Vendor Landscape: Application Integration Middleware

Essential plumbing for your applications.

November 11, 2011

INFO~TECH research group

Introduction

In today's IT environment, organizations often have numerous applications communicating with each other chaotically. Middleware streamlines that communication process, providing maximum integration benefits.

This Research Is Designed For:

- ✓ Enterprises struggling with interoperability between applications.
- ✓ Application integration professionals that need to:
  - Share data and business processes internally and externally.
  - Connect legacy systems to cutting edge, new technology developments.
  - Identify a comprehensive unified suite that incorporates an easy-to-use development tool, ensures scalability, and improves business processes.

This Research Will Help You:

- ✓ Understand what's new in the application integration middleware market.
- ✓ Evaluate middleware vendors and products for your enterprise needs.
- ✓ Determine which products are most appropriate for particular use cases and scenarios.

Executive Summary

Info-Tech evaluated seven competitors in the Application Integration Middleware market, including the following notable performers:

Champion:

- **IBM WebSphere Message Broker** has evolved and matured into a comprehensive middleware portfolio with a strong product focus. Backed by IBM, a leader in innovation, WebSphere Message Broker has a solid sales and support network.

Market Pillar:

- **Microsoft BizTalk** provides strong performance and advanced features bundled into an easily configurable, all-in-one solution.

Value Award:

- **Red Hat's JBoss** subscription offering provides a quality product at a reasonable price. Strong channel backing and a comprehensive support organization make its solution one of the most cost competitive.

Innovation Award:

- **Oracle's** newly revamped product line, which includes a deeply integrated portfolio, offers flexible solutions with comprehensive feature sets for organizations.

Info-Tech Insight

1. **Connecting legacy to the latest:** Middleware has become a critical tool for IT departments that are dealing with growth in the number of applications. It allows companies to continue benefiting from legacy systems while connecting with the latest technology developments that drive business growth.

2. **Bundling for scalability:** Vendors have begun to bundle their product offerings into a single platform that often doesn't require users to write a single line of code. Companies can still mix-and-match, but the trend is moving towards platforms that provide all the initial services required and enable scalability for future growth.

3. **Choosing the right product:** While all middleware technology performs similar functions, each product has its own strengths and weaknesses. The middleware platform or combination of products that a company chooses will depend on exactly what features are required to enable interoperability.

Market Overview

How it got here

- With the explosion in new transactional, communication, social networking, and distribution systems, companies began to face challenges in how to connect these new applications to older, legacy systems. The 1980s IT solution was to design your own software to bridge those gaps.
- The shortcomings to that solution were quickly recognized as organizations attempted to share system services internally and with other organizations. The task of translating and maintaining internal and external messages and protocols became unmanageable. With the ongoing integration of new systems, the challenge of how to share information increased. In 1992, IBM introduced its game-changing MQ Series.
- Enter Enterprise Application Integration software, a.k.a middleware. With the rapid maturity of solutions from IBM, Oracle, and TIBCO, the ability to create interoperability between applications has been addressed.

Where it's going

- Middleware, although not as sexy as some of its technology counterparts, has become a strategic weapon for competing in today's business environment. As a result of constantly evolving technology, modern middleware will see a surge in demand in the coming years.
- In order to work more efficiently, provide better service quality to customers, improve business processes, and future-proof technology investments, more organizations will use middleware to connect legacy systems to newer, more innovative applications.
- Middleware is the future of integration. It is constantly changing, adapting, and progressing. IBM's and Oracle's product lines have begun to blur the lines between middleware software, data integration software, business process management software, and on-demand service offerings.

Info-Tech Insight

As the market evolves, capabilities that were once cutting edge become default and new functionality becomes differentiating. Representational State Transfer (REST) has become a Table Stakes capability and should no longer be used to differentiate solutions. Instead, focus on HTML5 compatibility, mobility features, and XTP platforms to get the best fit for your requirements.

Middleware Vendor Landscape selection/knock-out criteria: Market share, mind share, and scalability

- In recent years, middleware has shifted from a niche technology to convention for many enterprises wanting to facilitate business innovation and drive new business growth. As the technology landscape continues to evolve in response to the competitive environment, greater emphasis will be placed on middleware deployments.
- For this Vendor Landscape, Info-Tech focuses on those vendors that have a strong market presence and/or reputational presence among small to mid-sized enterprises.

Included in the Vendor Landscape:

- **IBM:** WebSphere Message Broker is an intermediary program that enables business information to flow between different services and applications from a wide range of platforms.
- **Microsoft:** BizTalk Server provides a solution that enables organizations to easily integrate diverse internal and external core systems utilizing over 25 multi-platform adapters.
- **Oracle:** Fusion Middleware is an integrated suite of middleware products that create a unified system that supports compatibility with third-party products.
- **Progress:** Sonic ESB is a messaging-based enterprise service bus that allows programs to integrate with one another in reliable, secure, and scalable way.
- **Red Hat:** JBoss Enterprise is a java-based, open source, platform independent middleware product that is usable on any operating system that supports Java.
- **Software AG:** webMethods Integration Server is a scalable, standards-based platform that combines a messaging bus with an extensive library of adapters to seamlessly integrate business applications.
- **TIBCO:** Rendezvous is a middleware product that supports publish/subscribe, request/reply, and point-to-point messaging using a broad library of pre-built adapters that connect with a number of system platforms.

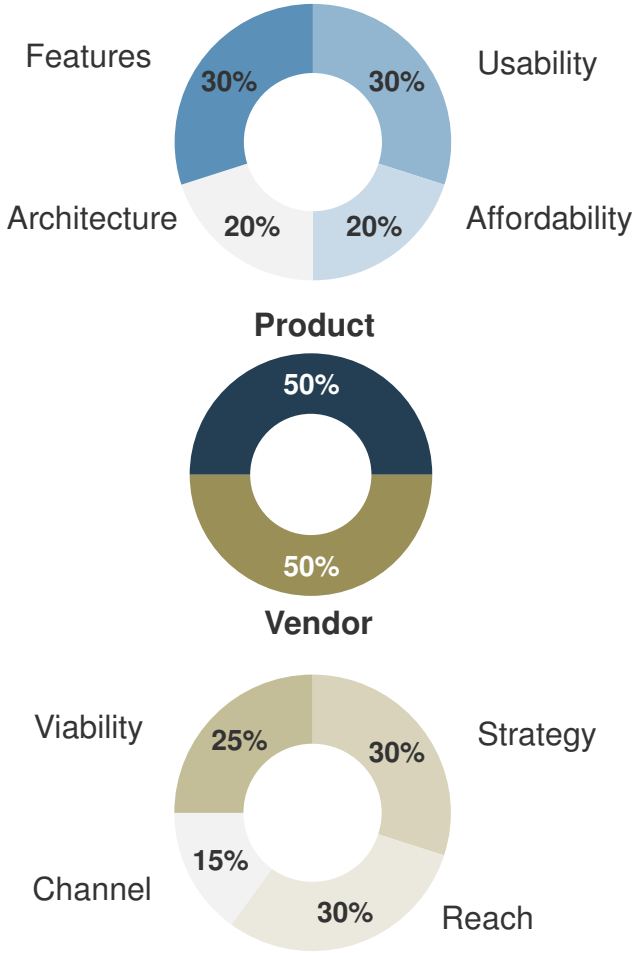
Middleware Criteria & Weighting Factors

Product Evaluation

Features	The solution provides basic and advanced feature/functionality.
Affordability	The five year TCO of the solution is economical.
Usability	The solution's dashboard and reporting tools are intuitive and easy to use.
Architecture	The delivery method of the solution aligns with what is expected within the space.

Vendor Evaluation

Viability	Vendor is profitable, knowledgeable, and will be around for the long-term.
Strategy	Vendor is committed to the space and has a future product and portfolio roadmap.
Reach	Vendor offers global coverage and is able to sell and provide post-sales support.
Channel	Vendor channel strategy is appropriate and the channels themselves are strong.



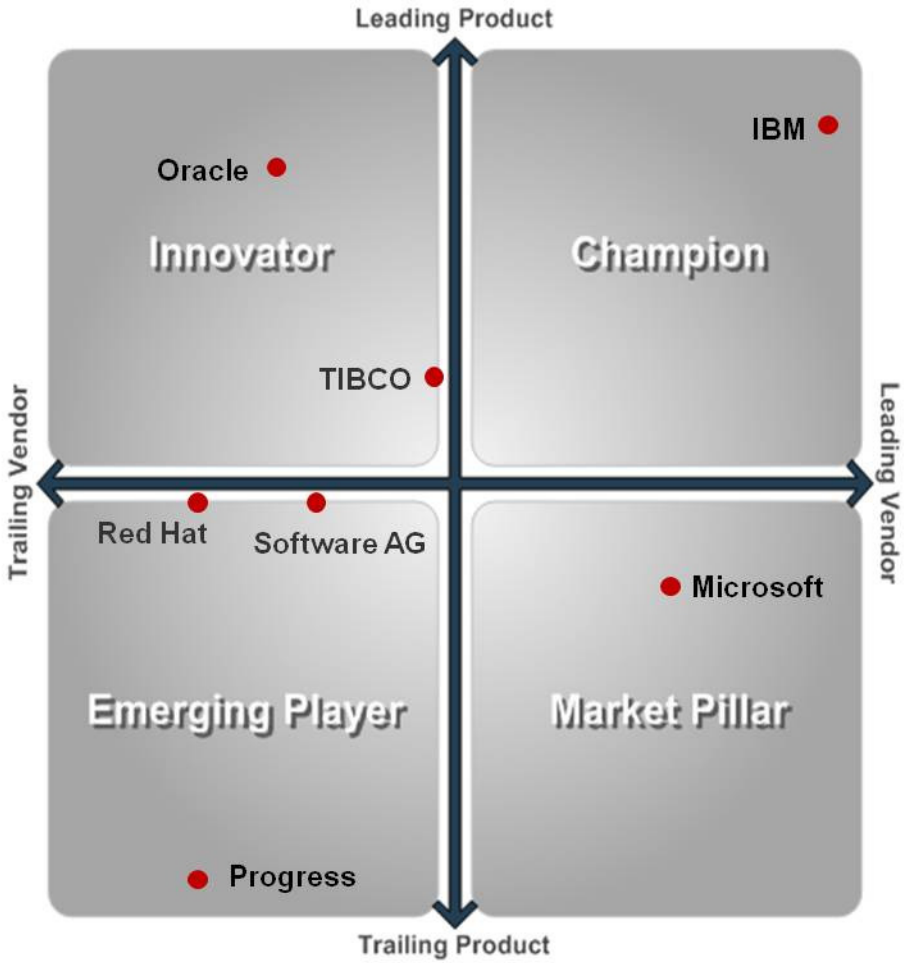
The Info-Tech Middleware Vendor Landscape

Champions receive high scores for most evaluation criteria and offer excellent value. They have a strong market presence and are usually the trend setters for the industry.

Innovators have demonstrated innovative product strengths that act as their competitive advantage in appealing to niche segments of the market.

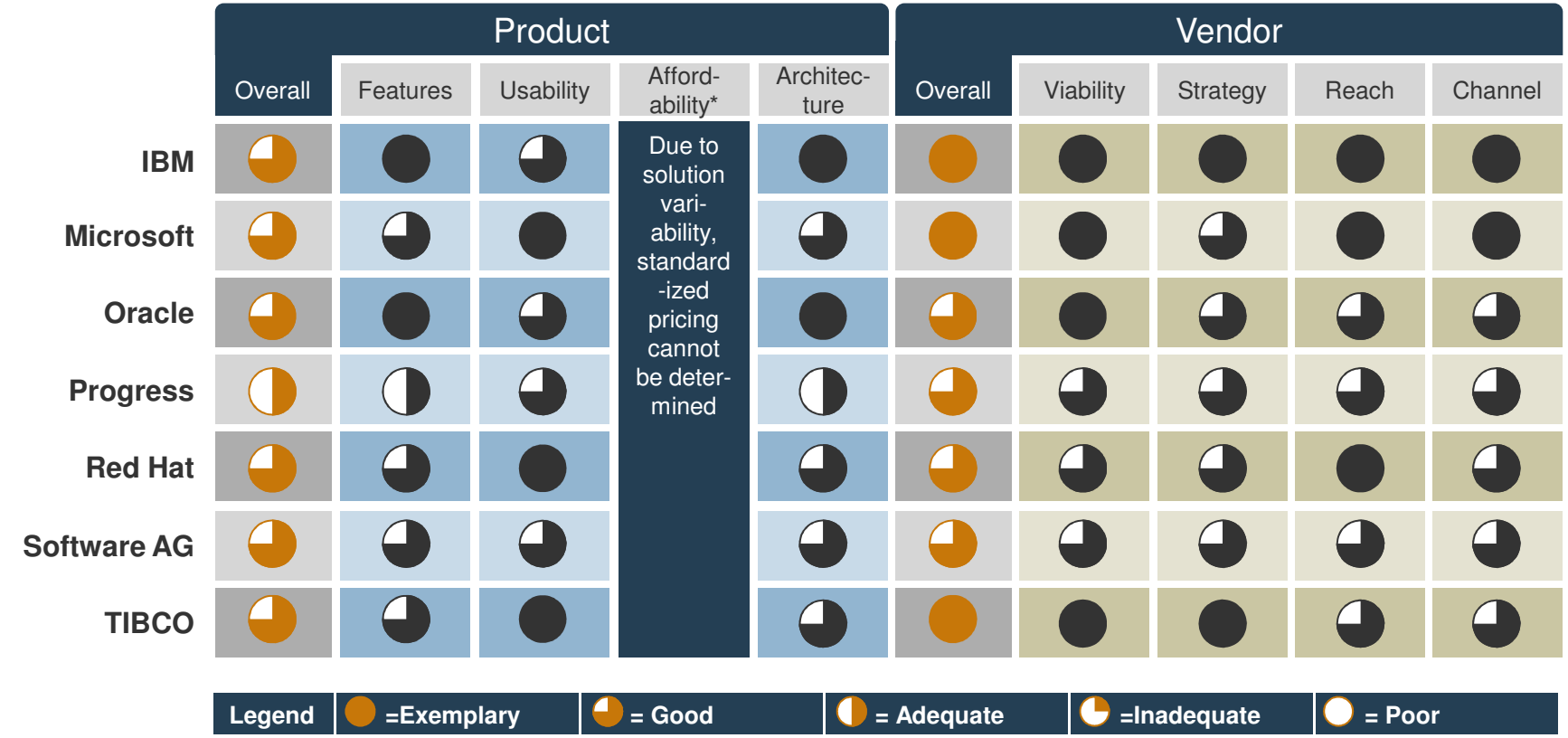
Market Pillars are established players with very strong vendor credentials, but with more average product scores.

Emerging Players are newer vendors who are starting to gain a foothold in the marketplace. They balance product and vendor attributes, though score lower relative to market Champions.



For an explanation of how the Info-Tech Vendor Landscape is created, please see the slide entitled "Vendor Evaluation Methodology" in the appendix.

Every vendor has its strengths & weaknesses; pick the one that works best for your organization



For an explanation of how the Info-Tech Harvey Balls are calculated please see the slide entitled "Vendor Evaluation Methodology" in the appendix.
*Due to solution variability, standardized pricing cannot be determined.

Info-Tech Insight

Major influencers on overall result are Features *and* Usability from the Product criteria, and Viability *and* Reach from the Vendor criteria.

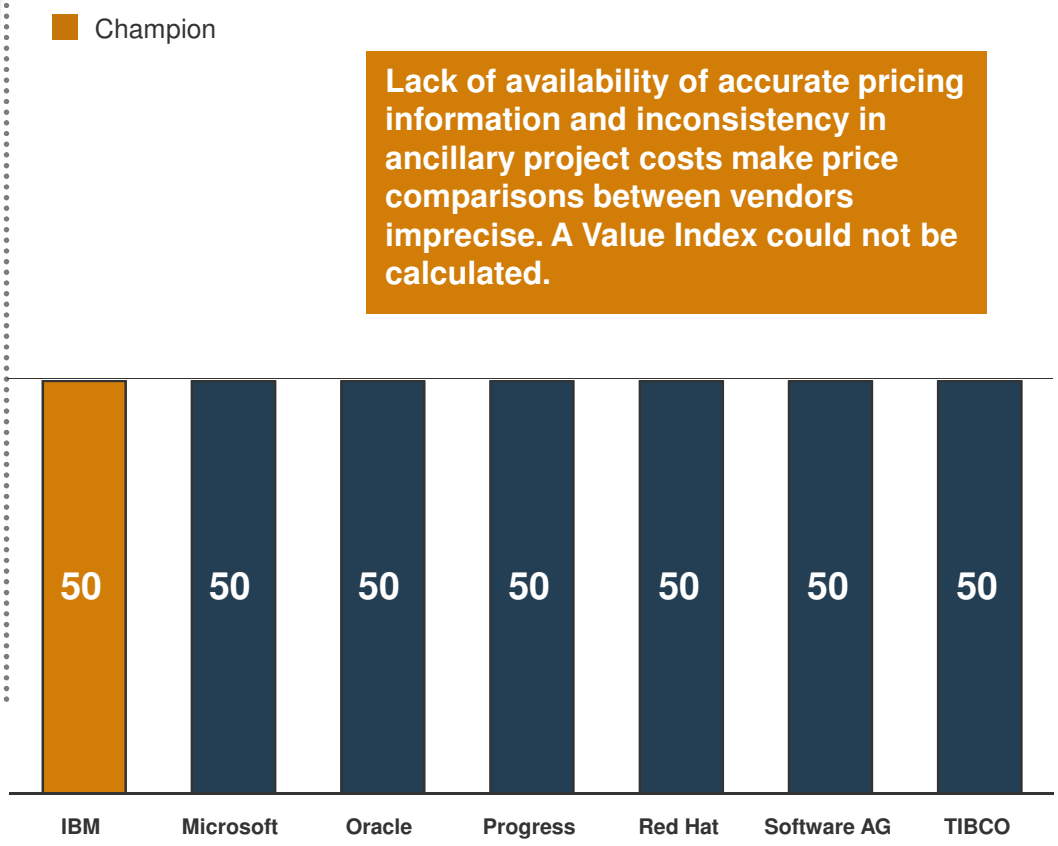
The Application Integration Middleware Value Index

What is a Value Score?

The Value Score indexes each vendor's product offering and business strength **relative to its price point**. It **does not** indicate vendor ranking.

Vendors that score high offer more **bang for the buck** (e.g. features, usability, stability, etc.) than the average vendor, while the inverse is true for those that score lower.

Price-conscious enterprises may wish to give the Value Score more consideration than those who are more focused on specific vendor/product attributes.



For an explanation of how the Info-Tech Value Index is calculated please see the slide entitled "Value Index Ranking Methodology" in the appendix.

Table Stakes represent the minimum standard; without these a product doesn't even get reviewed

The Table Stakes

Feature	Description
Communication and Authentication protocols	Communication and authentication protocols provide identity verification, allow resources to communicate with one another, and ensure the secure exchange of data.
XML / Web Services	Platform-independent, standardized way to integrate communication protocols between applications.
Event Based/Driven Programming	Programming concept where the logical flow is determined by events from either the user or other technologies.
Representational State Transfer (REST)	REST defines a client/server software architecture that provides statelessness with self describing services.

What Does This Mean?

The products assessed in this Vendor Landscape™ meet, at the very least, the requirements outlined as Table Stakes.

Many of the vendors go above and beyond the outlined Table Stakes, some even do so in multiple categories. This section aims to highlight the product's capabilities **in excess** of the criteria listed here.

Info-Tech Insight

If Table Stakes are all you need from your application integration middleware solution, the only true differentiator for the organization is price. Otherwise, dig deeper to find the best price to value for your needs.

Advanced Features are the market differentiators that make or break a product

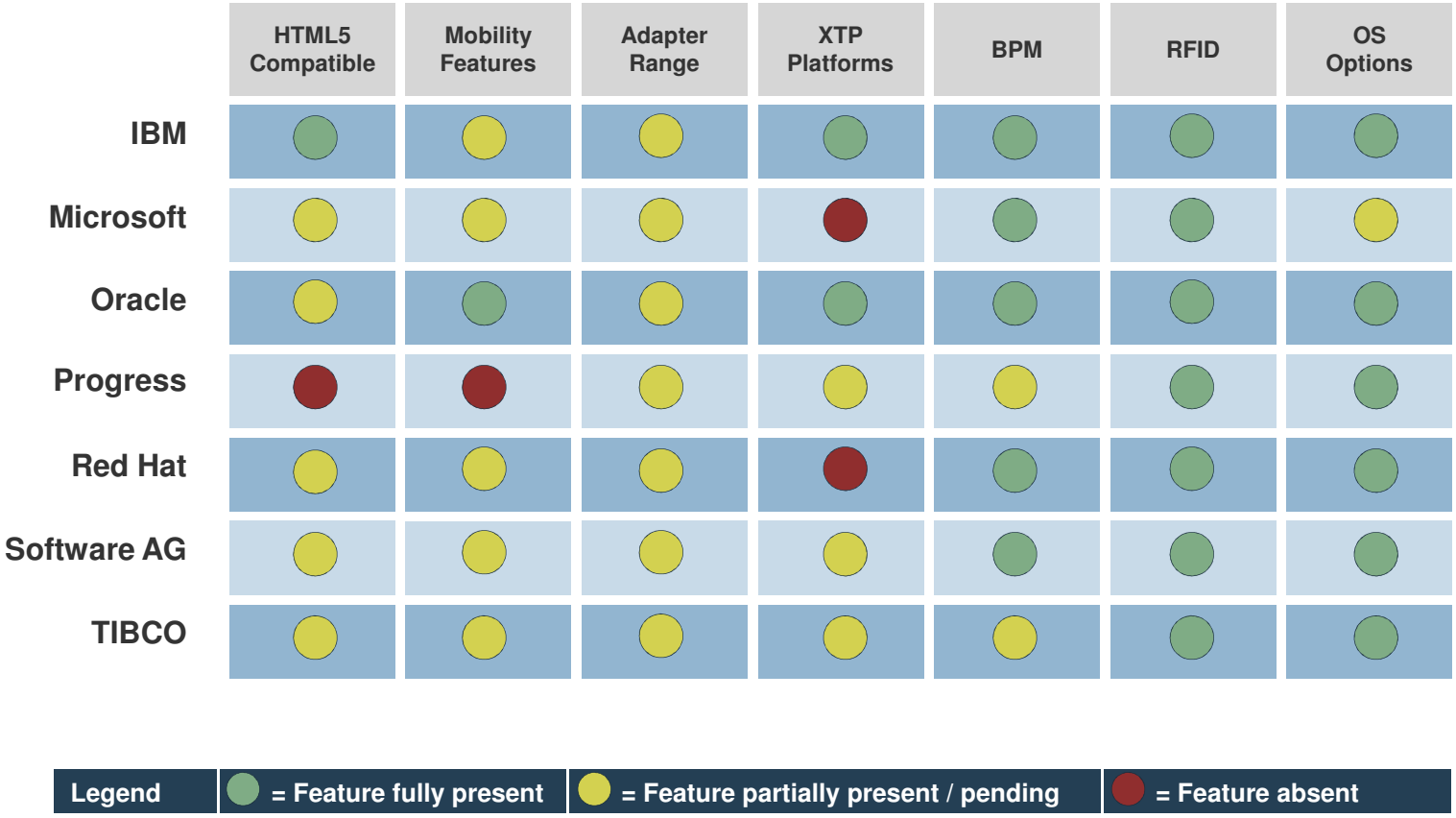
Scoring Methodology

Info-Tech scored each vendor's features offering as a summation of its individual scores across the listed advanced features. Vendors were given one point for each feature the product inherently provided. Some categories were scored on a more granular scale with vendors receiving half points.

Advanced Features

Feature	What We Looked For
HTML5 Compatible	HTML5 is the newest version of a Web language that includes enhanced features for the placement of graphics, video, and audio on the Web.
Mobility Features	Allows for connectivity and communication of enterprise application functionality via a mobile device.
Adapter Range	Breadth of adapters, scalability, and compatibility with platforms.
Extreme Transaction Processing (XTP) Platforms	Capability of applications processing transactions that must move substantial amounts of quickly-changing data from a number of different sources under extremely demanding requirements.
Business Process Management	Set of software tools to aid in the efficiency, execution, and optimization of enterprise business processes.
RFID (Radio Frequency Identification)	Enabling highly scalable integration with RFID devices.
Operating System Options	Support across multiple operating systems - Unix, Linux, Windows, AIX, HP-UX.

Each vendor offers a different feature set; concentrate on what you need from your middleware solution



IBM has expanded its sphere of dominance with the latest middleware offering

Champion

Product:	WebSphere Message Broker
Employees:	427,000
Headquarters:	Armonk, NY
Website:	www.ibm.com
Founded:	1911
Presence:	NASDAQ: IBM FY10 Revenue: $5.8B

Due to solution variability, standardized pricing cannot be determined.

Overview

- WebSphere Message Broker is a platform-independent Enterprise Service Bus that allows universal connectivity and flow of business information across multiple hardware and software platforms.
- Simplifies application integration in a Service Oriented Architecture.

Strengths

- Highly customizable, capable of integrating with data on over 80 platforms through its wide range of connectivity and underlying messaging capability, which makes integration intuitive.
- Enhanced connectivity in .NET environments using Microsoft Visual Studio.
- XML isn't required for data parsing and transformation; it uses just in time and partial parsing technology, which can improve performance.

Challenges

- Ambiguity issues can arise due to conflicting product sets and a number of differently supported product platforms to choose from.
- Latest release has improved install times and productivity aids, but implementation still requires knowledge and experience.
- Solution is aimed mainly at larger companies that can afford the higher ticket price.

Info-Tech Recommends:

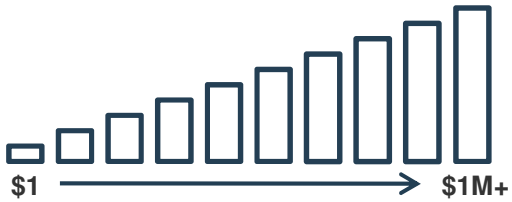
The WebSphere product family has a broad set of offerings that are appropriate for enterprises with a large scale SOA infrastructure.

Oracle's acquisition of Sun Microsystems puts the technology giant smack in the middle of middleware

Innovator

Product:	Fusion Middleware
Employees:	108,000
Headquarters:	Redwood Shores, CA
Website:	www.oracle.com
Founded:	1977
Presence:	NASDAQ: ORCL FY10 Revenue: $2.99B

ORACLE
FUSION MIDDLEWARE



Due to solution variability, standardized pricing cannot be determined.

Overview

- Oracle Fusion Middleware is a standards-based unified portfolio of products that is easily integrated with existing third-party applications and systems. It features "hot-pluggable" architecture that enables rapid deployment into existing IT infrastructures.

Strengths

- Although the system provides the value of a deeply integrated suite, each product can be deployed as a stand-alone – flexibility allows the various components to be utilized as modular or interoperable elements.
- Includes JDeveloper, the flagship programming toolkit, used to build and customize rich internet applications.
- The Identity Management component provides administration for identity and access management, enabling a more secure and reliable SOA environment.

Challenges

- Oracle's history of acquiring outside technology and integrating it with its own can lead to inconsistencies within the product line.
- Full benefits of the solution are only realized when Oracle-supplied components are used. The process can break down if non-Oracle products enter the mix.

Info-Tech Recommends:

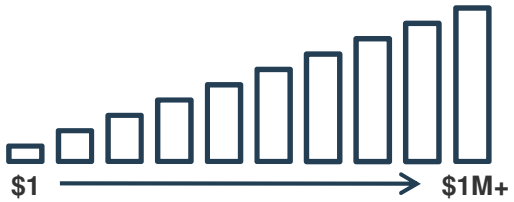
Organizations that are "Oracle shops," or that require a deeply integrated, large scale solution, should consider Fusion Middleware.

TIBCO is a focused integration vendor that provides a strong messaging foundation for business applications

Innovator

Product:	Rendezvous Messaging
Employees:	2,300
Headquarters:	Palo Alto, CA
Website:	www.tibco.com
Founded:	1997
Presence:	NASDAQ: TIBX FY10 Revenue: $502M

TIBCO®
The Power of Now®



Due to solution variability, standardized pricing cannot be determined.

Overview

- Rendezvous software is an event-driven middleware solution based on a distributed architecture. The product is employed on a bus configuration which enables the exchange of data across various applications and platforms via messaging.

Strengths

- Uses a distributed architecture which helps to avoid bottlenecks and single points of failure.
- Messages can be sent based on request/reply or multi cast publish/subscribe models, which enables network scalability.
- Connecting applications can choose to encrypt messages sent locally or via a WAN or the Internet.
- The self-describing messages can be utilized across multiple platforms and are supported with a user-extensible type system.

Challenges

- As Rendezvous software is only fully integrated with other TIBCO products, compatibility issues may arise in non-TIBCO environments.
- Rendezvous messages are transported via TIBCO's proprietary TRDP protocol rather than the industry standard XML or SOAP.

Info-Tech Recommends:

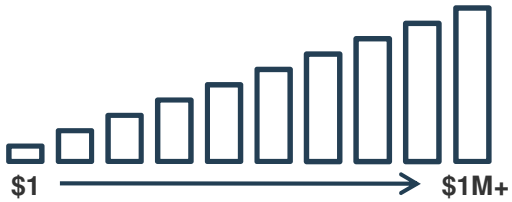
The TICBO platform is a good fit for the enterprise looking for a reliable, easy to manage integration solution.

Microsoft offers a solid integration product, but the learning curve can be quite steep

Market Pillar

Product:	BizTalk Server
Employees:	90,000
Headquarters:	Redmond, WA
Website:	www.microsoft.com/biztalk
Founded:	1975
Presence:	NASDAQ: MSFT FY10 Revenue: $875.4M

Microsoft® BizTalk® Server



Due to solution variability, standardized pricing cannot be determined.

Overview

- BizTalk Server is a scalable, strategic tool that provides a solution for integrating business systems and connecting existing core applications with relatively little custom code authoring, regardless of the platform.

Strengths

- System connects to proprietary and standards based systems, integrates seamlessly with the .NET framework, and is easily customizable using .NET technologies.
- Universal translator using XML and XML-based schemas that enable effortless interaction between systems and organizations.
- Ships with adaptors compatible with most major platforms; adaptors can be customized to interact with internal proprietary systems.

Challenges

- Don't underestimate the learning curve; real, hands-on training will be required for BizTalk developers.
- Upgrading to newer BizTalk versions can be an issue as new adaptors may be required, potentially creating a reprogramming situation.

Info-Tech Recommends:

The platform compatibility of the adapters makes communication between applications relatively simple. If application integration is a priority within your enterprise, BizTalk is worth a look.

JBoss subscription model makes it a viable alternative to purchasing higher priced competitor solutions

Emerging Player

Product:	JBoss by Red Hat
Employees:	3,800
Headquarters:	Raleigh, NC
Website:	www.jboss.com
Founded:	1993
Presence:	NASDAQ: RHT FY10 Revenue: $281.3M

Due to solution variability, standardized pricing cannot be determined.

Overview

- JBoss Enterprise is an open source middleware solution that is subscription based. It offers businesses the flexibility to mix and match integrated platforms and plug-and-play frameworks to build, deploy, and integrate applications in a Service Oriented Architecture.

Strengths

- Available via subscription that includes software, support, updates and patches, and multi-year maintenance packages.
- Messaging failover and session replication are key features of the core application; clustering capabilities maintain transaction reliability. Can handle mission critical applications.
- Newest release includes features to automate real time rules-based decisions, and complex event processing, which aid in streamlining and improving quality in business operations.

Challenges

- Isn't easily configurable after downloading. Depth in programming knowledge is required.
- Performance and application monitoring tools are fairly basic.
- Relies on third-party tools as it isn't a component of an integrated platform.

Info-Tech Recommends:

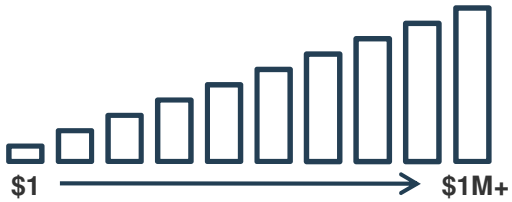
Excels in the finance and eBusiness industry. If day-to-day enterprise operations include banking or retail online transactions, JBoss's middleware solution might be a good bet.

webMethods offers a deep product portfolio that combines stand-alone solutions within an integrated solution

Emerging Player

Product:	webMethods Integration Server by Software AG
Employees:	5,700
Headquarters:	Darmstadt, Germany
Website:	www.softwareag.com
Founded:	1969
Presence:	Frankfurt TecDAX: SOW FY10 Revenue: $1.5B

webMethods



Due to solution variability, standardized pricing cannot be determined.

Overview

- webMethods Integration Server is a standards-based Enterprise Service Bus that supports integration with Web services, packaged applications, legacy applications, and more. The platform includes both service-oriented architecture and business process management.

Strengths

- The recent acquisition of Metismo Ltd. will enable webMethods to incorporate Metismo's mobile application technology directly into the webMethods integration suite of products.
- The platform consists of a number of independent products that are tightly integrated. Each component can work as a stand-alone, or interconnect with other components within the integrated suite. This enables the platform to grow with the company.

Challenges

- Flow, the webMethods proprietary development language, can make development easier. However, there are some predictable limitations: advanced developers who prefer a text editor will find it click-heavy, complex code can be difficult to understand and refactor, platform migration will require redevelopment.

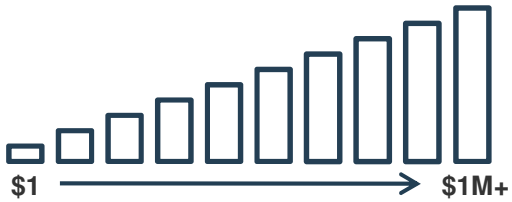
Info-Tech Recommends:

webMethods is a single, integrated platform with over a decade of evolution. Most of the products have been developed internally, so the platform components scale with the needs of the organization.

Although Sonic claims to have coined the phrase Enterprise Service Bus, it still struggles with a lack of brand awareness

Emerging Player

Product:	Sonic ESB by Progress
Employees:	1,900
Headquarters:	Bedford, MA
Website:	www.progress.com
Founded:	1981
Presence:	NASDAQ: PRGS FY10 Revenue: $128.7M



Due to solution variability, standardized pricing cannot be determined.

Overview

- Sonic ESB is a messaging-based Enterprise Service Bus that simplifies the integration of business applications within a service-oriented architecture. Sonic ESB leverages open, standards-based programming models which enable systems to interact more reliably and provide assured delivery of communications.

Strengths

- Progress's patented Continuous Availability Architecture delivers zero-downtime upgrades and patches from a centralized location.
- Sonic ESB is built on a messaging infrastructure, so its architecture can be utilized across the corporate LAN or the Internet with relative ease.
- Interactive drag-and-drop IDE to aid with process modeling and debugging.

Challenges

- In order to be a complete enterprise solution, Sonic ESB needs additional support from other components, resulting in increasing costs.
- With recent turnover in upper management, Progress/Sonic's future upgrades and long-term goals may be uncertain.

Info-Tech Recommends:

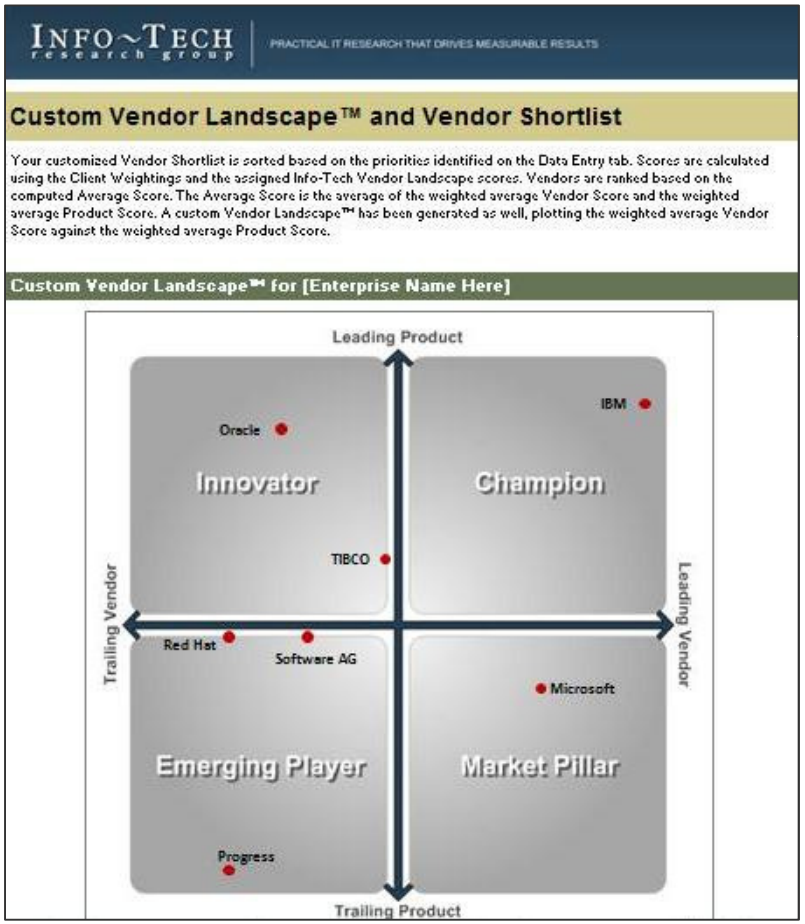
Sonic ESB can be extremely useful for enterprises looking to integrate in stages. The bus model enables projects to start small and grow according to enterprise needs.

Identify leading candidates with the *Application Integration Middleware Vendor Shortlist Tool*

Info-Tech's *Application Integration Middleware Vendor Shortlist Tool* is designed to generate a customized shortlist of vendors based on *your* key priorities.

This tool offers the ability to modify:

- Top-level weighting of product vs. vendor criteria
- Individual product criteria weightings:
  - ✓ Features
  - ✓ Usability
  - ✓ Affordability
  - ✓ Architecture
- Individual vendor criteria weightings:
  - ✓ Viability
  - ✓ Strategy
  - ✓ Reach
  - ✓ Channel



If Integrated Development Environments are key to the effectiveness of your team

Microsoft's solution brings together several languages with developer support for Web, client-server, mobile, reporting, analytics, and integration.

1 **Integrated Development Environment**

2 Microsoft Platform

3 Java Platform

Exemplary Performers

Microsoft BizTalk Server

Viable Performers

JBoss by Red Hat

IBM WebSphere

ORACLE FUSION MIDDLEWARE

PROGRESS software

TIBCO The Power of Now

webMethods.

Adequate Performers

If your infrastructure platform is structured around Microsoft .NET technology

Finding the closest fit with a .NET architecture will provide you with the most seamless integration when operating on a Microsoft platform.

1 Integrated Development Environment

2 Microsoft Platform

3 Java Platform

Exemplary Performers

Microsoft BizTalk Server

IBM WebSphere

Viable Performers

JBoss by Red Hat

ORACLE FUSION MIDDLEWARE

TIBCO The Power of Now

webMethods.

PROGRESS software

Adequate Performers

If your infrastructure runs on a Java programming platform

Ease of integration, compatibility with existing systems, and scalability are things to keep in mind when selecting your vendor product solution.

1 Integrated Development Environment

2 Microsoft Platform

3 Java Platform

Exemplary Performers

Viable Performers

Adequate Performers

Appendix

1. Vendor Evaluation Methodology
2. Value Index Ranking Methodology

Vendor Evaluation Methodology

Info-Tech Research Group's Vendor Landscape market evaluations are a part of a larger program of vendor evaluations which includes Solution Sets that provide both Vendor Landscapes and broader Selection Advice.

From the domain experience of our analysts as well as through consultation with our clients, a vendor/product shortlist is established. Product briefings are requested from each of these vendors, asking for information on the company, products, technology, customers, partners, sales models, and pricing.

Our analysts then score each vendor and product across a variety of categories, on a scale of 0-10 points. The raw scores for each vendor are then normalized to the other vendors' scores to provide a sufficient degree of separation for a meaningful comparison. These scores are then weighted according to weighting factors that our analysts believe represent the weight that an average client should apply to each criteria. The weighted scores are then averaged for each of two high level categories: vendor score and product score. A plot of these two resulting scores is generated to place vendors in one of four categories: Champion, Innovator, Market Pillar, and Emerging Player.

For a more granular category by category comparison, analysts convert the individual scores (absolute, non-normalized) for each vendor/product in each evaluated category to a scale of zero to four whereby exceptional performance receives a score of four and poor performance receives a score of zero. These scores are represented with "Harvey Balls," ranging from an open circle for a score of zero to a filled in circle for a score of four. Harvey Ball scores are indicative of absolute performance by category but are not an exact correlation to overall performance.

Individual scorecards are then sent to the vendors for factual review, and to ensure no information is under embargo. We will make corrections where factual errors exist (e.g. pricing, features, technical specifications). We will consider suggestions concerning benefits, functional quality, value, etc; however, these suggestions must be validated by feedback from our customers. We do not accept changes that are not corroborated by actual client experience or wording changes that are purely part of a vendor's market messaging or positioning. Any resulting changes to final scores are then made as needed, before publishing the results to Info-Tech clients.

Vendor Landscapes are refreshed every 12 to 24 months, depending upon the dynamics of each individual market.

Value Index Ranking Methodology

Info-Tech Research Group's Value Index is part of a larger program of vendor evaluations which includes Solution Sets that provide both Vendor Landscapes and broader Selection Advice.

The Value Index is an indexed ranking of value per dollar as determined by the raw scores given to each vendor by analysts. To perform the calculation, Affordability is removed from the Product score and the entire Product category is reweighted to represent the same proportions. The Product and Vendor scores are then summed, and multiplied by the Affordability raw score to come up with Value Score. Vendors are then indexed to the highest performing vendor by dividing their score into that of the highest scorer, resulting in an indexed ranking with a top score of 100 assigned to the leading vendor.

The Value Index calculation is then repeated on the raw score of each category against Affordability, creating a series of indexes for Features, Usability, Viability, Strategy and Support, with each being indexed against the highest score in that category. The results for each vendor are displayed in tandem with the average score in each category to provide an idea of over and under performance.

The Value Index, where applicable, is refreshed every 12 to 24 months, depending upon the dynamics of each individual market.