

# Managing the Advanced Metering Lifecycle\*

By David Elve, Vice President and Principal Consultant, Enspira Solutions, Inc.

A number of utility advanced metering infrastructure (AMI) initiatives are in various phases of evaluation, vendor selection, deployment and management. Like most aspects of the business, AMI systems have their own lifecycles. The AmI lifecycle has the following stages:

- Strategy;
- Business and rate case development;
- Procurement process (RFI/RFPs, Pilots, Phases);
- Contract;
- Deployment:
  - PMO established,
  - Change management, and
  - Vendor management office (VMO);
- Innovation: benefits realization, technology reviews; and
- Renewal, refresh.

## STRATEGY

The AMI lifecycle begins with an alignment of corporate strategy. There is considerable focus in the industry on AMI today — more than has been seen since the deregulation missteps of the late '90s and early 2000.

Today, not only can AMI provide operational cost savings and the customer service benefits that have been in the business case for years, AMI also has the ability to facilitate demand response and demand-side management programs. This development, in line with the desire (and, in some cases, the mandate) to curb additional generation investments, confirms that AMI is a realistic and economic solution — causing it to consistently make the agenda in the boardroom.

The AMI dialog with the regulator has become more of a pull activity vs. a push activity. Utilities once “pushed” the rationale for AMI and business case to the regulator; now, the regulator is as likely to ask for it, or “pull” information from the utility. AMI now elicits a more proactive discussion between utilities and their regulators, and utilities are spending considerable effort in developing or updating AMI, many times as part of an overall smart grid strategy.

Developing basic AMI strategic values and drivers still varies by utility, but they are normally crafted around the following:

- **Least cost substitution:** Utilities looking primarily at metering reading cost savings through some form of automated meter reading systems.
- **Operational benefits beyond meter reading:** Utilities looking beyond least cost substitution into additional benefits derived from areas such as distribution engineering and outage management.
- **Strategic benefits:** Utilities looking at “smart grid” type benefits, such as hourly data as well as to enable services such as demand response, load control and overall energy management.

## BUSINESS AND RATE CASE DEVELOPMENT

Based on the corporate drivers and the corresponding AMI strategy, the next phase in the AMI lifecycle is typically business and rate case analysis and development. Business planning and rate case analysis starts with an assessment of the benefits associated with implementing AMI, utilizes the benefits to



\*Published in June 2008 issue of Utility Automation & Engineering T&D.

define requirements and objectives, and concludes with a technology evaluation at a high level along with the initial system plans. A clear linkage between the benefits AMI can achieve and the solution selected to facilitate AMI is critical to ensuring regulatory acceptance.

Every business case has differing drivers, economics and geographies. Matching AMI processes and technology to your business case is essential to gain the most from your investments.

## PROCUREMENT PROCESS

The AMI procurement process starts with the RFI/RFP stage and can include pilots and phases leading to vendor negotiations and eventually a contract. During this process, vendors should be asked to discuss implementation, deployment, and integration plans along with benefits realization and risk management plans, which can be used as the basis to establish the contract framework and the post-contract “program management office” (PMO).

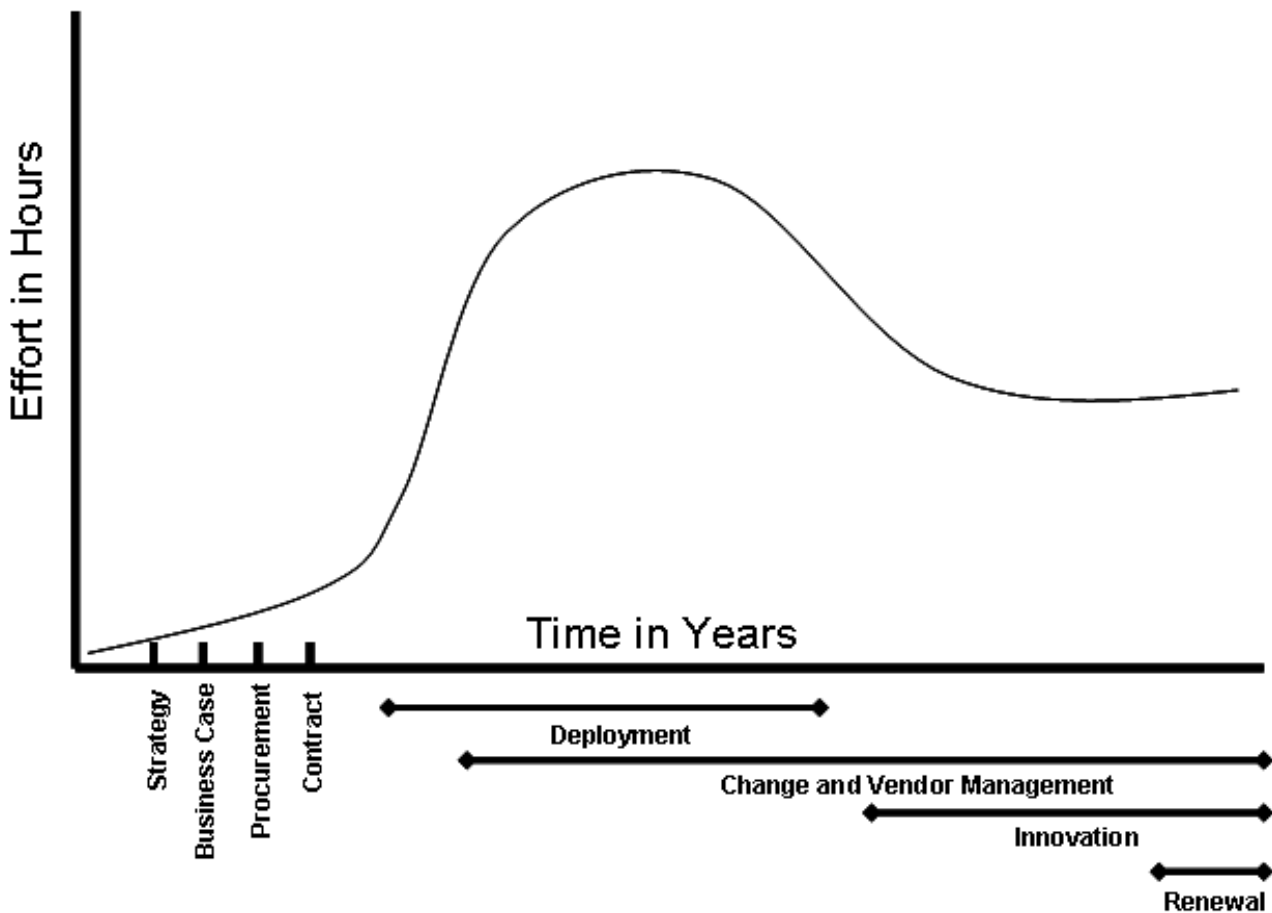


Figure 1. Typical AMI lifecycle and effort involved over time

## CONTRACT

The contract is many times a period of transition. The AMI team may be totally dissolved and the team members returned to their day jobs. In some instances, some of the players will be moved into the PMO; however, many will be transferred, promoted or retire (or become consultants).

If the early stages of the lifecycle — including requirements development and the RFI/RFP rigor — are well managed, the contract should already be well-scoped and relatively easy to negotiate. The best negotiations can last three months and the worst can lead to re-bids, which can start the lifecycle over again.

Besides price, the key aspect of contract negotiation is risk mitigation. The main elements of risk are financial, technical and performance. Within the constructs of the deal, incentives and penalties should be developed to drive the behavior of both the vendor and the utility. The ongoing relationship will be managed under the “vendor management” concept, discussed later in this article.

## DEPLOYMENT

Deployment is the period of expensive ramp-up in the lifecycle when money will begin to flow and effort expended in earnest by both the vendor and the utility. The deployment period must include the following:

**PMO establishment:** Every contract has a provision for the PMO. Deals vary on the make-up of the PMO but, nonetheless, there should be oversight by the utility into the PMO if not actual employee participation. A high-profile, highly qualified person should be assigned to the role of program or project manager on the utility’s behalf. This is often not the case; often the person assigned to this role has skills sets

that are different than those required to run a project of this scale. Skill sets of a good project manager include organizational, technical and business skills. Well-established, high-level contacts within the utility and the vendor are a real advantage.

**Change management:** Change management is an area that is typically under-budgeted, even though an AMI solution is designed to be an agent for change in the utility. An AMI deployment affects numerous processes and departments. At a minimum, the entire meter to cash process will have drastic changes, and dramatic changes will occur in the customer contact area. Applications such as outage management systems, geographic information systems, workforce management systems, customer information systems and customer relationship management can all be used to leverage additional information in the system. Teaching users to best leverage this information can be critical to making the business case — and ensure additional investment in the system over the lifecycle.

**Vendor management:** Best practice calls for the establishment of a “vendor management office” or VMO. This term should be familiar to many utilities that already utilize IT outsourcing (TO) or business process outsourcing (BPO) contracts. AMI contracts run from 15 to 20 years, doubling the normal duration of ITO and BPO contracts, so these are long-term relationships. Firms which employ ITO and BPO contracts actively manage the lifecycle of their deals with vendors, ensuring that service level agreements (SLAs) and quality of service are maintained. AMI contracts should be maintained in the same vein. ITO and BPO clients have been consistently advised to budget about 3 percent to 5 percent of the annual services values of the contract to actively managing the contract. You could view



this activity as an insurance policy or a maintenance contract to ensure vendor performance and, consequently, your AMI solution. These best-practice activities include managed vendor (balanced) scorecards and third-party participation and oversight as well as defined escalation clauses within dispute resolution.

Change management and vendor management programs are not always specifically spelled out in the agreement. A trend is developing to add these facets as part of both quality assurance and risk management planning.

## INNOVATION

Innovation can drive customer satisfaction from the utility perspective, add value to the business case and guard against system obsolescence, potentially extending the life of the AMI asset.

At Enspira, we have benchmark data that shows the average benefit of AMI amounts to \$2.16/residential meter endpoint at steady state. The purpose of innovation is to grow the value of AMI data from the current \$2.16 to \$2.26, then \$2.44 and hopefully beyond. Innovation is derived from or enabled by process change, new applications, firmware upgrades and integration.

Some of the early utility adopters of AMI/AMR systems have already leveraged meter data in both new and currently used applications. A few examples of utilities creating additional value for their networks include:

- Ameren — transformer load management
- Exelon — outage management
- United Illuminating — work management system

Pumping real-time or near real-time meter data into these systems provides for additional business benefit and takes the utility one step closer to a smarter and more efficient grid.

Innovation, however, still tends to be underfunded in the AMI lifecycle. Surveys from clients with long-term contracts have shown that lack of innovation has always led the list of complaints with these deals.

To foster innovation, the utility and its vendor partners should clearly articulate an innovation communication calendar and channels that stretch over the AMI project's life. As processes evolve and technologies advance, the AMI systems should be reviewed and, perhaps, re-tuned to take advantage of these advances

Innovation clauses can be established in ITO and BPO contracts to guard against obsolescence. One approach is to schedule regular innovation workshops. In ITO and BPO deals, these are led by third-party subject matter experts. Clients should budget annually for these activities. Jointly budgeting this activity with the vendor can put innovation on both bonus scorecards.

Within the innovation workshops, technology refresh initiatives have the opportunity to surface. Cases do exist where a customer has decided to upgrade to the latest and greatest technology (in most cases, from a one-way to two-way architecture) with its existing vendor. Benefits realization exercises should be also conducted as part of the regular innovation activities.

Budgets for innovation should include regular workshops as well as seed money to build the business case and the appropriate models or pilots. The business case should demonstrate



the appropriate ROI as required. Systems integration and process engineering will most likely be the focus of these activities, but there may be new applications which have recently come to market which could enhance the data. Certainly, as an example, meter data management systems are continuously being enhanced and growing in scope to manage not only meter and asset data but also demand response systems.

To ensure all technologies are considered and that the workshops are not dominated by either the vendor or the customer, a third-party moderator with the appropriate industry and technical expertise should participate.

## CONTRACT RENEWAL

For the vendor, contract renewal is the ultimate complement to be paid by the client and makes for great PR in the market. Paying attention to each stage of the AMI lifecycle should not only increase customer satisfaction for the vendor but also increase the chances that the client will renew. This process has the potential to create a true vendor/utility partnership.

For the utility, actively managing AMI over the entire lifecycle, which can range up to 20 years, is essential to achieve and even exceed the business case and stakeholder expectations. Maintaining a relationship with the same vendor causes less disruption and cost than changing to a new, untested partner. That being said, strategy, technology and the underlying business case may change — change which your existing vendor cannot address and which may require a change in vendor.

Contract renewals, as mentioned previously, can start with technology refresh. This is an opportunity to renew the relationship while gaining some additional features and

functionality — and perhaps a lower price. As an example, several Cellnet customers have been upgrading the older Cellnet technology to the UtiliNet two-way AMI systems. Some Itron customers are moving from drive-by AMR to fixed network.

As in many ITO contracts, a trend we could see soon is for vendors to actually be required to go through pricing and service level agreement benchmarks to ensure that utilities are getting market-based pricing and SLAs. Another opportunity to renew or renegotiate the contract could be the recapitalization of the contract. One of the very first fixed network AMR systems, which was a fully managed service contract, was restructured to add some of the capital cost back in the rate base.

The incumbents of major outsourcing and procurement deals in any industry can be hard to displace when the contract comes up for renewal. For the vendor, the old adage still holds true that it is cheaper to hold on to a customer than to acquire a new one. For the utility — where risk mitigation is key — if the current vendor is getting the job done, there will be less incentive to change. Therefore, actively managing the AMI lifecycle should increase the renewal rates of AMI deals which should be advantageous for both the vendor and the customer.

## KEY TAKEAWAYS

- View your impending AMI investment in a lifecycle mindset. Actively manage each stage over the life of the deal.
- Plan to spend some real money managing the lifecycle, even if you have a fully outsourced model.



- Make certain you have right personnel with the skill sets to manage the deal. Leverage expertise used in other outsourced contracts both inside and outside your company.
- Plan for regular, periodic innovation of your system.
- Use third-party expertise to not only build the business case and RFP but also to assist the management of subsequent lifecycle aspects.



***About the author***

David Elve is a vice president and a principal consultant with Enspira Solutions, Inc. His experience encompasses a range of utility-focused enabling technologies and processes, with particular expertise in automated metering infrastructure and meter data management.