utilities with competitive choice.
- Web Engagement — Treat as a separate set of requirements that can be sourced independently of the MDMS. An MDMS vendor may offer this as add-on functionality, but the use of a single system is less important than in the past where the focus was to just provide consumption data resident in the MDMS. The design, look and feel, and focus of customer-facing solutions will mirror those found in the eCommerce space, not those used internal to the utility.

Focusing on the procurement of individual solutions that meet near and long-term utility requirements will ensure smart meter program success from both the utility and the end-use consumer's perspectives. As the marketing matures, new solutions emerge, consumer expectations increase and regulatory mandates change, utilities must be flexible in their application of technology to their smart grid projects. The natural evolution of data that was initially used only for billing to information valuable by consumers to manage their utility bills requires such a change.


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