

Case Study: Leveraging Industry Standards for Enterprise Information Management, supporting Semantic Integration on Smart Grid projects at Long Island Power Authority (LIPA)

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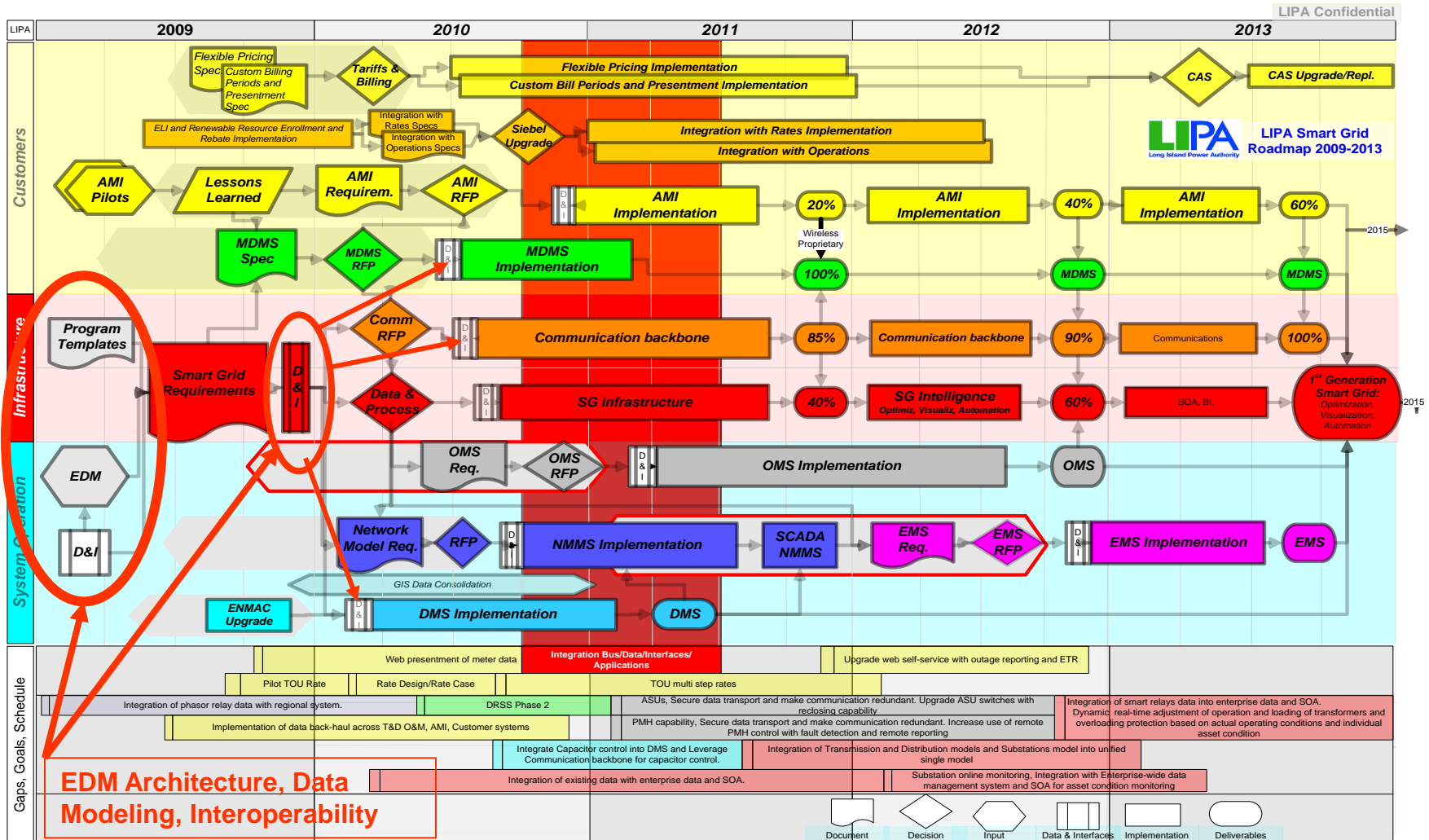
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Overview

- Real-life Case Study of how LIPA are implementing Semantic Integration in their Smart Grid Program.
- Our Story:
 - LIPA Smart Grid Business Drivers (Why?)
 - Target Architecture and Enablers (What?)
 - Semantic Integration Approach (How?)



LIPA Smart Grid Technology Road Map



LIPA Business Drivers Related to IT

- “Near Plug and Play”, Flexibility, Agility & Portability
 - Avoid vendor- and technology lock-in’s
 - Multiple Service Providers
 - “Best of Breed” Applications
 - Single Data Source & Multiple Users
 - Stable Enterprise Data Model & Flexibility of Business Intelligence Options
 - Open to new technology, solutions, applications
 - the key to leveraging investment in Smart Grid infrastructure and many new players
- Lower Life Cycle Cost
 - Less expensive “repetitive” integration of SPs and critical systems
 - Interoperability for lower cost of both Implementation and Maintenance
 - Shorter, Predictable Time to Deliver
 - Availability or competitive services by avoiding “proprietary” solutions



LIPA Integration & Standards History

- LIPA started pilot projects in utilizing industry standards for interoperability of systems in 2000
- LIPA Recognized the need for an innovative model-driven approach in 2007
- LIPA's New Model-Driven Approach :
 - Enables semantic integration through the use of a common semantic model
 - Supports “automated” maintenance, testing, and updates of enterprise data model across company systems



Projects Track Record

- The LIPA Model-Driven Semantic Integration approach has consistently performed under budget and on time under extremely complex and trying conditions.
- Trend of reduced cost and improved delivery speed is based on:
 - Use of tools for “automated/integrated” development, testing, implementation, and maintenance of the model
 - Model-re-use in new and replacement projects
 - Reuse of data and interfaces across company systems and SOA



Projects Track Record

- Projects completed & in-flight include:
 - Energy Trading
 - Customer Outage Communication (Web Outage Map)
 - Customer Outage Communication (Text Messaging)
 - Meter Data Management (in progress)
 - Outage Management (OMS – in progress)
 - Customer Consumption Data integration



Key Elements of LIPA Semantic Integration

- Centrally Managed Semantic (Data) Model
 - Heterogeneous interfaces mediated through common model
 - Based on industry standards (IEC CIM)
- Centrally Managed Semantic Mapping and Business Rules
 - Integrate & Reuse Business Rules, transformations, mappings
 - Automate gap analysis, documentation
- Centrally Managed Development and Run-Time Deployment
 - Generate ready-to-go SOA services
 - Continuous testing
 - Deploy into any runtime environment
 - Automate impact analysis on change

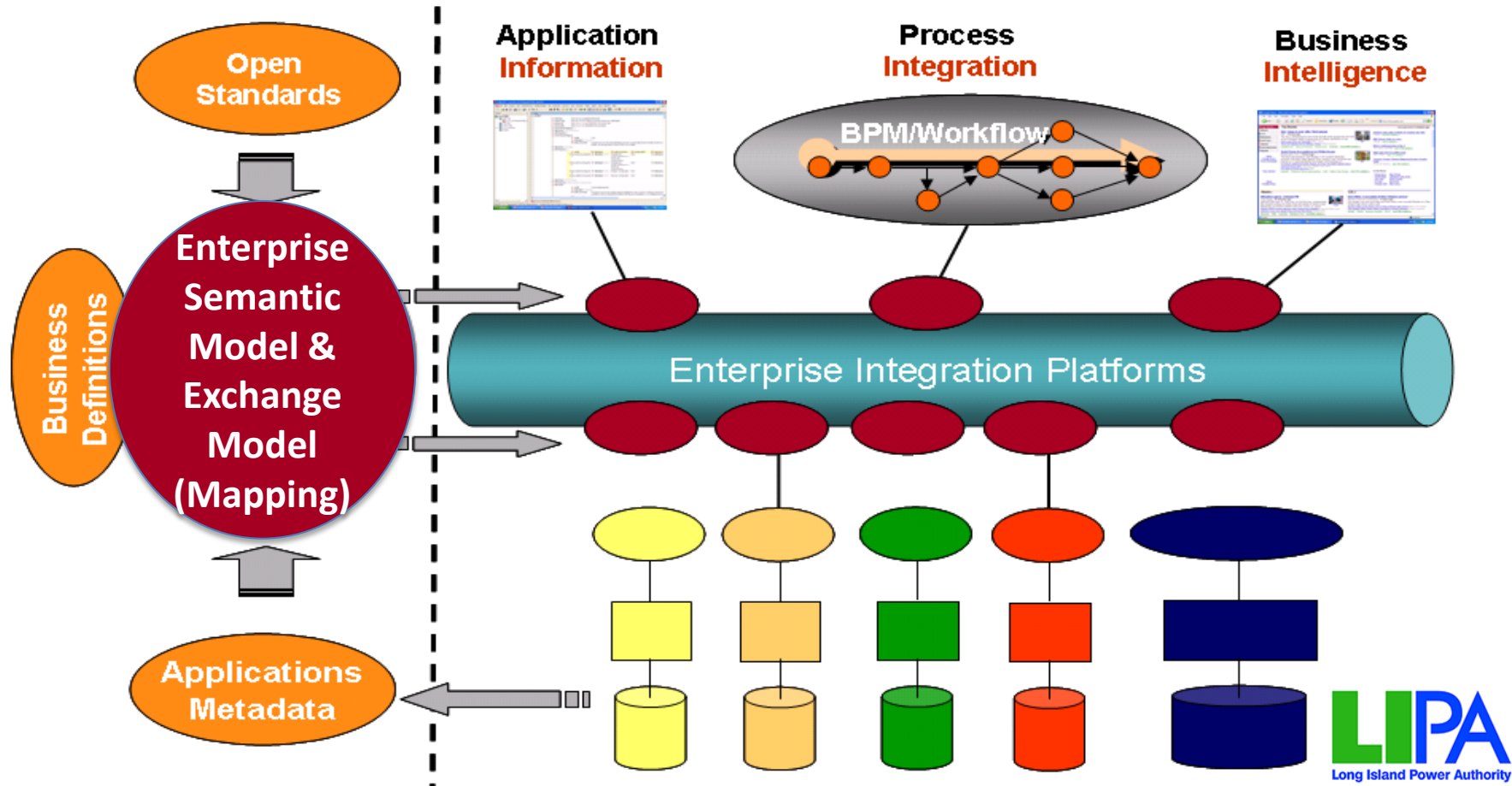


Semantic Integration Value Proposition

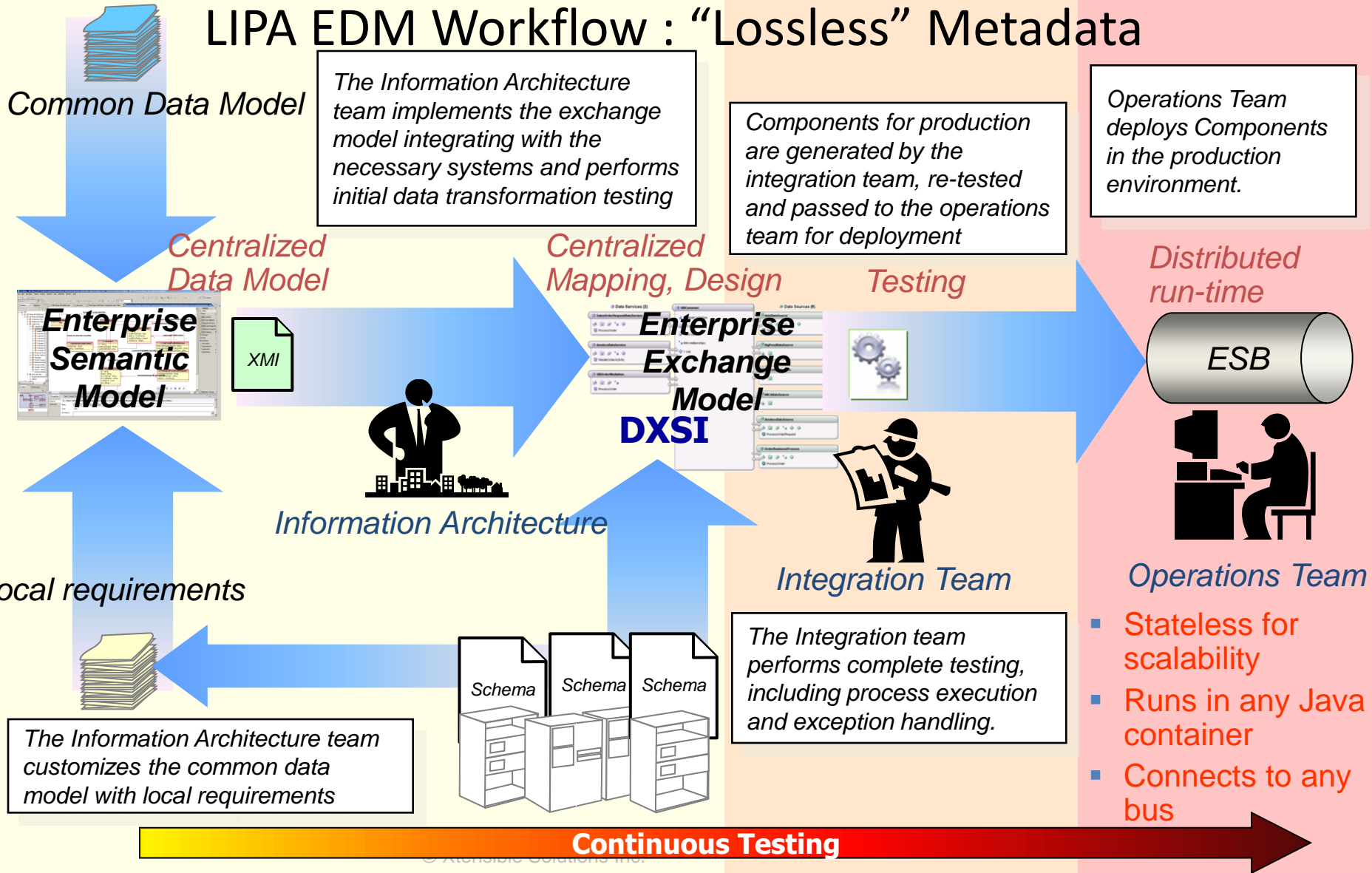
- Make all run-time interoperability decisions at semantic layer
 - Configuration rather than coding
 - Automate implementation
 - Simplified testing
 - Test mappings, transformation and business rules using design-time tool (DXSI)
 - Effective maintenance and updates!!!



LIPA ESM and Integration Concept



LIPA EDM Workflow : "Lossless" Metadata



Key Take-Away Points

- Innovative Integration approach with benefits of
 - Plug and Play for systems and BI applications
 - Benefits of automation for integration, testing, maintenance, updates
 - Lower Life Cycle Cost and more effective system deployments
- Model-driven approach that leverages Industry Standards (CIM) and interoperability
- Scalable (Structured, planned, model-driven approach)
- Semantic understanding is guaranteed (explicit, not implicit) ;
 - availability of strongly typed syntactical interfaces is not a requirement for success any more
- Easier updating and tracking of standards development



Thank You

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