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Microsoft BizTalk Server

Making the Right Choice for Enterprise Integration



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BizTalk: Integration Powerhouse

Integration within enterprises has come a long way from just providing technology infrastructure, to being able to deliver real business value. As integration technology has been evolving, different enterprises have also evolved their integration landscape over period of time. As industries mature and organizations are looking at all possible ways of reducing the gap between business and IT, one of the most important shifts that we see is the strategic positioning of the integration infrastructure from purely joining the dots to a complete business service delivery infrastructure.

Microsoft's Integration offering, BizTalk Server 2009 provides a comprehensive, end-to-end Integration solution for enterprises looking to drive the maximum out of their IT investments. BizTalk server provides extensive capability to build integration solutions for large, diversified enterprises with quicker turnaround for developing such solutions.

BizTalk is widely acknowledged and is in use by industries across geographies and domains.

BizTalk's acceptability and spread, as a critical reliable messaging product, is demonstrated by the following usage facts:

- 1) 10,000+ Global Customers – 83% of Global 2000 Customers**
- 2) 90% of global 100 customers run Microsoft® BizTalk® Server**
- 3) 23 of the 27 EU member governments use BizTalk Server to provide government services**
- 4) 6 of the 8 largest U.S. pharmaceutical companies use BizTalk Server**
- 5) 4 of the 5 largest U.S. electronics parts manufacturers use BizTalk Server**
- 6) 9 of the 10 largest U.S. telecommunications companies use BizTalk Server**
- 7) 9 of the 10 largest U.S. aerospace and defense companies run BizTalk Server**
- 8) 5 of the 8 largest U.S. chemical companies run BizTalk Server**
- 9) 4 of the 5 largest U.S. railroads run BizTalk**
- 10) 9 of the 10 largest insurance companies in the world run BizTalk Server**

Comprehensive Industry and Technology Coverage

BizTalk provides the most productive infrastructure for enterprise connectivity and integration. This has reduced the turnaround time to develop critical integration solution drastically.

BizTalk Server 2009 builds on Microsoft stack and when used in conjunction with other components of Microsoft's "Real World SOA" application platform (e.g., Windows Server, .NET, Visual Studio, SQL Server, and SharePoint) allows organization to implement service-oriented applications which connect and interoperate with a wide range of highly heterogeneous systems, including LOB systems, legacy systems, smart devices, and trading partners.

Microsoft BizTalk now also provides Integrated Support for EDI and AS2 Protocols enabling organizations to extend their integration landscape to include partner and customer systems. BizTalk Server 2009 provides more data exchange options including a native engine that provides integrated support for Electronic Data Interchange (EDI) data (including both X12 and EDIFACT support) and Availability Statement 2 (AS2) data for EDI over the Internet. There are also additional enhancements to B2B accelerators for HIPAA, HL7, SWIFT, and RosettaNet.

Additionally, there are other enhancements, like Comprehensive RFID Platform Infrastructure providing a device abstraction layer and management tools for connecting to Radio Frequency ID (RFID) devices. Also, Broader Enterprise Single Sign-On, building on the Enterprise Single Sign-On (SSO) capabilities by adding a management agent for Microsoft

Identity Integration Server (MIIS) and an MMC snap-in for easier remote management of SSO servers. BizTalk server now, provides a formidable technology and business platform for enterprise integration.

Integration is redefining the way enterprises connect for business - scaling up to the new age market agility is key to growth and competitiveness.

BizTalk: Enterprise Scalability, Mission Critical Middleware

BizTalk currently runs 1000s of business critical, very high throughput messaging solutions. BizTalk's high development productivity, coupled with highly scalable solutions have helped some of the largest enterprises build strong business advantage by building IT capability and quicker time-to-market.

One of the largest investment banks in the world was able to process payments to the tune of approximately 150 billion USD per day.

One of the largest, leading global payments and network companies dealing with credit cards, travel, etc. is using BizTalk to process millions of card requests each month and around 15-20% of these get processed in under 30 minutes.

Integration as a Business Enabling Strategy

Worldwide enterprises have been banking on middleware strategies to leverage IT for creating business advantage. The continuing trend of growth in IT spends over the years is testimony to this. As per some independent analyst reports - Microsoft's share in the middleware market has been rising steadily over the last few years, and is a close second in overall middleware market share.

Before actually looking into integration and its advantages, it is important to understand what operational levers organizations typically need to target through a well managed integration platform for maximizing the value delivered by the overall solution. In this paper, we analyze a few of the operation levers, which need to be supported by the integration platform.

With organizations looking to enter newer product lines, and expand to newer areas, targeting varied customer segments, and point-to-point batch-style integration of traditional IT setup is under increasing stress. This is also compounded by the fact that traditional architecture existing in current enterprises are not really meant to handle the kind of rapid growth expected now in new competitive environments. Challenges like extended operating hours, operations out of multiple geographies, covering multiple time zones, use of best of breed COTS and SAAS Solutions, necessitate a need to look at IT and integration infrastructure as a key business enabler.

An Infosys view on modern integration is clear that a BizTalk based Integration/ESB layer as a middle tier in the architecture will provide the right foundation and the power to achieve all the above mentioned business drivers and objectives thus taking enterprises to the next level in competition.

Isolated App features are just one aspect of enterprise business process – Integrated, real-time & personalized response is key to business sustainability. An integrated business can exponentially enhance efficiency and profitability by leveraging the isle-strength of various LOB apps/ERP systems.

Infosys views the Integration Platform as a key component in the organization landscape providing following the value to IT:

⇒ Cost Effectiveness of the Business

- Reduce the cost of operations
- Reduce the need of capital investment for new business changes
- Reduce the cost for partners to do business with the company
- Align the costs to the returns/business performance from investment justifications

⇒ Ability to Seamlessly Scale to Support the Growth

- Build capability to scale up various components of the operating environment in order to support the demands of the business growth

⇒ Business Experience Quality for all Stakeholders

- Provide best-in-class experience of the business to all involved key stakeholders

⇒ De-risking of Business Continuity and Growth

- Maximize the ability of the enterprise to strategically respond to business continuity/growth risks, both anticipated ones as well as the unexpected ones

⇒ Lead-time to Deliver Business Value

- Reduce the lead-time for delivering business value across value supply chains

BizTalk Adoption Imperatives

Analysis of the Integration Value proposition and the BizTalk server capability clearly underlines the value proposition of BizTalk Server as choice for Integration platform

⇒ Cost Effectiveness of the Business

- Lower Total cost of Ownership: BizTalk server and related implementations are known to have the lowest cost in the industry, over a period of time. Microsoft's promise of continuous releases ensures delivery of innovations to its customers. BizTalk provides a breath of functionality (B2B, BAM, Adapters, and RFID) within the server license. For many small and medium-size customers, the cost of BizTalk is likely to be lesser than the annual maintenance cost of many other middleware products

⇒ Ability to Seamlessly Scale to Support the Growth and De-risking of Business Continuity and Growth

- Microsoft BizTalk server support for standards and focus on performance enhancements makes it an ideal platform providing functional re-use and abstraction through:
 - ✓ SOA support and legacy enablers
 - ✓ Extensibility and Flexibility

- ✓ Multi tenancy for Internationalization
- ✓ Non point-to-point integrations
- ✓ Enhanced Business Process Visibility

⇒ Business Experience Quality for all Stakeholders

BizTalk Server 2009 provides a new implementation for UDM cubes and scalable real-time aggregations with SQL Server 2008 Analysis Services, which enhances the BizTalk Business Activity Monitoring capability for Microsoft Office Business Intelligence (BI) tools across the landscape

⇒ Increased Business efficiency

- By eliminating manual processes, leveraging real time visibility through extensive RFID features

⇒ Lead-Time to Deliver Business Value

- Improve Time to Market: By creating faster composite applications, leveraging industry accelerators like SWIFT, HIPAA, HL7 to reduce time to market, supporting merger and acquisition needs by enabling application interactions quickly

⇒ Gets Maximum Value from your Current Investments

- By avoiding Rip and Replace, leveraging value from existing legacy systems, and eliminating high cost B2B/EDI infrastructure

If gaining greater cost efficiency in IT and IT supported business processes is key to adoption, BizTalk brings strategic advantage to the middleware and process messaging infrastructure.

A snap shot view of the above can be easily articulated as below:

Tangible Cost Savings with BizTalk Server 2009

Based on time-to-market value and typical development cost, the spreadsheet below estimates how a business could save to the tune of \$560,000 in two years by implementing just two enterprise applications with BizTalk Server. Generally, IT departments face a backlog of applications to be developed, so the savings comes from being able to immediately prioritize (rather than go into additional

budget provisioning for hiring etc.) two full-time developers to other critical IT projects, for a full year while the project is enhanced and completely developed and deployed. This embraces the “do more with less” directive that many organizations are following. This gives a strategic cost advantage by allowing additional budget availability for enterprise IT for doing something of more critical value.

Description	Year 1	Year 2
Est. Staff traditionally working on Project-1(Java/.net project)	5	5
Est. development person required for BizTalk version	3	3
Est. Annual fully burdened development cost	\$ 150,000	\$ 150,000
Est. Addl. Annual IT Budget Available using BizTalk	\$ 300,000	\$ 300,000
Est. Application Value (monthly) when Project-1 goes live	\$ 20,000	\$ 20,000
Est. months BizTalk version goes live sooner	2	2
Est. Annual Gain in Application Value using BizTalk	\$ 40,000	\$ 40,000
Est. Cost of BizTalk Server license s (4 procs)	\$ 120,000	\$ -
Est. Total Annual Savings using BizTalk	\$ 220,000	\$ 340,000
Est. Total Addl Budget Available using BizTalk		\$ 560,000

Intangible Cost Savings with BizTalk Server 2009

Testability, maintainability, manageability, supportability, security, scalability, and recoverability are all features and requirements that are rarely budgeted for, but can have enormous hidden costs for the business after an application is launched. Deploying projects that lack these features often results in developers being continually pulled out of subsequent high-priority projects to go back and troubleshoot to resolve production issues. But BizTalk Server 2009 provides strong support for these features (some are built in) and can greatly reduce these hidden costs.

BizTalk Server - Journey to Enterprise Scale Middleware

BizTalk Server has had an exciting evolution from the 2000 to 2009 versions of BizTalk, and Microsoft has constantly been improvising it based on enterprise IT needs and as per new IT trends. This includes packaging of many industry accelerators, and adapters to various product design enhancements. BizTalk Server 2009 comes with Adapter 2.0, EDI Enhancements, ESB Toolkit

The BizTalk Server 2009 R2 is slated to have improved:

- ⇒ **Productivity Improvements:** Single dashboard to apply and manage performance parameters, out-of-the-box support for Event Filtering and Delivery (RFID), PowerShell access to management tasks, New SCOM object model to better reflect BizTalk artifacts
- ⇒ **B2B Scenarios Made Easy:** Mapper enhancements to make complex mapping easier to create and maintain, FTPS to provide secure transactions between businesses, and updated B2B accelerators for latest protocol versions In addition to these BizTalk Server immediate Roadmap has a clear focus on: Enterprise connectivity for AppFabric, Server Service Symmetry and Deep Platform Alignment

BizTalk 2009 also introduces features like **RFID mobile** (BizTalk RFID has been extended to mobile devices), BizTalk Adapter pack (with WCF LOB SDK and Adapter Pack 2), Mainframe integration with Host Integration, Enhanced Support for EDI (BizTalk Server 2009 now has extensively improved EDI support).

BizTalk Server's roadmap is focused on providing **integration capabilities** that are simple to use, **reliable, scalable and secure** and which capitalize on your existing investments too. BizTalk Server 2009 allows customers to connect and interoperate in a wide range of highly heterogeneous systems, including LOB systems, legacy systems, smart devices, and trading partners.

With different memory management enhancements, compatibility to 64 bit Windows, new throttling mechanism (to avoid "out of disk" issues), the performance and capacity of BizTalk server is solely left to architecture and design time considerations and deciding on the right topology. Currently many enterprises are running their core business processes on BizTalk, many have migrated their hitherto large middleware infrastructure to a Microsoft BizTalk based architecture resulting in phenomenal cost savings and performance gains.

There have been cost savings per message ranging from 10 cents to 25 cents across healthcare and banking customers and this has also given business agility and cost resilience to some enterprises by giving an ability to onboard new applications and messaging standards faster and more efficiently (case of a large US healthcare provider). There are numerous examples of similar benefits realized; a snapshot is mentioned in the section below.

Microsoft plans to unleash its 2010 wave of BizTalk Server 2009 R2 as part of "AppFabric".

Platform Support: Visual Studio 2010, Windows Server 2008 R2, SQL Server 2008 R2, Support for TFS for developer productivity

Addressing Business Challenges

BizTalk comes packed with some very strong Industry specific features and accelerators to address some of the known pitfalls and challenges in a majority of the industry verticals. They are designed to build strong cost, business, and timeline advantages for customers and are a key differentiator vis-à-vis many other similar middleware platforms. We shall try looking at a few key industry segments and how BizTalk provides some off-the-shelf advantages in these areas:

Banking & Capital Markets: Microsoft has recently announced the Financial Messaging Service Bus. This is a componentized integration solution for the financial services industry built upon Microsoft BizTalk Server 2009. This provides pre-built service components to simplify mission-critical financial messaging for banks, payment processors and other financial institutions, and provides a solution platform for Microsoft technology partners. This services bus also applies to SWIFT as well as is extensible for all financial messaging systems; this is designed to coexist seamlessly with legacy. The Financial Messaging Service Bus supports Microsoft BizTalk Accelerator for SWIFT, which has been awarded the **SWIFTReady Financial EAI 2009 label**. Additionally, BizTalk accelerator for SWIFT also comes with InterAct and FileAct Adapter to facilitate connection to SWIFTAlliance Gateway.

Some banks were able to grow transactions by up to 30% and cut customer wait time for credit cards by more than 90%, using BizTalk. BizTalk Server 2004 is also used to support banks' financial messaging requirements. The Turkish bank also used BizTalk Accelerator for SWIFT which connects internal applications and generates SWIFT format messages for interbank payments and the settling of securities transactions (http://www.microsoft.com/casestudies/Case_Study_Detail.aspx?casestudyid=49426).

Additionally, some of the partner solutions can save tremendous cost and time in implementing a payment messaging infrastructure for Banks covering almost all Messaging standards. Infosys' "Global Payment Solution" is a ready solution for such needs.

Key to customer expectations and business criticality is middleware's ability to: leverage the existing IT investment, speed of implementation, robust enterprise scale capacity and has a cost and licensing to suit emerging business needs. BizTalk, with its strong foundation on Microsoft technology, sound vision for future integration & BPM needs of enterprises and a reliable and proven network of partners - is the product of choice for those looking to build significant business advantage in the diversified and agile business environment.

Manufacturing: With the markets going global for selling and procurement/supply, the challenges of manufacturers with respect to supply chain efficiency has increased manifold. Gaining efficiency and ability to adapt to new supply lines and processes is key to business growth. The Microsoft RosettaNet Accelerator combines pre-built support for all current RosettaNet Partner Interface Processes (PIPs) along with a suite of development, testing, management, and rapid deployment tools to significantly reduce the time and resources required to build, deploy, and manage RosettaNet-based integration with trading partners, suppliers (including Chemical Industry Data Exchange; CIDX).

Healthcare: Healthcare has become very complicated with the advent of new technologies, new remedies, newer privacy, confidentiality laws and new expectations in terms of medical care and customer expectations. It's not just a life saving trade but also a lifestyle and day-to-day need for millions, the world over. With these new paradigms, healthcare providers have a new set of challenges and opportunities to deal with. Today, many health care providers face the challenge of providing the best clinical care in a complex and costly environment with challenges of cost increases and budget cutbacks, combined with mergers and ongoing staff shortages. Health Level 7 (HL7) is an industry-standard application protocol for electronic data exchange of information. BizTalk Accelerator for HL7 extends the capabilities of BizTalk Server for health care providers by delivering a comprehensive HL7 messaging solution that enables the sharing of patient information within and between health care organizations. BizTalk Accelerator for HL7 delivers enhanced messaging capabilities.

Highlights include: A complete set of schemas for all HL7 v2.x message types and trigger events, flexible and configurable adapter for HL7's Minimal Lower Layer Protocol (MLLP), a configurable auditing component that allows an organization to log access to confidential patient information contained within HL7 messages.

Conclusion

Infosys strongly believes in Microsoft BizTalk 2009 as an enterprise scale middleware platform. Organizations looking for enterprise level middleware or conducting product evaluation for enterprise middleware needs must consider Microsoft Biztalk 2009. BizTalk comes out as a very agile and competent product on some of the key business success parameters in the B2B and middleware space and provides comprehensive integration capabilities to support an organization's ever changing IT landscape. A strong proposition for ROI improvement and creating a competitive advantage through an enterprise class middleware solution.

***Assumptions to consider for the above calculation are given below. These assumptions will allow us to generalize this scenario:**

1. It is assumed that the business expects to generate new "Application Value" as compared to the status quo, regardless of the system and tools used to implement the new version. This Application Value could be achieved through a combination of factors, including: enabling new revenue streams, consolidating servers, increasing performance, or simplifying maintenance. Though it would differ for each business opportunity, this paper arbitrarily uses \$30,000 per month as a placeholder figure.
2. This paper estimates that Project-1 with requirements like: the ability to receive orders via multiple protocols like HTTPS and TCP, and look up within enterprise databases like SQL server, should be able to make a call to SAP or similar LOB applications, log an error if an exception is encountered, should be able to run a query to see all live message instances in the system, and view all historical message request sent to SAP/LOB application. This project could be implemented by five .NET or Java developers in five months. It is estimated that the same system could be developed by two BizTalk developers and one BizTalk Administrator in only three months-two months faster. Both the software license costs and the deployment costs for the BizTalk application are included in the spreadsheet above. For deployment, the full-time BizTalk Administrator would have three months to prepare the production environment while the two BizTalk developers create the solution using the BizTalk Developer Edition included with MSDN Premium. The costs do not include Quality Assurance testing, as those costs would be the same regardless of the programming language used to build Project-1.
3. A pair of dual-processor BizTalk servers is recommended as a minimum for basic fault tolerance and scalability. Typically, customers with higher scalability demands may also have correspondingly higher Application Value estimates, so the savings could increase. SQL Server licensing is not included in these cost comparisons as a relational database system would likely be part of any non-BizTalk alternative as well.
4. This paper does not directly estimate the BizTalk Server learning curve. However, three months for the BizTalk Administrator to install BizTalk Server in the production environment is adequate to also become very familiar with BizTalk Server operations. Also, BizTalk Server extensively uses XML, XSD, XSLT, XPATH, SOAP, WSDL, and other WS* standards, which most application developers are already familiar with regardless of the programming language used to develop this project

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