



HOW UTILITY COMPANIES CAN ACCELERATE VALUE WITH AMI 2.0 AN IMPLEMENTATION FRAMEWORK



Abstract

In the present era of digital transformation, AMI 2.0 represents a paradigm shift for utility companies seeking to enhance efficiency, reliability, and customer satisfaction. Executing a successful transition to AMI 2.0 requires robust planning and preparation with an eye on concerns such as program management, deployment, and integration. Meters with embedded edge computing and advanced data capabilities can provide utility organizations with insights to improve operations and remove blind spots across the electric distribution network.

This paper details several Infosys offerings that are designed for utility organizations looking to adopt AMI 2.0. It explains the frameworks, models, templates, and tools used across a three-step approach that ensures successful AMI 2.0 rollouts for the utility industry.

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Introduction

The next generation of advanced metering infrastructure or AMI 2.0 is a leap forward for the evolving utility industry with unprecedented opportunities for transformation. It can propel strategic change and enhance business outcomes for utility organizations.

However, adopting AMI 2.0 requires an approach similar to any transformation program. It requires a holistic framework with a strong program management practice for strategic implementation planning in addition to robust tools and templates for effective deployment, and advanced tools for seamless integration.

Infosys provides a comprehensive suite of services that assist utility organizations in deploying AMI 2.0. These services leverage some key competencies of Infosys around AMI 2.0. Further, they are offered through a three-step approach that Infosys recommends for successful AMI 2.0 rollouts.

Key AMI 2.0 Competencies from Infosys

To help organizations fully leverage the potential of AMI 2.0, Infosys offers some key competencies including a framework, tools, models, and templates as described below:

A framework for strategic planning and roadmap development	Tools for developing use cases	Models for tracking value	Templates for OCM strategy
<p>A framework for strategic planning and roadmap development – This framework helps organizations set the right foundation for successful AMI 2.0 adoption. It provides comprehensive analysis and encourages collaboration across the organization so that all teams concerned can jointly define the objectives and evaluate current capabilities. This is important competency during the implementation phase to align AMI 2.0 initiatives with overall business goals. With a clear roadmap, organizations can navigate the complexities of AMI 2.0 adoption while maximizing returns on investment.</p>	<p>These tools assist utility organizations in identifying and prioritizing the key use cases for AMI 2.0 that will drive value. Assessments and feasibility studies are used to uncover opportunities for optimized operations, customer engagement, and enhanced revenue. These tools also facilitate informed decision-making, and are a vital part of the implementation phase.</p>	<p>Models for value realization measurement (VRM) and value traceability empower utility organizations to quantify and track the impact of the AMI 2.0 implementation. It defines quantifiable key performance indicators (KPIs) and performance metrics that utility organizations can use to assess the effectiveness of these initiatives and course-correct as needed. The models are transparent, ensuring accountability. They are also designed to facilitate continuous improvement, thereby increasing the value realized from AMI 2.0 implementations. Such models are pertinent in the deployment phase of AMI 2.0.</p>	<p>Infosys provides organizational change management (OCM) strategy templates for utility organizations to proactively address challenges and drive stakeholder engagement. The templates encompass tailored change management strategies, communication plans, and training programs, fostering a culture of innovation and collaboration. This ensures that people, processes, and technology are seamlessly integrated to maximize the success of AMI 2.0 initiatives. These templates are useful during the integration phase of AMI 2.0 programs.</p>

A 3-step Approach for Successful AMI 2.0 Adoption

Leveraging our deep experience and knowledge of the challenges and operations of the utility industry, Infosys has designed a three-step approach to AMI 2.0 adoption, powered by a complete set of Infosys competencies for each individual step.

Step 1: Strategic Planning for Implementation

Implementing a transformative technology requires effective program management. Infosys offers a comprehensive suite of program management services to help utility organizations navigate the complexities of AMI 2.0 adoption and plan the implementation in a way that maximizes returns on investment. It includes:

- **Business case templates** – These focus on financial viability and strategic alignment, aiding utility organizations to articulate the rationale and expected benefits of AMI 2.0 adoption. It helps decision-makers analyze the costs, benefits, and risks, so they can make informed decisions and secure stakeholder buy-in.
- **Capability maturity model** – This model assesses and enhances the program management capabilities of utility organizations. It evaluates key competencies such as planning, execution, monitoring, and control to identify areas for improvement and issue actionable recommendations. The model helps utility organizations strengthen their program management practices so they can attain greater efficiency and effectiveness from their AMI 2.0 implementation.
- **PMO dashboard template** – This offers utility organizations a comprehensive view of KPIs and project metrics to track the progress of the AMI 2.0 deployment. It provides real-time insights across budget, schedule, and quality metrics that can be visualized through customizable dashboards. It assists PMOs in making informed decisions and monitoring and managing the AMI 2.0 program.
- **Deployment/Class-4 estimation model** – This helps utility organizations accurately estimate the resources and effort required for the AMI 2.0 deployment. It considers factors such as project scope, complexity, and resource availability to provide a reliable basis for planning and budgeting. It generates detailed cost and effort estimates so utility organizations can mitigate risk and ensure the successful execution of their AMI 2.0 program.
- **Program reporting template** – This encompasses standardized reporting formats and metrics, enabling utility organizations to effectively communicate the progress and performance of their AMI 2.0 programs to stakeholders. Clear and concise reports ensure consistent and transparent program communication, thereby keeping stakeholders informed and engaged throughout the AMI 2.0 deployment lifecycle.



Step 2: Infrastructure and Meter Deployment

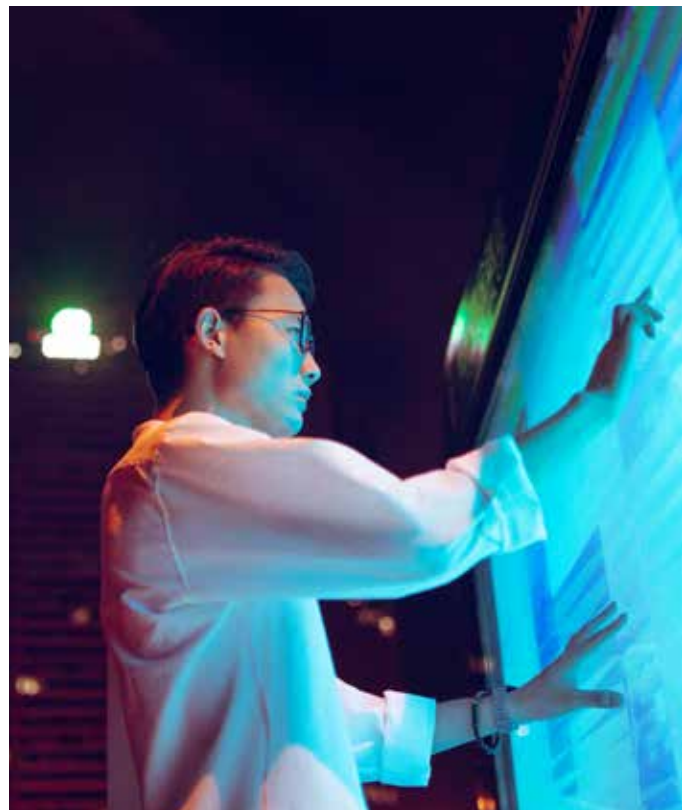
As utility organizations transition to AMI 2.0, efficient deployment is essential for operational excellence. Infosys offers specialized deployment services to support utility organizations in optimizing their AMI 2.0 rollout strategy, enhancing route optimization, and implementing robust meter rollout reporting dashboards. Some of these services include:

- **Rollout strategy template** – This provides a structured framework to develop comprehensive deployment strategies for AMI 2.0. It considers factors such as geography, customer segmentation, and infrastructure readiness so utility organizations can define clear objectives, timelines, and resource requirements. The template can be followed in a way that minimizes disruptions and maximizes efficiency.
- **Route optimization template** – Optimizing meter installation routes enhances the efficiency of AMI 2.0 deployments. With this template, utility organizations can analyze factors such as traffic patterns, geographic proximity, and resource availability, enabling them to adapt to changing conditions, minimize travel time, and reduce fuel costs.
- **Meter rollout reporting dashboard** – This provides utility organizations with real-time visibility into the planning, deployment, and exceptions of their AMI 2.0 rollout. It consolidates data from various sources and tracks key metrics such as installation progress, compliance with rollout schedules, and resolution of deployment exceptions. It also offers interactive visualizations and customizable reporting capabilities, empowering utility organizations to make informed decisions and drive continuous improvement in their AMI 2.0 deployment efforts.

Step 3: Systems and Process Integration

Infosys offers specialized systems integration services to support utility organizations in managing the scale and impact of integration and accelerating testing for connected devices in the AMI ecosystem. Some of the key integration services are:

- **Integration impact dashboard** – This offers a comprehensive view of the complete impact of AMI 2.0 integration across processes, systems, functions, and regulatory compliance. Having a single view into these metrics allows utility organizations to easily assess the scope and complexity of their integration efforts. The dashboard also provides real-time updates and customizable views so users can prioritize integration activities and make informed decisions.
- **Connected devices testing acceleration** – It is important that connected devices meet the required standards and specifications in order to minimize risk and accelerate the AMI 2.0 deployment. These services allow utility organizations to expedite the testing of devices within the AMI ecosystem. It leverages automated testing tools and frameworks to conduct thorough and efficient testing of device functionality, compatibility, and performance.



AMI 2.0 Use Cases

The following use cases highlight the diverse applications of AMI 2.0, focusing on improving efficiency, reliability, and customer engagement in energy management:

Real-time energy usage monitoring

Consumers can monitor their energy usage in real-time through mobile apps or web portals. This not only increases energy awareness but also helps consumers make informed decisions on reducing their consumption and costs.

Demand response programs

Utility organizations can send signals to smart meters and connected devices to reduce or shift energy usage during peak demand periods. This enhances grid stability, prevents outages, and reduces the need for additional generation capacity.

Outage detection and management

The ability to detect power outages in real-time and get precise information on affected areas can optimize the response time and coordination activities for outage restoration efforts.

Load forecasting

Utility organizations can use historical and real-time data to predict future energy demand patterns so they can better plan and manage energy supply, reducing the risk of over or under-supply.

Integration with home energy management systems (HEMS) allowing smart meters to communicate with home energy management systems can optimize the energy usage of connected devices. This will, in turn, increase energy efficiency and provide greater control to consumers over their energy consumption.

Distributed energy resource (DER) management

AMI 2.0 allows integration with solar panels, battery storage, and electric vehicles to manage distributed energy resources. It enables utility organizations to integrate renewable energy sources and improve grid flexibility.

Peak load shifting

The automated shifting of non-essential loads to off-peak times based on predefined rules or utility signals reduces peak demand and lowers overall energy costs.

Electric vehicle (EV) charging optimization

Utility organizations can manage and optimize the charging schedules of electric vehicles to align with the grid capacity and availability of renewable energy. This also supports the integration of EVs into the grid and promotes the use of renewable energy for EV charging.

Grid health monitoring

By continuously monitoring grid conditions such as voltage levels and power quality using data from smart meters, utility organizations can boost grid reliability and identify issues before they lead to outages or equipment failures.

Environmental impact reporting

Providing consumers with information about their carbon footprint and the environmental impact of their energy usage leads to an increased awareness of environmental impact and encourages sustainable energy practices.

Advanced analytics and reporting

Utility organizations can use data analytics to generate insights on consumption patterns, peak demand times, and efficiency measures, giving them actionable insights that help optimize operations and elevate customer service.

Real-time alerts and notifications

Sending real-time alerts to consumers and utility operators about unusual usage patterns, potential outages, or other important events enhances responsiveness to issues and improves consumer awareness and actionability.

Community energy programs

With AMI 2.0, utility organizations can support community-based energy programs such as shared solar or neighborhood energy storage solutions. This also helps promote local energy solutions and fosters community engagement in energy management.

Compliance and regulatory reporting

The automatic generation of reports required for regulatory compliance and support audits with detailed data logs will ensure compliance with regulatory standards and reduce the administrative burden on utility organizations.

Conclusion

Unlocking the full potential of AMI 2.0 requires a well thought-out implementation approach, supported by best-in-class tools, templates, models, and frameworks. Infosys helps utility organizations accelerate the value realized from AMI 2.0 by leveraging a host of competencies, delivered through a three-step implementation approach. Infosys program management services help utility organizations optimize their implementation journeys and achieve operational excellence. Our deployment services support utility organizations through rollout strategies, enhanced route optimization, and robust reporting dashboards. The systems integration services we provide help utility organizations manage the impact of integration and accelerate testing for connected devices. By leveraging Infosys' expertise and competencies, utility organizations can ensure seamless integration and successful deployment of AMI 2.0.

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Matt Lenzini is an experienced leader, with a 25+ year career bringing solutions to market and leading cutting-edge technology initiatives for Fortune 500 and mid-market utility companies. Matt has been a trusted advisor, helping organizations navigate change and has managed large scale, cross functional transformation programs across the industry.

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