Data Integration is Not a Business Process

A Magic xpi Integration Platform for JD Edwards White Paper
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Introduction
Perspective often governs our understanding, beliefs and approach to life and problem solving. Astronauts often speak of the powerful impact that a change in perspective had on their lives.

“Seeing Earth from this vantage point gave me a unique perspective, something I’ve come to call the orbital perspective. Part of this is the realization that we are all traveling together on the planet and that if we all looked at the world from that perspective we would see that nothing is impossible.” – RON GARAN, NASA ASTRONAUT.

Part of the criticism that I have of data integration tools is that they are governed by a myopic perspective of a business: the data view. Consequently, data integration tools try to solve all business problems by, well, integrating data when what is often called for is integration of applications (including their logic) or even more broadly integration of end-to-end enterprise business processes.

Classes of Integration Solutions
Data integration is an older term than application integration and it refers to the integration of information at the database level. Data integration is often satisfactory for synchronization and consolidation of information but falls short when business transactions and logic are involved. Data integration is characteristic of older ETL tools and batch processes that take place outside of real-time processing.

Application integration attempts to look at the challenge of enterprise integration more coherently by leveraging internal application functions rather than simply synchronizing and transforming data. By incorporating events, business logic and transaction patterns together with data and metadata more effective results are achieved. These results can be limited, however, by the point-to-point perspective of application integration. Success is too often judged as the integration of functions and data between Application A and Application B and not as the successful completion of an end-to-end business process and its constituent error recovery, alternate and exceptions processes.

Business Process Integration approaches the problem of enterprise integration from a perspective that includes, data, applications, human workflow and multiple system interactions. System boundaries are not defined as lying within the enterprise IT systems but instead extend to human workflow processes, business-to-business systems interaction, mobile business processes, cloud transactions (outside the firewall), and social media and Web-based processes. The broader perspective of Business Process Integration allows the enterprise architect and business analyst to create automated systems for handling end-to-end multi-channel business processes that provide improved customer experience, efficient trading partner interactions and more productive employee processes.
Companies that choose **data integration** tools to solve business problems risk making IT decisions from a perspective that limits results to constrained patterns. For this reason, solutions such as SSIS, Pervasive, Scribe, Oracle Data Integrator, and IBM InfoSphere Information Server are not recommended for enterprise integration.

Companies that choose **application integration** servers to automate application interactions similarly risk making IT decisions from that limited perspective. For this reason, solutions such as BizTalk, Mulesoft, Jitterbit and IBM CastIron are not recommended for enterprise integration.

Companies that choose **business process integration** tools to solve business problems have the greatest chance to align IT capabilities with business needs for data integration and transformations, functional application integration, and complex business process orchestration across multiple systems. For this reason, solutions such as Magic xpi Integration Platform, Oracle Fusion Middleware, Tibco ActiveMatrix BPM, and IBM WebSphere Middleware provide the most comprehensive solutions for end-to-end business process automation.

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**Differentiating Business Process Integration Solutions Between Middleware Layers and Integration Platforms**

The most common approaches to business process integration are solutions based on **multiple middleware layers** and **unified integration platforms**. Solutions based on multiple middleware layers (Oracle, IBM, Tibco) have multiple tools, studios and servers to support each of the middleware layers (such as ETL, ESB, SOA and BPEL). Use of these middleware stacks requires a very large enterprise IT team with skills in the multiple toolsets provided. A unified integration platform like Magic xpi Integration Platform provides all of the business process integration functionality (data integration, EAI, BPM, and SOA) through a single studio, server and monitor interface. Only one skillset is required and it can therefore be managed efficiently by a smaller IT team.
Understanding Data Integration Requirements within a Business Process Integration Solution

By applying a business perspective to IT requirements, one can see that data integration is not a business process. Data integration may be a sign of a well integrated business process but it does not define or constitute a fully integrated business process. Data integration is one dimensional. Business process integration expands the dimension to include not only data but also events, system-to-system processes, and human workflow interactions (such as email, social feeds, and website inputs). Nevertheless, data integration constitutes a vitally important dimension of enterprise integration. Getting data integration right is critical to successful business process management. Look for these data integration qualities in a business process integration platform:

**In-Memory Scalability**

The data integration phase of business integration procedures can stress the ability of most middleware systems to scale to enterprise multi-channel requirements for transactional, mobile and social processes. Large scale data integration can benefit from in-memory computing that incorporates in-memory messaging, data grids and other in-memory techniques for elastic scalability, high availability and near-zero latency even when performing up-to nearly a million transactions per second.

**Data Quality and Validation**

The principle of GIGO, or Garbage-In, Garbage-Out, is known by every IT professional. Data integration solutions runs the risk of perpetuating bad data input through integration if they do not include appropriate data validation and data quality steps. Data validation is the first step towards data quality. Business process integration solutions must apply data validation rules such as length, format, uniqueness, exclusion and other custom validation methods. Data quality is most closely associated with duplicate checking. Make sure these options are available when appropriate.

**Metadata Governance**

Data integrity, security and privacy standards require effective metadata governance to protect sensitive information. When business process integration platforms incorporate effective metadata governance into data integration capabilities, the integrity of data is better assured. Proper capabilities for user authentication, user rights and data encryption helps keep data secure.

**Real-Time Data Integration**

Batch oriented data integration solutions are not sufficient in service-oriented architecture (SOA) and other fast-paced business process environments. For the most effective business processes that reflect the instantaneous pace of business today, look for real-time data integration capabilities that can execute in parallel across complex environments.

**Flexible Data Transformation Rules**

The data integration capabilities of your business process integration platform should include enough flexibility to apply simple expressions that allow you to transform data by assigning, replacing, replacements based on patterns, truncating, joining, calculating, comparing, reformatting and more.
From Data Integration to Process Integration

As discussed, a proper perspective of enterprise integration spans data integration, application integration and process integration. You will want to utilize a business process integration platform that incorporates a broad range of integration requirements. Features to look for in a business process integration platform include:

Event Driven-Architecture
The ability to publish and subscribe to events at the data, application and system level defines an event driven architecture. These capabilities enable real-time and near real-time responses to business and system events.

Service-Oriented Architecture
The ability to publish and subscribe to services that are fine-grained and reusable defines a service-oriented architecture (SOA). SOA capabilities lead to business efficiency, faster time-to-value, and greater consistency in business processes.

Operational Integrity
The ability to store process instances in an operational data store (ODS) is vital to transactional and operational integrity. Operational integrity is maintained through error recovery, restart, retry, resume, rollback, etc.

Long-Running Processes
One of the key capabilities provided by a business process integration platform is the ability to manage long-running processes. These are typically processes that require human interaction, follow a scheduled pattern or are characterized by irregular communication and transport layer connectivity. The ability of the system to determine when to resume a process flow means that long-running processes can execute regardless of lapses.

Alarms, Alerts, and Escalations
As part of the workflow of long running process, alarms alerts and escalations can be built into the system. Based on your business logic, alarms notify systems or users of out-of-bounds conditions when they occur. For example, an Internet of Things sensor may detect an out-of-bounds temperature on a sensor in a manufacturing environment and trigger SNMP, TCP, JMS or email alarms. In another example, a request for PO approval that passes 72 hours can be escalated to the next higher level of available approver for action.

Multi-Channel Interaction
Business processes can also trigger multi-channel communications between employees, customers and partners. For example, invoice data can be formatted to PDF using XSLT templates and transported as email attachments or portal web pages. Or based on communication preferences set by a user, alerts can be sent to one user via SMS while another receives alert emails and still another receives an in-app smartphone push notification.
Data Integration is Not a Business Process
While all of these business process capabilities require data integration, data integration per se is not a business process; it is a step in a business process. For this reason, businesses are strongly cautioned against acquiring ETL tools and data integrators when the greater additional capabilities of an integration platform can be acquired for about the same cost. A prudent analysis of business requirements will show that much greater business value is attained when a business process integration platform such as Magic xpi Integration Platform is implemented.

Magic xpi Integration Platform for JD Edwards ERP
Magic xpi Integration Platform is designed to provide business process integration for a wide variety of enterprise systems including Oracle JD Edwards EnterpriseOne and Oracle JD Edwards World. With a library of components, methods and resources, including Oracle Validated Integration, the Magic xpi visual studio interface allows you to drag, drop and configure business processes without line-by-line coding. The built-in visual data mapper allows simple connect-the-dot data integration with full capabilities for the kind of complex transformations and expressions needed to integrate JD Edwards ERP with CRM, eCommerce, mobile, logistics, SCM, PLM and other enterprise systems.

Business Process flows run in the background as users interact across all of the applications, websites, mobile devices and social sites that surround JD Edwards and comprise a business process. Your business logic is applied and automated business processes run seamlessly in the background, are recorded to the ODS, and made visible in a monitor, dashboard and log. For additional information or to request a demonstration, contact your local Magic office listed on the Magic website. Magic Software is an Oracle Platinum Partner, Quest International Users Group Platinum Partner and has achieved Oracle Validated Integration for the Magic xpi Integration Platform.
About Magic Software Enterprises

Magic Software Enterprises (NASDAQ: MGIC) empowers customers and partners around the globe with smarter technology that provides a multi-channel user experience of enterprise logic and data.

We draw on 30 years of experience, millions of installations worldwide, and strategic alliances with global IT leaders, including IBM, Microsoft, Oracle, Sugar.com, and SAP, to enable our customers to seamlessly adopt new technologies and maximize business opportunities. We have extensive experience and tailored integration solutions for a wide variety of ERP, CRM and the full range of enterprise systems.

For more information, visit www.magicsoftware.com.

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