

Case Study



Integration of the CIS system of a large western utility with multiple AMI systems and an MDM system

Abstract

Infosys is working with a leading North American Utility to integrate its CIS system with multiple AMI and MDM systems. As a trusted integration partner, Infosys helped the utility define the integration architecture and the business processes required to achieve business benefits. The solution leverages Infosys' AMI-MDM integration experience and service offerings for implementing large scale integration programs.

Client Overview

The client is a leading investor-owned electric utility in western US that distributes power to more than 1 million customers in 11 counties. It operates over 5,500 miles of transmission lines and more than 28,500 miles of distribution lines. It generates more than 6,000 MW of capacity at mainly fossil-fueled and nuclear power plants. It also sells excess energy from the utility's power plants as well as power generated by its subsidiaries to wholesale customers in the western US.

The Business Need

- Automate the business operations related to meter reading and field services
- Manage interval meter data effectively and utilize the data for decision making
- Establish processes and systems to support demand-side management
- Implement robust and intelligent processes for early outage detection making outage management more efficient
- Reduce power theft
- Create customer-centric processes for higher customer satisfaction

To cater to these needs, the client planned to deploy smart meters in the field and an MDM system to manage the increased volume of meter data. To meet these needs, the customer information system had to be integrated with these systems.

Key Challenges

- Identifying the processes that needed to be changed to support the integration and deliver the required benefits
- Mapping the existing business scenarios to the new model and defining customization to the products
- Secure communication to the meters
- Plan capacity for the infrastructure to support the AMI and MDM systems
- Coordinate with various departments within the organization and manage dependencies among the integration partners
- Design a scalable architecture meeting all business needs and one that is aligned with the architecture vision of the organization

The Infosys Solution

The services that Infosys provides to the client include business requirement definition, process identification, program management, technical and business integration, development and validation of changes. The major responsibilities of Infosys are:

- Business process mapping between the AS-IS model and the TO-BE model
- Assisting the client with business requirement definition for the AMI and MDM vendors
- Program Management
- System integration services for aligning technology and business solutions
- Application customization and enhancements to meet business needs
- Testing services for performance and functional parameters

Business Solution

By leveraging a top-down integrated approach, Infosys studied the current processes and defined the future state of the integrated solution that would meet all business needs. Additional improvements were planned to migrate the current fragmented technology environments to an integrated enterprise solution.

The figure below shows the top-down approach.

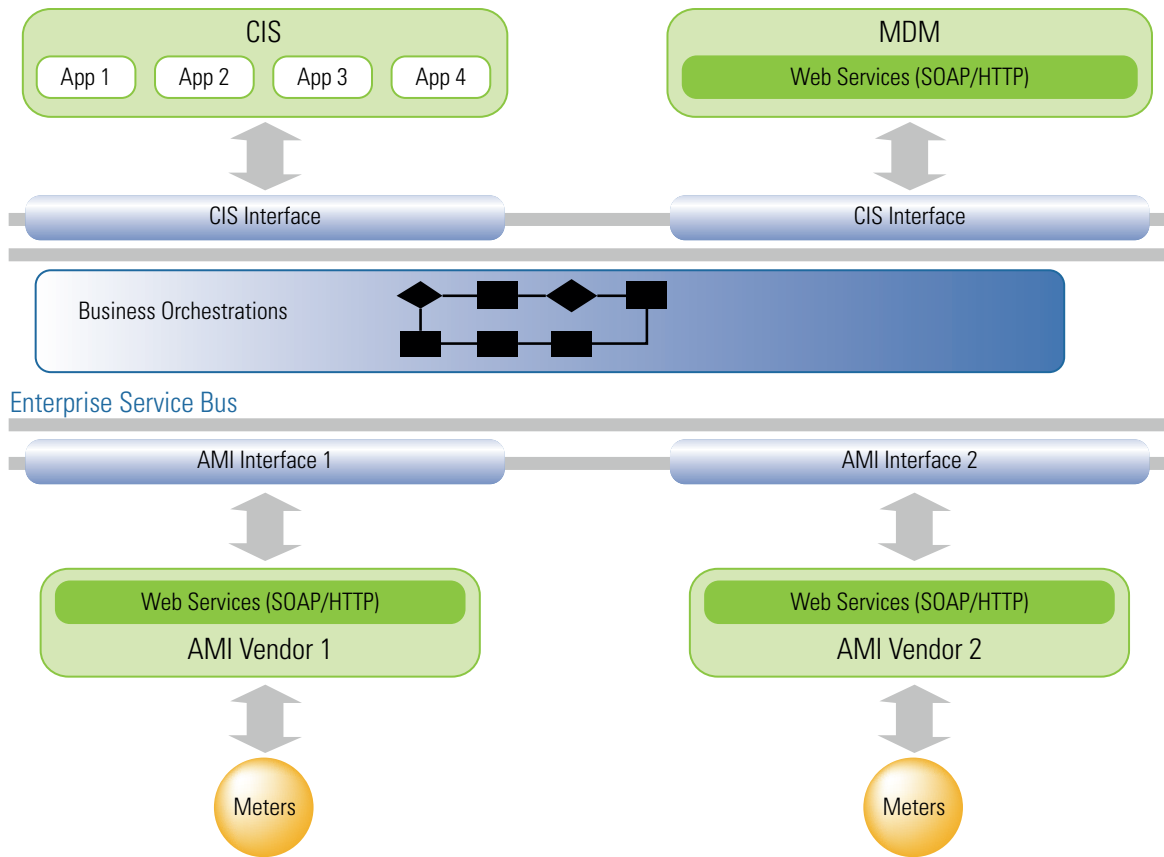


Integration Solution

The figure below shows the integration blue print designed for the client. There are various heterogeneous applications in CIS integrated with two AMI systems and an MDM system over the Enterprise Service Bus. The above solution is designed based on SOA (Service Oriented Architecture).

The AMI and MDM systems have web service interfaces. There are interfaces built on ESB (Enterprise Service Bus) to transform the web service interfaces to standard interfaces built on CIM (Common Interface Model). There is a Business Orchestration component to orchestrate the requests from CIS applications based on the business rules.

The orchestrated functions are deployed as services on the ESB for heterogeneous applications. This approach provides a scalable solution for applications that will use these services in the future. It also provides flexibility to change orchestration rules as needed.



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