

## WHITE PAPER

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# J2EE and .NET Applications: Creating Value Through Integrated Cross-Platform Management

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## IDC OPINION

IT and business executives face increasing challenges to control costs and improve the efficiency and effectiveness of application support, operations, and development teams. Service oriented architectures (SOAs) are increasingly being developed on .NET and J2EE environments as business demands drive more stringent requirements for availability, dynamic problem triage, and innovation that delivers business impact. IT executives still demand application development projects that deliver cost savings and revenue enhancement. Next-generation Web Services-based applications are expected to deliver efficient and effective integrations across management, processes, and staff that span multiple disciplines.

This innovation requires application developers, support, and IT operations teams to work together to reduce maintenance costs and focus on innovation that generates business alignment.

The dynamic operating and management requirements of SOA-based applications are straining IT organizations' existing management tools and processes. Component-based applications require changes in existing technologies, process, development, and management capabilities to meet demanding service-level objectives (SLOs). Within large enterprises, SOA-based projects are viewed as opportunities to transform IT organizations across silos utilizing executive sponsorship and governance to impact application delivery and management. SOA-based application management must move from monitoring to action-driven, silo-bridging management. Teamwork is becoming the new mantra for dynamic, maturing IT organizations.

These trends are forcing IT leaders to integrate IT staff, application management processes, and technology that operates in a manner indifferent to the underlying application architecture. Application management tools must adapt to offer a consolidated view of data, transactions, and reporting that spans J2EE and .NET environments. The IT opportunity to mitigate risk, ensure compliance, and improve application availability has never been greater; business dynamics are demanding requirements for integrated management that spans multi-tier, heterogeneous architectures.

## **IN THIS WHITE PAPER**

This IDC White Paper provides actionable advice for IT and business executives who require application management that spans J2EE and .NET application architectures. It provides business and technology perspectives on the growing trend of .NET adoption and suggests some key management practices and considerations for combining J2EE and .NET application management. The integrated application management solution from CA's Wily Technology Division can enable enterprise IT to manage transactions across J2EE and .NET platforms. With the announcement of expansion into .NET coverage, solutions from Wily should be part of any prudent examination of alternatives to address the management of Web applications that utilize both J2EE and .NET.

## **SITUATION OVERVIEW**

The significant enterprise adoption of best-practice process frameworks such as IT Infrastructure Library (ITIL) and Control Objectives for Information and Related Technologies (CobiT) is enabling IT organizations to lower their operating costs, improve compliance reporting, and increase application service levels. The emergence of SOAs utilizing J2EE and .NET architectures is driving scalability and enabling dynamic IT service capabilities from Web Services-based applications. Combined, these initiatives provide an opportunity for enterprise IT organizations to redefine static technology and implement processes that offer integrated workflows and management processes to deliver business metrics such as return on equity (ROE), faster time to market for new services and products, and higher margin capabilities. To obtain this level of business alignment, many IT organizations are utilizing multiple platforms to meet new IT service demands.

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## **.NET Adoption and Acceleration**

In many IT organizations, the adoption of .NET has accelerated during the past few years as the platform has garnered more attention from the developer community and enterprise application architectures looking for scalable platform options. IDC expects this adoption trend to continue (see Table 1 and Figure 1).

**TABLE 1**

Current and Anticipated Developer Use of J2EE/J2ME and .NET by Company Size (% of Respondents)

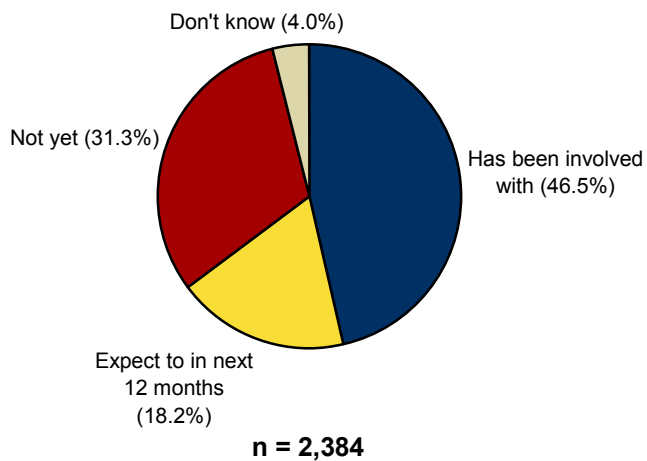
	Small (<100 Employees)	Medium Sized (100–999 Employees)	Large (1,000–19,999 Employees)	Very Large (20,000+ Employees)
Current and anticipated use of J2EE/J2ME	42	54	54	67
Current and anticipated use of .NET	68	71	58	56
Anticipated use of J2EE/J2ME	13	16	15	13
Anticipated use of .NET	19	23	16	15

n = 2,369

Source: 2Q05 IDC Software Developer Collaborative Survey

**FIGURE 1**

Developer Use of the Microsoft .NET Framework



Source: 2Q05 IDC Software Developer Collaborative Survey

Both J2EE and .NET platforms are here to stay, and the propensity of transactions to traverse both platforms will accelerate as SOA initiatives gain traction. Management duplication in terms of solutions and processes is an expensive proposition; thus IT executives should consider a management strategy that utilizes a single management solution offering cross-platform management.

Reducing complexity by utilizing a single solution that monitors business transactions that traverse multiple application environments through a single interface deserves strong consideration. However, executives must consider the interface and console options for such a product as the J2EE and .NET environments have various management and process integration and functional requirements.

IDC's recent conversations with developers, application support teams, and IT operations teams suggest that there is an acceleration of .NET adoption and new management capabilities that address the platform. Specifically, capabilities such as byte-code instrumentation and end-to-end transaction monitoring can help IT remediate performance problems that are related to application code, connectivity errors, and security configuration issues. The ability to have visibility into the transaction tiers that often span .J2EE and .NET platforms is an increasingly important feature set. Users also tell IDC that both platforms will be utilized for SOA-based application development, making traceability of transactions even more difficult.

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## **Business Drivers for Cross-Platform Management**

Enterprise IT organizations often have both J2EE and .NET applications in development, labs, and production scenarios. Application support teams are under pressure to deliver high levels of service availability with limited budgets and staff. Compliance, IT service availability, security, risk mitigation, and customer intimacy are business drivers for investing and prioritizing application management projects. Besides these reasons, it's just good business. History indicates that businesses are negatively impacted when applications fail: user satisfaction plummets, revenue often drops, and IT's reputation is damaged. For IT organizations, innovation is increasingly coming from application development and the ability to manage to higher service levels without hiring staff. Utilizing staff and enabling staff to do more with less are ongoing IT themes.

IT and business executives have the opportunity to save money through vendor and tool consolidation across platforms. IT professionals and executives have such an opportunity to consolidate processes and solutions by managing J2EE and .NET application environments from a single vendor. Besides cost savings, executives should expect this capability to complement existing application and operational processes in areas such as problem, change, and incident management to deliver more efficient process workflows and faster time to resolution. The consolidated view also offers users a familiar interface and reduces the level of training.

The easiest way to reduce costs is to reduce complexity. Reducing management tool complexity can be done in many ways, notably by tool and vendor consolidations and using a single set of capabilities for application management that addresses both J2EE and .NET architectures. While the core management technology and reporting are the same, it's important to understand the deployment and packaging that each integrated product set offers.

## Technology Value

From a technology perspective, as applications are developed to be dynamic, globally distributed, and componentized, application management has struggled to keep pace. Multi-tier applications demand sophisticated management capabilities that deliver deep-dive analytics down to the methods and classes, granular problem triage, dashboards, byte-code instrumentation, agent configuration flexibility, and interface- and data-level integration. Managing both J2EE and .NET requires that application management decisions involve all these areas in an integrated format. The opportunity to reduce problem, change, and incident management costs can be enhanced when utilizing a single tool to address both environments.

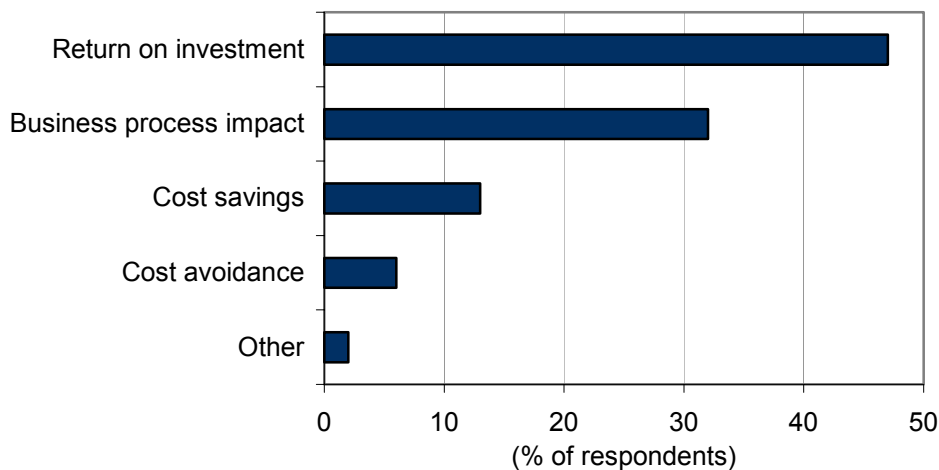
## IT Operations Value

IT operations are increasing their awareness and utilization of best-practice process frameworks such as the ITIL to deliver more effective and efficient management processes and operations. The past few years have brought operations teams closer in integrating across processes and technology workflows to improve service delivery. To ensure alignment of IT initiatives with business objectives, enterprises are demanding that operations deliver deep capabilities for problem triage and resolution. This business process impact is increasingly taking center stage during the product selection process (see Figure 2).

**FIGURE 2**

### Prioritizing IT Purchases

Q. When you prioritize IT purchases, what is the most important factor to consider?



n = 100

Source: IDC's System Management Software Strategies Study, October 2005

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## **Application Support and Developer Value**

Support teams and developers can drive faster time to problem identification and resolution with an integrated, cross-platform approach to application management. Opportunities exist through the reduction in training costs, improved process integration and product workflows, and tighter communications between the lab, testing, and developers across J2EE and .NET.

Application management is becoming an opportunity for operations, application support teams, and developers to come together to decide the "best-fit" management strategy that enables transaction management spanning all business and technology domains.

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## **Key Product Considerations**

As SOAs take complexity and the need to tie to business results to the next level, it makes sense to look at the approach that has set the standard for effectiveness in dealing with the most complex applications to date: J2EE management. Some key functional areas that have been widely adopted by enterprise IT organizations and should be considered as cost-effective extensions for .NET management include:

- ☒ A single, common interface developed on the same platform to empower easier teamwork, smoother communications, and faster time to problem identification and resolution
- ☒ Management on both platforms in regard to active, constant 24 x 7 monitoring and management with low overhead to protect SOA application performance, deep granular data collection, out-of-the-box dashboards and analytics that quickly identify problems and potential resolutions, and the ability to see performance in business process terms while executing deep-dive diagnostics into infrastructure health
- ☒ Industry-proven infrastructure and customer reference accounts that use the solution in production to monitor large-scale enterprise applications
- ☒ Customizable dashboards for different audiences and staff role delegations (e.g., line-of-business [LOB], operations, production application management teams that can have their own dashboards to do their jobs)

These processes and capabilities have been proven effective in J2EE management production environments. IT organizations should consider the extension of this functionality toward .NET environments as a natural next step in integrating tools, lowering costs, and streamlining application management processes for J2EE and .NET applications.

## FUTURE OUTLOOK

Enterprise IT organizations have started to define process and become more effective and efficient in managing application processes; IT operations silos; and Q/A, test, developer, and support teams. Why? A number of business and technology drivers are responsible for this convergence, including:

- ☒ Service-oriented application development requires that management become a central, sometimes embedded key project during development.
- ☒ Applications are increasingly being developed using J2EE and .NET as underlying infrastructure.
- ☒ Business demand to maintain high availability on mission-critical applications has never been greater; revenue linkage to applications has never been clearer.
- ☒ Process and technology integrations are driving more efficient and lower-cost operations that span key processes such as problem, change, and incident management.
- ☒ Management tool maturity that enables IT staff to reuse code and years of investment is growing and will accelerate as vendors deliver more value through solution integrations over the short and long terms.

Application complexity is increasing; gaining control over change and service availability that is dependent on heterogeneous platforms is a critical requirement for successful IT service delivery.

## CHALLENGES

Every strategy and solution selection has challenges. The ability of IT organizations to standardize on an application management tool that applies the same technology to both J2EE and .NET architectures is no different. Some key areas that IT organizations should address during the product selection process include:

- ☒ The similarity of demands for both architectures in terms of feature set, capabilities, interface, and data integration and collection
- ☒ Agent-level setup and deployment, impact on existing application management solutions
- ☒ Data collection and integration and the ability to understand what the data means from technical and business perspectives
- ☒ The need to determine the definition of application management internally; specifically, the ability to understand platform-specific products and deep point products that enable various levels of application management across silos
- ☒ The ability of the IT organization to standardize on an application management solution and create triage teams made from multiple staff across silos

The biggest challenge for cross-platform application management is resolving communications and political barriers within enterprise IT organizations. Business drivers such as compliance, security, new customer growth, and innovation should be carefully considered, and LOB managers should attempt to alleviate and solve the political conundrum.

## CONCLUSION

To enable cross-platform application management, enterprises often must deploy new management processes and tools. IT executives should consider the following criteria for maturing their application management, staff, and integration requirements:

- ☒ Delegate and prioritize executive leadership for application management projects. Integrating processes and technologies that support both J2EE and .NET across pre- and post-production teams is critical in making a "best-fit" product selection.
- ☒ Use best practices that have been implemented for enterprise J2EE application management as a starting point for developing processes to ensure service delivery across heterogeneous application environments.
- ☒ Segregate user duties and roles identifying process ownership and management solution requirements.
- ☒ Identify and prioritize budget allocation, business case analysis, and cost/benefit analysis; determine the need and value of an application management tool that addresses both J2EE and .NET environments.
- ☒ Create or reengineer application management processes. Allocate IT staff ownership for problem, change, and incident management triage responsibilities across Q/A, test, and operations teams.
- ☒ Adopt a process standard, such as ITIL, CobiT, and/or CMM, that brings together a consistent language and definition for processes.

Application management and problem triage will continue to create added complexity for most IT teams. The ability to transcend the political boundaries and create business-centric solutions will enable IT organizations to create sustainable competitive advantage through innovative application management that lowers operations costs, ensures compliance, and delivers business alignment.

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