

Case Study



TIBCO EAI Solution Helps Energy Giant Increase Productivity, Reduce Costs

Abstract

The client is one of the world's largest energy companies, providing its customers with fuel for transportation, energy for heating and lighting, retail services, and petrochemicals products for everyday use.

The energy giant's several regional business units covering various business functions are spread geographically all across the globe. With its IT infrastructure comprising over 40 applications, the company needed to align and integrate them for effective business functionality. With its active interests in hydrocarbon trading, real-time information flow across applications was necessary to establish client's exposure and position in the market.

The energy conglomerate engaged Infosys to define and restructure its Integration Framework and implement standards-based interfaces for near real time information flow. Infosys' Enterprise Application Integration (EAI) solution based on the preferred middleware, TIBCO, helped the client improve customer experience and productivity while reducing the total cost of ownership (TCO).

Situation

Over the decades as the energy company grew organically and inorganically, the complexity of its business increased. In the absence of a standard and common integration platform, its IT department was increasingly challenged by a multitude of bespoke integration interfaces.

The operational challenges were responsible for rising operating costs, increased time to market for business and falling user satisfaction.

The company needed a flexible and scalable solution with a standardized approach to integrating applications across the enterprise. The key pay-offs sought were lowered TCO, increased ROI, and greater agility in operations across multiple geographies.

Some of the key issues that needed to be addressed on priority were:

Point-to-point Integration

Every business unit had its own non-standard integration approach and most of the interfaces were tightly coupled. This led to higher maintenance and support cost.

Lack of Standard Business Entity model

Lacking a standard business entity model meant that any change in a business entity in any one of the applications required enormous effort to re-enable all the affected integration points.

Limited Scalability

Due to the lack of a standard integration architecture and framework, the system lacked the scalability needed to handle a larger volume of increasingly complex transactions.

Poor maintenance and support

The client also lacked centralized monitoring and efficient support ability related to integration infrastructure. Data reconciliation was another key area of concern.

Solution Overview

The client engaged Infosys to define its Enterprise Application Integration strategy and framework. Infosys, an incumbent strategic partner of the client, was able to effectively leverage its sound understanding of the client's operations and processes. Partnering with the client, Infosys utilized its expertise in offshoring and TIBCO product suites to deliver the solution. Infosys' key challenges involved – standardization of business entity definition across multiple domains, data model optimization and overcoming limitations of non-standard base integration across domains.

There were around 40 applications to be integrated. The solution involved building about 100 end-to-end interfaces comprising of over 300 components.

Key Solution Highlights

To meet the requirements, Infosys along with the client's architects, implemented an Integration Framework. TIBCO suite of products was leveraged to implement this framework. It comprised of Service, Transport, and Business Process layers. A monitoring solution along with a holistic dashboard view was also installed. Some of the key features of the solution were:

- **Service-based Adapter Framework**

To enable integration of the client's custom application, TIBCO custom adapter components were created by the Infosys team. These custom adapters enabled integration of the application with the centralized integration system. For standard COTS applications, TIBCO's ready to use adapters were utilised. Adapters were exposed as a service to the integration components. The adapter framework substantially reduced the number of adapters.

- **Common Integration Services**

Global exception logging, notification and reporting, data cross-referencing and data sequencing formed the core services of the integration framework.

- **Factory Model Development**

By leveraging the TIBCO BW template feature, Infosys added reusability and standardization to interface development templates. Standard document templates were created for designs, requirements and architecture. This enabled the Factory Model of interface development, leading to 30% reduction in the development cycle.

- **Business Specific Integration Data Models**

Identified business flows, related application interactions and created corresponding common data models. This involved understanding of the industry standards within the Energy domain, extracting the interface specific information and creating common information model.

- **Support Console -**

Leveraged TIBCO Portal Builder to design and implement support consoles with user authentication and authorization. Automated workflows minimized user interactions and reduced exception resolution time.

- **Standardized Operation Process**

Identified existing process bottlenecks and standardized them for optimum performance. Tools were developed leveraging TIBCO

command line application deployment and management interface for standardizing operations and minimizing possibility of manual errors.

- [Data Reconciliation](#)

Automated reconciliation report creation to reconcile source and target systems. It enabled support staff to configure the frequency of runs and correct production issues proactively.

- [Integration Repository and Portal](#)

To ensure high quality of interface design and development, an integration repository was created for the metadata from all business flows. It helped the business analyst, architecture and design groups to eliminate inconsistencies and gaps in their respective areas and improved the quality of deliverables.

The solution enabled on-demand generation of reports enabling higher management to make the right decisions at right time. It also helped businesses calculate cost of future projects.

- [Greater Operational Integrity](#)

Operational Integrity was enhanced through automated notifications that were built into the processes. These intimated the staff of production issues that could potentially lead to legal issues or impact business and reputation.

Business Benefits

Infosys' solution helped the client to establish an enterprise wide application integration strategy and framework. It has helped the client improve the turnaround time for responding to change requests and new developments related to application integration thereby promoting business excellence and improving customer experience.

The principal benefits include:

Enhanced User Experience

Transaction monitoring solution was put in place catering to the business need of tracking the end-to-end message delivery through various intermediate interfaces. Transaction monitoring provided the ability to track message status throughout its life cycle across integration components. This significantly improved analysis and resolution time of production issues. It also enabled support staff to quickly respond to the majority of business users' inquiries. Additional monitoring of low level data processes enabled better visibility of issues for support staff. For example, it used to take two business days to simulate a problem related to a medium complexity support ticket in lower environments. With the help of transaction monitoring, the same activity can be completed in less than 30 minutes.

Reduced Time-to-market

Faster solution development through the use of customized templates and rapid deployment using tools resulted in about 30% effort reduction.

Lower Cost of Ownership

Cost of ownership was reduced as a result of the standard integration approach, reusable services and standard tool sets – such as the readily available integration framework and off-the-shelf tool sets for administration and testing. The solution reduced incremental development and support costs for each additional application that consumes the messages.

Scalability and Performance

Use of common data models, service-based adapter and robust integration framework ensured a highly scalable solution for meeting business needs with minimal turnaround time. TIBCO's performance optimization guidelines were implemented in the solution ensuring near real time integration.

Increase in Productivity

Automated integration helped increase business productivity:

- Automated Transaction pipeline: Business team was better able to focus on productive activities with the elimination of dual entry and data reconciliation issues along the transaction pipeline.
- Reference data creation automated: Dozens of business resources freed from business stewardship activities with the automation of about 95% of these tasks. This automation has been extended into the applications as the integration team provides application adapters. These adapters automate application specific activities that result when integrating data from an outside system through the integration layer.

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For more information, contact askus@infosys.com

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