Deploying an Advanced Metering Infrastructure (AMI) System

If you are like most municipalities around the country that run their own utilities, you are either considering installing an AMI system or have already begun doing so. If you are considering an AMI system, the following white paper may be useful in summarizing the maturity of the market, the benefits of AMI and considerations of deployments. It is our hope that this simple framework can help you facilitate conversations with all stakeholders within your municipality.

Are You Concerned About Deploying AMI?

AMI is a proven technology which is being rapidly adopted. In 2008 alone, 25 million meters went under contract. (Source: Chartwell Smart Grid Research Series). Honeywell has seen significant adoption of smart meters. Over the last five years Honeywell has installed over 11 million water, gas and electric meters for our customers.

AMI Deployments:
- 70% of utilities exploring or have implemented
- 21 million endpoints implemented

What is the Financial and Operational Business Case?

AMI Benefits for Customers:

Enhances Customer Engagement — Having more data available allows a utility’s Customer Service Representatives (CSRs) to more efficiently handle calls — whether it be a billing question or service question as it relates to outages, disconnects or reconnects. In today’s world of having vast amounts of information being gathered and stored, a properly designed AMI system will put all that information at the CSR’s fingertips. The information will enable your CSR to be more responsive to customers’ questions about their usage — i.e., researching a higher than usual bill to instantly pinpoint days of large water usage, indicating that perhaps someone filled up their swimming pool that day.

Improves Outage Management and Response — If your electric utility is involved in the endpoint replacement, outage control management and detection can be implemented to facilitate quicker isolation of downed power lines, resulting in faster repairs, and the ability of the CSR to more quickly and efficiently tell the customers when power will be restored.

Provides Remote Connect/Disconnect Capability — An AMI system allows for high turn-off/turn-on areas to be outfitted with remote connect/disconnect features, resulting in more timely service as well as operational efficiencies.

Improves Accurate Billing — Having the read data stored and profiled makes checking billing easy; the fact that the read data is being transmitted through a series of “collectors” and back-hauled straight to the utility leaves no room for human reading error, resulting in more accurate billing. Should a question or dispute arise, researching the usage patterns is easy for the CSR.

Enables Energy Load Profiling Data — Load profiling can enable analysis to be done on the existing usage patterns of your customers to assess and inform the customer of the impacts of various peak/off peak prices and different Time of Use (TOU) rates would have on their utility bill, enabling them to pick the rate plan that best suits their lifestyle.

Allows for Automated Leak Detection — This would enable the ability to tell if a customer has a leak and proactively notify the customer that their usage pattern is indicating a potential leak in their system.
AMI Benefits for Operations:
Improves Revenue Assurance, Protection, and Validation Editing and Estimation (VEE) – By implementing an AMI infrastructure, Meter Data Management Systems can be added to do revenue assurance, protection and VEE, as well as utilizing all the data coming in for other functionalities such as load profiling, TOU rates, residential and commercial demand response.

Enhances Workforce Optimization – Having the reads transmitted electronically frees up the workforce to perform more value-added services.

Enables Demand Response and Load Control – A good AMI system lays the foundation for optimizing existing power production or availability. By incentivizing customers to use electricity off-peak, it can mitigate the need to build more power plants, or if there is a purchase agreement in place, can mitigate the need to purchase power during critical peak periods.

Enables TOU Pricing – A good AMI foundation makes implementing different TOU rates more straightforward to implement.

Provides Asset Monitoring and Decision Support – If desired, a good AMI head end can serve to monitor all assets including installed endpoints, inventoried endpoints and residential DR components.

Facilitates Distribution Automation – A good AMI system becomes a foundational layer that can work hand-in-hand with a robust distribution automation system which can serve to decrease truck rolls, stabilize voltage, isolate outages and help to more accurately assess the transformer and distribution feeder loading, possibly deferring costly equipment upgrades.

Piecemeal or Mass Deployment?

Benefits of System-Wide Deployments:
Any AMI deployment is essentially changing the business process that a municipality-owned utility has developed over many years — business processes that may have been in place for almost 100 years. Converting to an AMI system and changing the business process is manageable, but a change one would want to make as seamlessly and quickly as possible. Honeywell provides a system of professional, solid change management that guides your staff to a more efficient business process. Our project professionals will help streamline the process, from design, to implementation, to service after the install.

The benefit Honeywell provides is minimizing the pain and inefficiencies commonly associated with large business process changes. By doing an accelerated system-wide deployment, we minimize the transition time while providing the training necessary so that your staff embraces and utilizes the new system to maximize the benefits.

Self-Managed (Bid/Award) or Facilitated Deployment?

Why Utilize Honeywell?
Experience – Honeywell has been through dozens of these deployments, including many for utilities that manage multiple systems, including water, gas and electric utilities.

Personnel – Honeywell has the program management experience to fast track the job and manage the conversion of your business processes.

Relationships – Honeywell will work with you to select and assemble the best OEM’s needed to provide the functionality desired by your municipality and utility. Through our experience, we know that every municipality is unique. We are vendor-neutral and have the in-house expertise to lead your department heads to technology decisions that benefit both their departments and your municipality as a whole, while concurrently mitigating any risks associated with an OEM that might be having product issues or other associated risks with a deployment of this nature.

References – Our experiences ranges from big utilities such as Florida Power & Light (FP&L); to mid-size utilities, such as the City of Tallahassee; to small cities in the heartland. Honeywell has successfully guided these utilities to the correct and appropriate solutions to expedite achievement of the goals of each municipality.