

GEM Case Study Potomac Electric Power Company **Enterprise Application Integration**

Situation

Potomac Electric Power Company's (Pepco's) 2000 IT Strategic Plan identified Enterprise Application Integration (EAI) tools as a core technology to support an aggressive legacy application replacement program planned across the company. One of Pepco's strategic initiatives for information technology is to buy best-of-breed information systems – for distribution operations, asset management, geospatial modeling and distribution design, supply chain management, human resources, and other critical business areas – and integrate the systems to form a seamless information environment. Between 2000 and 2002, Pepco replaced its Outage Management System, Geospatial Information System, Supply Chain Management System, and Human Resources System, commissioned a new Mobile Data System for field force management, and made major enhancements or additions to its Customer Information System and Work Management Systems. A key enabler for Pepco's best-of-breed strategy was the use of Enterprise Application Integration tools.

Solution

Following selection of the SeeBeyond e*Gate, Pepco needed to establish internal EAI expertise and prepare a solid technology implementation infrastructure. This involved a wide range of activities to train the support teams, setup the development infrastructure and standards, and work through the prototyping and proof of concept activities.

Team Skills Development

Like many companies, Pepco faced a two-tier challenge in developing team skills. First, virtually all of the EAI tools assume a baseline knowledge of object-oriented programming, as well as language skills in Java, C++, or both and familiarity with XML. So it was important to ensure that the Pepco personnel who would be trained for EAI had an adequate understanding of these concepts. Second, Pepco needed to obtain specific training on the EAI tools. GEM took responsibility for both of these training challenges.

Architecture, Setup, and Testing

The EAI vendor, Pepco, and GEM worked cooperatively in the initial definition phase to refine the architecture (e.g., the exact platforms on which the various EAI components would be installed, system redundancy, system sizing, and basic configuration of the tools.)

Pilot Project

Pepco required that the EAI vendor take the lead on the Pilot Project, because successful completion of the Pilot Project was part of the acceptance criteria for the EAI tools. GEM joined with the Pepco EAI team and the vendor's professional services personnel as a Pilot Project participant, with the dual objective of assisting with successful completion of the Pilot Project



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and capturing the vendor personnel's best practices to support subsequent tasks.

Development of Processes and Standards

GEM participated with Pepco's system administration and development process personnel to create new processes for using the EAI tools' capabilities in a structured development environment. This included:

- Integration Design Templates and Lifecycle
- Naming Conventions
- Reusable Components
- Library Management
- Testing
- Test, Staging, and Production Release Procedures
- System Monitoring
- System Administration
- Security and Audit Procedures.

Business Event Definition/Business Data Modeling

Business events are the principal mechanism for integration when using the EAI paradigm. Rather than performing data transfers from one application to another on a rigid schedule, each application in the EAI-enabled enterprise provides notifications when significant business events occur. Other applications that require the notifications can subscribe to these events and use the events and their contents to control the flow of an overall enterprise business process.

GEM led the discovery and documentation of these business events. It was important first to recognize all the events that would be needed to meet current integration requirements. But it also proved important to think more abstractly about potentially useful events that were not currently being used simply because the technology had not been available to exploit them.

Adapter Development

Wherever possible, packaged and certified adapters provided by the EAI vendor were used to connect to applications. For internal Pepco applications or third-party applications for which no commercial adapter exists, GEM and the Pepco EAI team developed adapters using the EAI vendor's adapter software development kit.

These activities began in May 2001. In November 2001 the initial EAI-based integration (between the Customer Information System and Mobile Dispatch System) was placed in production. In March 2002 PeopleSoft 8 (Human Resources and Payroll) was placed in production, followed by SAP R/3 (Materials Management, Inventory Management, and Accounts Payable) in July 2002. GEM and Pepco have also completed the EAI integration work for the new Pepco Outage Management System, which was placed in service in November 2002, a large-scale integration between the Customer Information System and the Meter Inventory Data



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System, and integration of SAP R/3 with a Logica WMIS (Work Management) system, Maximo Asset Management System, and over 20 external partners and internal legacy systems.

GEM's Role

Based on GEM's experience and familiarity with Pepco's business practices, GEM was engaged to serve as its EAI Systems Integrator and prepare the Pepco IT organization to integrate a wide range of corporate applications. To assist Pepco in establishing EAI as a core technology within Pepco, GEM led or participated in the following activities.

- Training in object oriented programming and EAI tools
- Preparation of the technical infrastructure to support integration
- A pilot project to identify and refine development practices
- Define development processes and standards
- Define business events and map business data
- Develop custom adapters



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