

Managed Business Services for Smart Metering

**Add Value Faster by Removing the Complexity of
Managing Multiple Vendors**

Introduction

High costs, rapidly changing technologies, and shifting energy market dynamics continue to impact Smart Meter programs and challenge conventional business models used by utilities to implement and manage these programs. Traditional accounting and regulatory rules that govern these programs have limited the commercial and delivery options available to utilities, constraining their ability to fully optimize quality of service, costs and benefits. The typical capital centric governance models used for these programs, whereby the utility acts as the commercial and delivery principal managing multiple vendor agents, results in sub optimal quality of service, inflated costs to ratepayers and lengthened timelines for implementations. These inefficiencies in achieving a program's goals and the limited capacity for a utility to manage effectively under these conditions reflect the classical economic model of Principal-Agent problem.

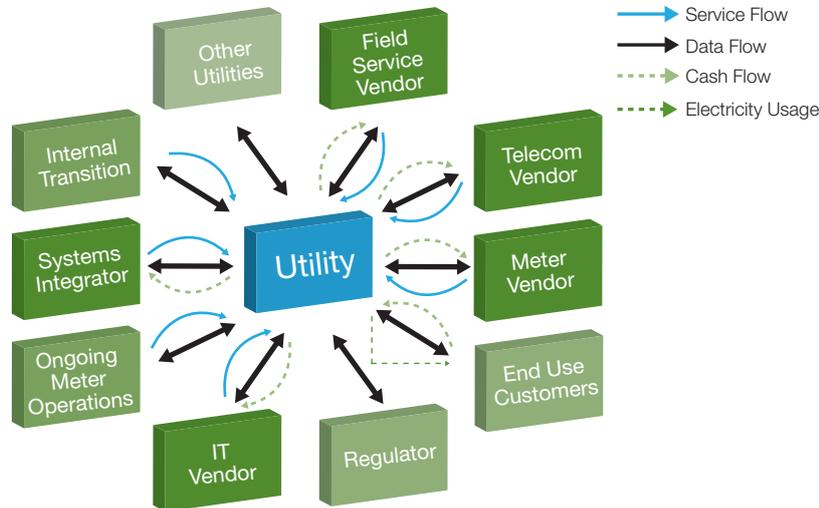
Standard Principal-Agent theory states that a Principal will hire one or more Agents to achieve an outcome that it either can't achieve on its own or can't maximize without support from Agents. The challenge with operating under this model is that the self interests of all parties are never fully aligned and a Principal never has full visibility into an Agent's self interests, creating a condition of asymmetric information. In order to align Agent interests to its goals and optimize performance, a Principal must develop incentive mechanisms that will influence Agent behavior.

Utilities apply classic economic incentive mechanisms to smart meter programs to influence vendor and supplier behaviors. These include a number of positive and negative incentives such as performance bonuses, milestone incentives, rate cards, bonds, and termination conditions. The challenge lies in attempting to align and manage these incentives across a network of vendors and suppliers and remove the asymmetric information issue. The significant size and complexity of these programs have forced utilities to shift attention away from their core competency of electricity delivery to managing legal and commercial frameworks needed to align incentives. Today, it is commonplace for a utility to have a dedicated full time commercial team assigned to a smart meter program.

A Managed Business Service approach to smart metering is an option that improves the Principal-Agent problem for a utility. It shifts the burden of managing inherent asymmetric information conditions across multiple vendors to a single primary service provider, allowing the utility to refocus on its core competency of delivering electricity. Outcomes are optimized by reducing multi vendor complexity to a single contract between the utility and primary service provider that is directly based on overall business performance and objectives. Managing multiple vendors and suppliers is the responsibility of the service provider, which has expertise and experience with this model.



Figure 1 : Traditional AMI Program Delivery



What Is MBS?

Large scale smart meter programs and their subsequent support operations require a complex network of stakeholders to implement and manage. The traditional hierarchical commercial and delivery models employed by utilities to govern these programs carry structural risks that prioritize efforts on cost, stakeholder and schedule management. Although these programs represent fundamental business transformations to a utility, the resulting principal agent relationships applied to these complex programs do not inherently maximize service and value creation, nor do they align the rational choices of the agents (Vendors) to the key principal (The Utility).

A smart meter managed business service transforms a utility's meter to cash lifecycle into a series of services measured against business based goals. A utility can focus on service and value creation through a shared governance

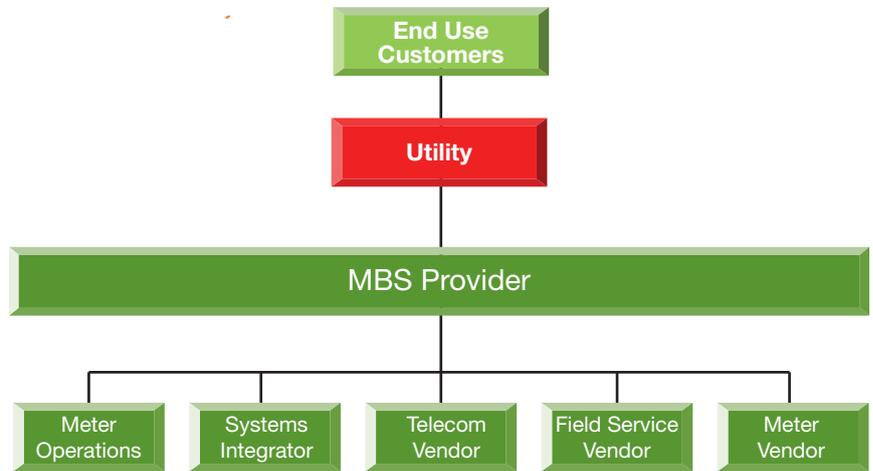
model that shifts and shares risks with a service partner. Costs become predictable through unit based pricing models over fixed contract periods. The service provider is responsible for sourcing, installing, operating and refreshing the smart meter infrastructure and systems, thereby minimizing upfront investments and technology risks to the utility.

On average, an end to end smart meter program can require five to ten vendors covering various services and products including meter operations, systems integration, telecommunications, field services, and meter infrastructure. Under this scenario an experienced service provider has clear advantages over a utility. The service provider will have long term relationships with vendors across multiple smart meter and utility programs in various geographies. This experience, intimacy and ability to re-use common work products and processes across programs results in superior program and operational performance.





Figure 2 : The MBS Governance Model

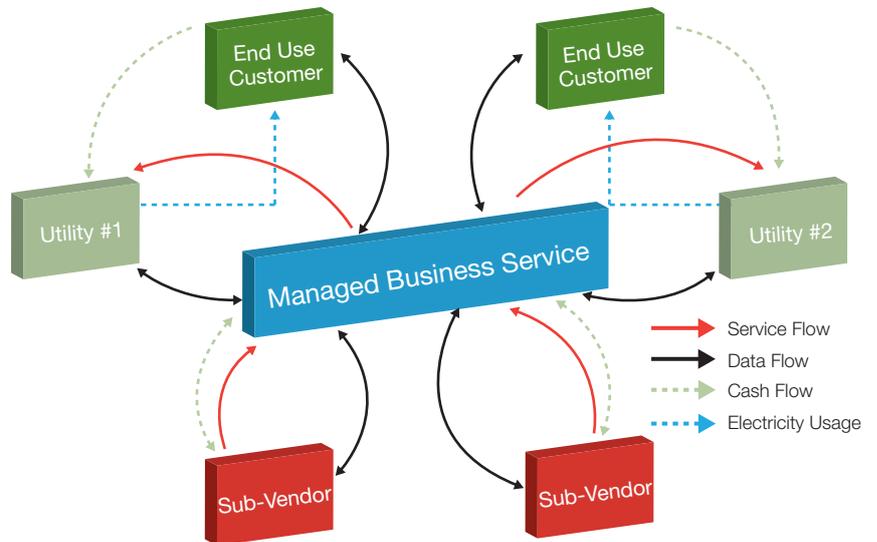


Services can be defined as discreet transactions, allowing the utility to enable them as needed. This flexibility provides better alignment to long term smart meter, smart grid and customer service strategies. The utility only needs to invest in necessary services needed at any point in time.

The most effective managed business service models mutualize or share

common processes, technologies and operating models across utilities through a shared service model. Mutualization results in lower service costs, alignment to industry standards, and standardization of technologies & processes. This benefit is particularly important to small and mid-sized utilities that face challenges in launching smart meter programs because of the significant upfront fixed cost requirements.

Figure 3 : The MBS Delivery Approach



Additional Benefits of an MBS

A MBS approach can improve the value of a smart meter business case by better linking a program’s costs to its business benefits. A utility and service provider will share the commercial and delivery risks through a common single set of business based service requirements. For a utility, the result is a tight coupling of its service provider to program objectives and results that would otherwise be a challenge to achieve.

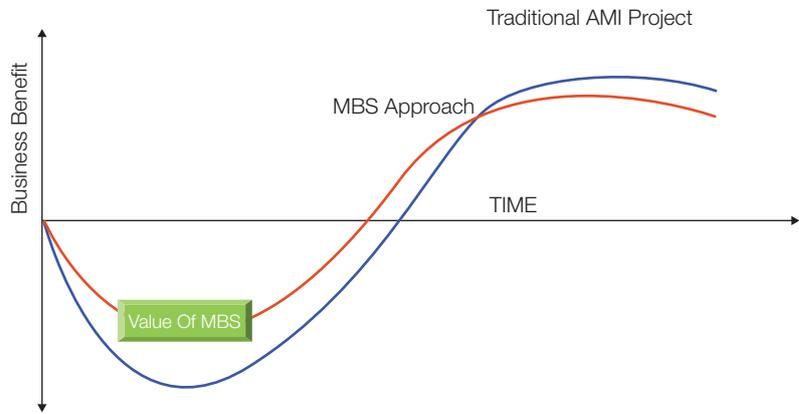
For example, some of the most common objectives for smart meter

programs include improved energy conservation and efficiency, improved customer service, reduced operating costs, and improved revenue protection. Each of these objectives is measured differently by different vendors. Having single common view of these objectives has a major impact on the successful outcome of a program.

In addition to the direct benefits outlined in the Principal-Agent model, a smart meter managed business service model can:

Benefit	Detail
Increase speed to value	Mutualization of common tools, technologies, processes and operational functions
Acquire and retain industry leading experience and expertise	Industry demand for experienced resources is growing faster than the available resource base. A utility’s ability to attract and retain employees is a significant and real challenge.
Increase purchasing power by leveraging economies of scale	Economies of scale gained through multiple utilities sharing common service platforms improves purchasing power and makes available cheaper asset prices not typically available to smaller utilities.
Improve flexibility for the introduction of future state or enhanced services	Utilities can refocus on their core competency with more attention focused on innovation. A MBS can influence technology roadmaps and future state functionality of products and equipment.

Figure 4 : Traditional vs. MBS Benefits



Risk Mitigation

Utilities that self manage the implementation and operation of smart meter programs ultimately incur the sole burden of managing and mitigating relevant delivery and commercial risks. Traditional governance models used for smart meter programs are hierarchical, placing final responsibility on a utility, not the prime contractor.

A managed business service provides utilities with an opportunity to share risks with a service provider under a more balanced governance model that shares responsibilities across both parties. The utility and its service provider assume equal responsibilities to manage and mitigate delivery, commercial and strategic risks.

Under a managed business service model, a utility gains a number of delivery, commercial and strategic risk mitigation elements. Key risk mitigation factors include:

Delivery

- Experienced people and access to difficult to find experience
- Standardized and proven solutions, architectures, support operations and business processes

- Support provided by an established network of technology and equipment suppliers

Commercial

- Business based service measures linked to business outcomes with risk/reward mechanisms
- Cost certainty through predictable pricing models
- Simplified commercial environment with a single prime contractor

Strategic

- Technology currency
- Alignment to regulatory and legislative changes
- Relevancy to global industry business methods

Applying traditional delivery and commercial approaches to large scale smart meter programs result in inflated costs and a limited ability to make mid stream changes once a program is underway. Utilities are forced to spend long lead times in planning programs before an actual kick off, and build multiple layers of time, resource and cost contingencies into their programs. A managed business service approach provides a more flexible structure where ideas can be tested and replaced with much lower investments of time, resources or money.



Conclusion

As stated earlier the MBS approach to smart meter programs strengthens the principal agent bond by better linking contracts to anticipated business benefits and creating principal agent relationships and sub relationships that best align to the desires to the overall objects of the utility. A smart meter service provider is in a better position to create a stronger Principal-Agent relationship with sub-vendors compared to a utility. Globally, MBS approaches to smart meter programs are rapidly growing with many jurisdictions purposely developing market conditions for MBS success because of the proven improvements to program objectives, costs and value to both the utility and its customers.

By recognizing the significant business transformation triggered by smart meter programs, a utility opting for a MBS approach gains the flexibility to more broadly share risk, reduce costs, and accelerate the realization of business values. The MBS model reduces the constraints of the Principal-Agent problem allowing utilities to focus on their core business of providing reliable electricity to its customers.



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