

Impact Korea 2010

비즈니스 및 IT 리더를 위한 최고의 컨퍼런스



TCO와 ROI 한 번에 해결하기

- Migration to WebSphere

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WebSphere Competitive Strategy

Discover. Interact. Optimize.



The last 18 months.....

450 customers have taken a decision to move their infrastructure to the IBM platform effectively migrating

- What was their motivation?
- How has their experience been?
- What was the process they followed?

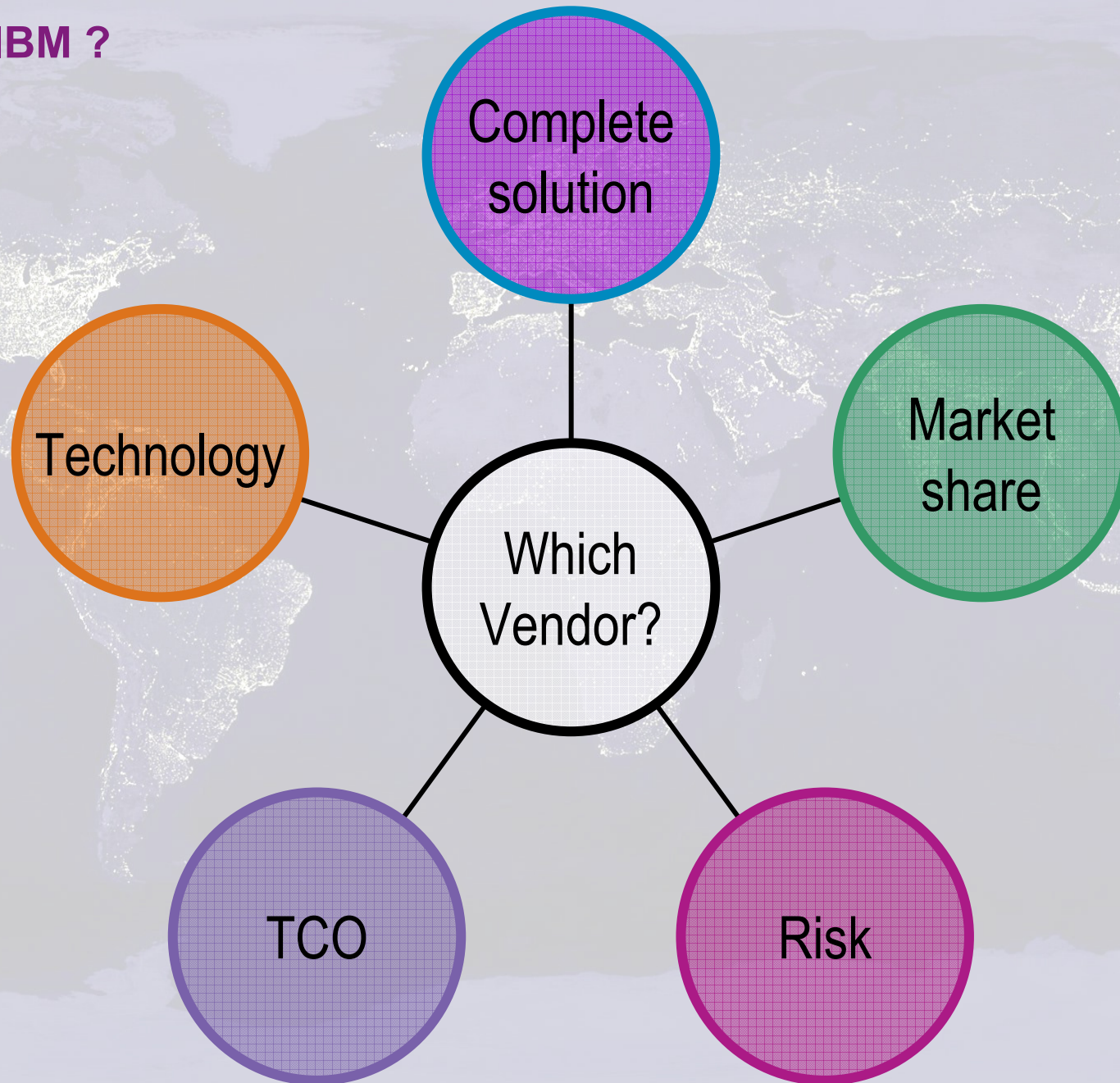
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Why IBM ?



WebSphere Virtual Enterprise (WSVE)

Source: Based on 35+ Operations Optimization Value Assessments done to date by IBM

Co\$t reduction

Hardware Admin. Software Business

Grid Based Application Virtualization

Allows multiple applications to share a common pool of servers maximizing utilization of server resources

Hardware	Admin.	Software	Business
✓ 25-40%	✓ 35-55%	✓	Power cost 25-40%

Goals-Directed Infrastructure, Autonomic Management and Self Healing

Policy driven runtime reduces business costs directly tied to application downtime, contractual penalties for SAL failures. Health monitoring for large grids. Multiple modes of operation, including manual, supervised and on demand

Hardware	Admin.	Software	Business
	✓ 45-50%		✓ Reduced outages 98%

Extreme Performance

OLTP, batch, compute intensive workloads. Distributed transactional cache. Eliminates need to build and maintain code required to support highly transaction intensive applications

Hardware	Admin.	Software	Business
✓		✓	

Support for multiple types of applications

Custom built J2EE for WebSphere, WebLogic, JBoss, Tomcat, Geronimo, etc. Generic HTTP endpoints, PHP apps, WebSphere Portal, WebSphere Commerce, WebSphere Process Server, WebSphere ESB, WebSphere Registry and Repository, etc.

Hardware	Admin.	Software	Business
✓	✓	✓	

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The Migration Process

- Initial Sales Contact
- Discovery
 - Discovery visit or call
 - Complete Pre-assessment Questionnaire
 - Create SOW for Assessment
- Assessment **← The Key to Success**
 - Review requirements
 - Review code
 - Deliver Assessment Report **← Sales as well as Technical function**
 - Create SOW for Migration
- Migration
 - Install needed software
 - Make architecture changes as needed
 - Migrate code
- Deployment
 - Integration, test, go live

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Steps to Conducting a WebSphere Migration

- **Phase I: Discovery Call**
 - **Goal:** To provide a high-level understanding of migration options. Recommend the appropriate assessment or next steps.
- **Phase II: Migration Assessment**
 - **Goal:** To provide accurate estimates for migrating all the appropriate applications in a 'like for like' fashion from the current application server to IBM WebSphere Application Server.
 - **Steps:** The migration assessment would contain the following major steps:
 - A. Application Business and Functional Review
 - B. Application Architectural Review
 - C. Application Source Code Review
- **Phase III: Full Migration**
 - **Goal:** To migrate all applications from the current application server to WebSphere Application Server, resulting in equivalent or improved functionality, performance and scalability.
 - **Steps:** The migration work includes the following major steps:
 - A. Install and configure all environments and tools.
 - B. Migrate code to the new environment. Performance tuning of applications.
 - C. Perform End to End Testing (Link Testing) and defect resolution.

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WebSphere Migration Phase I: Discovery Call

- Review current IT infrastructure and project goals
- Typically 30 minutes
- Agenda items for the technical discovery call could include:
 - Basic Infrastructure
 - Operating Systems
 - Databases
 - Legacy connectivity
 - Current IT Environment
 - Number of artifacts
 - J2EE spec level
 - Third-party application integration
 - Application Server Requirements
 - Security
 - Development and Deployment
 - Clustering and Load balancing
 - Projected Additional Requirements
 - Portal
 - Etc.

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WebSphere Migration Phase II: Migration Assessment

- **The Migration Assessment is the most important step**
- Given enough time, any competent J2EE developer can migrate an application from one application server to another
 - There are best practices and techniques to improve quality and reduce effort
 - Even without these the project will usually succeed
- This week we will focus on the Assessment process
 - Establish credibility with the client
 - ACCURATELY estimate the effort – The goal is to not underbid or overbid
- The goal of the assessment has 2 purposes:
 - Understand the application and the effort to migrate it
 - Demonstrate to the client that we understand the problem and have the solution
- The Key to Success is the Migration Report

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Migration Assessment Details

- **Step A: Application Business and Functional Review**
 - Required Client Resource: Application Business Analyst
 - Topics of discussion
 - High level application description and feature set
 - Typical end user profile
 - Scale of usage
 - “Nonfunctional” requirements (uptime, reliability, security, etc.)
 - Business impact
 - Client Governance and Documentation Requirements
 - Results / Output
 - Application usage profile



Migration Assessment Details (continued)

- **Step B: Application Architectural Review**

- Required Client Resource: Application Architect
- Topics of discussion:
 - System topology including: Hardware; OS; Software; Versions
 - External systems interaction: HTTP server; DB; Queue system; Legacy systems
 - J2EE subsystems utilization: EJB (Session, CMP, MDB), JSP / Servlets, JAAS, JAF, JavaMail, JAXP, JCA, JDBC, JMS, JNDI, JTA, JMX
 - Previous App Server container specific feature utilization
 - Other third party connectivity and jar utilization
- Results / Output
 - Application architecture understanding:
 - System topology diagram
 - External systems dependencies list
 - Preliminary migration risk/watch areas list
 - Nominated application cross section suitable for mini migration.



Migration Assessment Details (continued)

- **Step C: Application Source Code Review**

- Required client resources: Application Architect, Application Developer
- Required materials: Access to application source code and ongoing access to an application developer.
- Topics of review / activities
 - Check J2EE spec adherence and level
 - Code volume review (classes, packages, lines, etc.)
 - Spot check code quality/maintainability review
 - Mini-migration run through
 - Load code into WSAD
 - Run time class dependency check
 - Deployment dependency check
- Results / Output
 - Migration plan
 - Risk area assessment & Risk mitigation plan
 - » Identifies all issues found with their appropriate strategy for resolution
 - » Document identifying any issues that need to be resolved or require design changes to the application
 - Migration work assessment and estimate (in effort days)
 - » Automated migration portion
 - » Gap analysis
 - » Manual migration requirements
 - Project plan identifying tasks and timelines



WebSphere Migration Phase III: Full Migration

- **Step A:** Install and configure all environments and tools
 - Required persons: Systems Administrator/Install Specialist
 - Required materials: Access to machines for all environments.
 - Topics of review / activities
 - Define code porting/promotion process.
 - Environment promotion process
 - Defect tracking process
 - Change management process
 - Release certification process
 - Install/configure development environment
 - Rational Application Developer
 - Source Code Control system
 - WebSphere Application Server
 - 3rd party connectivity
 - Backup and restore procedures
 - Install/configure QA/testing environment
 - WebSphere Application Server
 - 3rd party connectivity
 - Install/configure Production environment
 - WebSphere Application Server
 - 3rd party connectivity
 - Results / Output
 - Defined migration life cycle process and development management plan.
 - Development Environment
 - QA Environment
 - Production Environment

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WebSphere Migration Phase III: Full Migration (continued)

- **Step B:** Migrate code to the new environment
 - Required persons: Application developers
 - Required materials: Access to development environment
 - Topics of review / activities
 - Code migration
 - Code deployment
 - Module testing
 - Defect resolution
 - Performance tuning
 - Results / Output
 - Migrated applications ready for QA testing



WebSphere Migration Phase III: Full Migration (continued)

- **Step C:** Perform End to End testing and defect resolution
 - Required persons: Quality Assurance
 - Required materials: Access to QA environment
 - Topics of review / activities
 - Testing Automation
 - Test run and results analysis
 - Defect entering, tracking, and resolution
 - Results / Output
 - Production ready migrated applications.

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Potential Migration Challenges

- J2EE is intended to provide transparency between applications and the application server
 - Does a good, but not complete job
 - J2EE depends on vendor-specific extensions
 - Noncompliant or older J2EE application servers
 - The J2EE specifications are subject to interpretation and are not all-encompassing
- Migration is more than just application code
 - Development environment, build processes, deployment processes and skills must also be migrated
 - Migrating a runtime environment is typically time consuming and requires periods of interoperability
- Migrations require proper planning, estimation and timed execution
 - For a successful migration precise assessment and evaluation of the existing infrastructure and support system are key

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Mitigating Migration Challenges

Challenges/Risks	Mitigation Plans
Skills building on new tools	Customized training and mentoring programs
Code branching and merging (migrating applications while development is still ongoing)	Standard techniques: Source Control Management tools, snapshot, versioning, project management techniques and change request process implementation
Changes to production environment: <ul style="list-style-type: none"> •Scripts: Build, failover, hot swap, code deployment... •Administrative console •3rd party tools integration to the Application Server (e.g. security/authentication, connectors, Content management...) 	<ul style="list-style-type: none"> • Various Scripts need to be recreated (In most cases) • WebSphere Administrative console needs to be learned as part of the training/mentoring tracks • An assessment needs to be done on the required integration points with the additional products. In most cases, 3rd party tools integration is similar under WebSphere
J2EE version discrepancies (Most of the cases involve going from older J2EE versions to more recent ones)	<ul style="list-style-type: none"> • J2EE provides backward compatibility to a large extent. To a large extent the code can simply be migrated to the new platform easily • Code may need to be refactored • Optimizations may be needed to take advantage of new features • Deprecated API's need to be removed
Use of extended not yet-standardized J2EE features (Involves reconciling of these features to finalized specifications for things such as: JMS, MDB, JMX...)	Explicit modifications to the application code to support the standardized version of each feature. Scripts are typically used to automate many of these tasks
Use of vendor specific proprietary API's	Usage needs to be analyzed and replaced with classes providing equivalent functionality



Thank You!

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