

Managing Application Performance to Achieve Mission Success

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CA WILY TECHNOLOGY

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Executive Summary

Challenge

The increasing reliance on web-based applications in government organizations has had significant unintended consequences. As direct customer interactions have shifted from mission owners to IT, mission owners now have limited visibility into the online experiences of their customers, while IT teams find themselves directly responsible for the success of customer transactions. Now more than ever, it's important that the mission owners and IT work together collaboratively to ensure customer satisfaction and mission success.

Opportunity

For many organizations, the success or failure of the mission depends on end users' ability to interact well with their web applications. Transactions must be completed quickly and efficiently in compliance with Service Level Agreement (SLA) and Operation Level Agreement (OLA) parameters. And anything less than superior application performance can have immediate and severe consequences. When performance incidents occur, your teams need to know in real time which customers are being affected, the nature and severity of the problem, the mission impact, which systems are affected, the likely cause, and who to call for fast remediation.

Benefits

The key to success is an application performance management strategy that monitors end-user experiences and application performance from a transaction perspective. Only then will you be able to achieve reliable service delivery that is optimized to meet mission objectives and the rigorous demands of customers. By allowing your organization to securely unify and simplify complex IT environments, application performance management enables systems, processes and people to work in sync across the enterprise.

SECTION 1

The Rise of Web Applications

Adopting an effective application performance management strategy is a critical step toward unifying and simplifying your complex infrastructure.

- **RENEW THE INFRASTRUCTURE** Migrate to new technologies such as Web Services and SOA as old ones reach obsolescence.
- **SPEED GROWTH** Help the mission find new capabilities, new channels and new sources of information.
- **INNOVATE** Use new technologies such as Internet delivery, wireless access, portals, RFID, and customer self-service to create a competitive advantage.
- **ENSURE COMPLIANCE** Provide the transparent access to information which has been legislated into your agenda and into your budget.
- **CONTROL COSTS** No more new “boil the ocean” projects. Leverage the investments you made last decade in CRM, ERP, supply chain and HR systems.
- **ASSURE THE MISSION** Because critical processes traverse web applications, any downtime or performance issues can compromise the mission.
- **MEET CUSTOMER EXPECTATIONS** Satisfactory experiences with applications are critical to ensure consistency and adoption rates.
- **OPTIMIZE** Align with initiatives like ITIL and Six Sigma.

Many organizations have sought to accomplish these goals with highly scaleable, distributed composite applications. These flexible technologies enable organizations to rapidly deploy new applications, establish links between decision makers, warfighters, partner agencies, employees, contractors, and suppliers as well as the enterprise’s vital mission and operations data. Application platforms such as BEA® WebLogic, IBM® WebSphere®, Sun® Java System Application Server as well as a host of open source solutions, provide a standard for connecting users to networks—System High networks, JWICS, SIPRNet, NIPRNet, Internet, wireless, corporate intranets—and to a myriad of sources of data in order to conduct transactions.

As organizations introduce the next generation of online applications, they inevitably reach a common impasse: they discover that the tools, skills and processes they have used to manage applications for years suddenly seem completely ineffective.

Next-generation web systems are inherently complex and difficult to manage. They are comprised of many interconnected, heterogeneous parts—web servers, Java and .NET applications, application servers, packaged applications such as Siebel, Oracle and SAP as well as back-end systems such as IBM MQ, CICS, Tuxedo, and various kinds of databases. Compounding this complexity are initiatives around Web Services and Service Oriented Architectures (SOA), business process and integration technologies, and quality initiatives like ITIL and Six Sigma.

This degree of complexity is becoming the norm, and yesterday’s tools cannot provide the transaction visibility or management power to optimize them.

SECTION 2

Yesterday's Management Tools Are Not Enough

When government organizations deploy composite applications, they are inevitably confronted by a variety of new management challenges.

Web-based applications automate customer relationships. This introduces new challenges for mission owners and IT because they lose visibility into customer satisfaction.

- **SHORTAGE OF TECHNICAL SKILLS** In most organizations, Java language skills and platform architecture knowledge are in short supply and usually concentrated in a single department. The majority of developers are proficient in other languages and operating platforms, and operations and sustainment personnel are inadequately trained and ill-equipped to successfully handle the new complexities of composite applications.
- **TIME PRESSURE** Online applications by their nature are time sensitive. The expectation for the mission is that your application is always on, always available, and instantly responsive. When it is not available, IT is under considerable pressure to bring it back online immediately. For some organizations, the transition to a high availability state can be traumatic.
- **LACK OF PERFORMANCE VISIBILITY** J2EE and .NET application platforms provide little information about the performance of the applications running on them. Flying blind, many developers and operations managers learn of application problems by a phone call from the call center or a user in the field. The angry phone call triggers a hunt for the problem, which can last for many long, frustrating days.
- **LACK OF VISIBILITY INTO CUSTOMER EXPERIENCES** Web-based applications provide tremendous cost savings by moving critical business functions to the web, but they “automate” customer relationships. The result is that the application provider and mission owner loses the critical visibility they once had into customer satisfaction. IT has no way of knowing how many customer transactions succeeded or failed.
- **APPLICATION VOLATILITY** Often, the reason an enterprise has decided to implement its next generation of applications using J2EE and .NET is the ability to rapidly change an application to adapt to new business needs. Consequently, this leads to a very high level of volatility. Many organizations report that their applications change as often as daily or weekly, which puts additional stress on management methodologies.
- **INADEQUACY OF TESTING** Studies have shown that when issues arise enterprises have identified code problems as the source of application problems less than 20% of the time. Testing alone will not insure high performance and can rarely duplicate real environments, real user behavior, and real transaction data.

Most organizations respond to these challenges by falling back on the tried and true, well-established systems management tools and practices they have employed for years. A typical enterprise IT organization uses 50 different systems management tools from as many as 20 different vendors. With so much investment in tools and training, IT senior managers should feel that they have the means to control these new applications. But what they are beginning to understand—sometimes at great additional cost to the organization as measured by downtime and the resulting mission impact—is that any attempt to manage the performance and availability of their new applications using yesterday’s tools is doomed to fail.

Consider the tools your IT teams use to manage the complex networks, applications, systems and infrastructure at your organization. There are specialized tools for managing databases, networks, CICS sessions, security, server provisioning, MQ messaging, etc.

The problem is that each of these tools were designed to perform a specific set of monitoring functions for a specific IT silo—by definition these tools are not-integrated, and therefore offer limited (if any) assistance to IT leaders with responsibility to ensure the performance of the transactions across the overall composite application and customer experience.

Traditional systems management tools, when used for managing today’s next generation applications, suffer from three critical flaws:

- **THEY ARE NOT DESIGNED FOR COLLABORATION** J2EE and .NET applications touch many different security, application, portal and integration technologies in addition to legacy mainframe and transaction messaging applications. Composite applications require collaboration. IT teams responsible for individual technologies can only achieve optimal application performance by working in concert to identify and eliminate performance problems.
- **THEY ARE DESIGNED TO SEE ONLY A SINGLE POINT ON THE TRANSACTION CHAIN** Systems management tools typically serve a series of stovepipe IT disciplines such as database performance, network element performance or administration, etc. These tools are designed to provide the performance of a server or subsystem, not a comprehensive view for transactions across composite applications (i.e. an end-to-end transaction view, a business process view, a service level view, etc.).
- **THEY ARE LARGELY INCOMPATIBLE WITH EACH OTHER** Attempting to solve performance issues using a disparate array of tools from multiple vendors is a recipe for failure. IT decision makers must be cautious of vendors that may not actually be offering a single, integrated solution.

In short, enterprises will almost certainly fail to meet the challenges of managing today’s applications and customer experience by relying solely on traditional systems management tool investments. Organizations require an entirely new performance management strategy designed specifically to better ensure customer satisfaction and meet mission objectives successfully.

SECTION 3

End-to-End Transaction Visibility Is Needed

Effective application performance management depends on real-time intelligence about the success rate of transactions and application performance.

Effective application performance management depends on real-time intelligence about both the success rates of customer transactions and application performance. With these key metrics integrated, both IT and mission leaders will be armed with the hard data they need to effectively measure and manage internal SLAs, customer satisfaction, and the impact of application performance on mission execution.

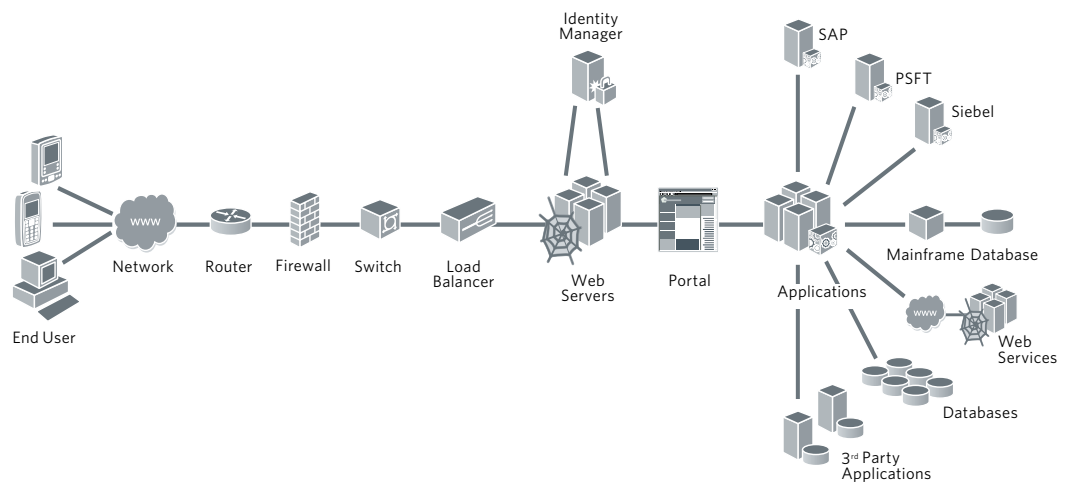
Implementing an effective Application Performance Management strategy allows you to:

- Know customer transaction success/failure rates
- Identify specific customers or groups of customers affected by delays or downtime
- Monitor all customer transactions end-to-end
- Monitor and optimize the customer experience from the end-user perspective
- Maintain superior application performance and availability
- Predict emerging problems and implement repairs before they affect customers
- Diagnose application problems in minutes
- Manage connected systems and services like IBM MQ, CICS, databases, web servers and Web services
- Share critical performance data throughout the enterprise
- Speed application deployment and reduce risk and TCO
- Record data needed to comply with governance demands
- Measure the cost of downtime in money and mission impact

FIGURE A

Application Performance Management requires end-to-end transaction visibility throughout your environment.

TYPICAL END-TO-END TRANSACTION



To assure mission performance, organizations today require a web application performance management solution that can monitor 100% of transactions, provide data on the mission impact of failed transactions and deliver information to resolve problems quickly.

SECTION 4

Does Your Organization Have a Strategy in Place to Manage Customer Success?

Considerations for IT

- Can you monitor all transactions in real time, 24x7?
- Can you use a single solution for both monitoring, and deep-dive diagnosis and problem resolution at any stage in the transaction lifecycle?
- Can the IT team collaborate on problem solving across IT silos using a single set of performance data to identify where problems are and who is responsible for addressing them?

Considerations for Line-of-Business

- Is your first indication of application failure a call from a dissatisfied customer? Or a negative comment on a survey weeks or months after a problem?
- Are you able to monitor business processes and measure the mission impact of failed or slow transactions?
- Can you measure performance against SLAs and compliance with regulations or quality initiatives such as Six Sigma?

If you answered *no* to any of the above, your current management solution is not providing sufficient protection from application failure, customer alienation due to failed transactions and the potential loss of mission effectiveness.

To assure mission performance, organizations today require a web application performance management solution that can monitor 100% of user transactions, provide unique data on the mission impact of failed transactions, and deliver critical information for resolving problems quickly. With such a solution in place, everyone in the organization—Line of Business managers, application administrators, system architects, DBAs, IT application owners—can work together to ensure customer satisfaction, SLA compliance, and mission success. These complementary views need to be integrated in a single solution that enables each stakeholder to leverage the same set of data to rapidly and assuredly determine the location and cause of performance problems.

In addition to core application management capabilities, organizations today also need the ability to measure how well their customers are being served by their web applications. This requires new capabilities for measuring and analyzing the performance and quality of end-user transactions. Only by gaining insight into the customer experience will IT teams have the full complement of information necessary to maintain the highest levels of overall application performance.

And, to ensure stability and comprehensive functionality, an application performance management strategy must be built on a unified, proven technology platform designed specifically for web applications, not strung together from dissimilar technologies that require multiple licenses and serve only one group in IT.

CA Wily's Application Performance Management Solution

CA Wily's Application Performance Management (APM) solution enables IT teams to deliver competitive, high performance web applications and assure mission stakeholders that these applications are successfully completing customer transactions with a high degree of reliability and customer satisfaction. It is the right approach for organizations that recognize the critical impact modern web applications have on business processes and that understand the need for a solution that restores a critical connection to the customer experience.

CA provides a comprehensive, multi-dimensional APM solution:

- **INSIDE TO OUTSIDE** Because of their complexity and composite nature, web applications must be managed from the inside. That is, the management technology must be able to monitor the performance of individual components and how they interact with one another at the deepest possible levels. Why? Because transaction integrity is dependent upon the flawless interaction of hundreds of components and back end systems. Only by knowing the performance at the deepest level can you be certain the higher levels—user authentication and authorization, business process, search and discovery, logistics BOM (shopping cart), collaboration, entire transaction flows—are working.
- **OUTSIDE TO INSIDE** The ability of end users to successfully initiate and complete transactions is the ultimate measure of success for web applications. It is essential the Line-of-Businesses understand the customer experience so they don't get blindsided by end-user complaints. Organizations need to instantly be alerted if end-users are experiencing transaction failures regardless of the availability of the applications they are trying to use.
- **END TO END** To manage composite applications, it is critical to be able to monitor and trace real transactions from the browser (end user) to the back-end systems where data is located. But to be truly effective, this end-to-end visibility must be internal—from the application's point of view—so that problems can be accurately and quickly identified. Siloed systems management tools will fail to share this data as transactions traverse the information supply chain.
- **TOP TO BOTTOM** Whether your application platform is heterogeneous or provided by a single vendor or contractor, it is essential that the management solution provide real-time visibility across the entire stack—server, OS, JVM, portal server, integration middleware, application server, application code, database—in a single tool, regardless of operating system.

CA Wily's APM solution enables IT teams to deliver high-performance web applications and assure mission stakeholders that these applications are successfully completing transactions reliably with a high degree of satisfaction.

To assure optimal performance and respond to cost-cutting pressures, organizations today require a web application management solution that can monitor 100% of user transactions, provide unique intelligence on the mission impact of failed transactions, and deliver essential data for resolving problems quickly. With such a solution in place, everyone in the organization, Line-of-Business managers, application administrators, architects, DBAs, IT application owners—can work together to ensure customer satisfaction, SLA compliance and mission success.

- **IT TO BUSINESS** Organizations that deploy mission-critical web application must ensure effective communication between IT groups and mission units—especially when it comes to the performance of these applications. The management solution needs to provide a shared mechanism for measuring application availability, performance trends, and customer success.
- **OPERATIONS TO DEVELOPMENT** Most organizations recognize that they have critical skills gap between operations, where applications are monitored, and development, where performance enhancement and problem remediation skills are concentrated. The successful management tool will bridge this gap by providing 24x7 monitoring capability in operations and deep granular code-level visibility for developers in the same tool.
- **PAST TO FUTURE** It's not enough to measure application performance and customer experience as a function of the daily operation of the mission. Capacity planners, architects, infrastructure managers all have a need to review the historical performance of applications and their environments. The ability to record and play back transaction performance data is critical to better planning, budgeting and application design.
- **DEVELOPMENT TO QA TO PRODUCTION** By using a single management tool for monitoring performance, diagnosing bottlenecks, and communicating with each other, the teams involved in building, testing and deploying the application can better ensure application integrity and resilience throughout the application lifecycle.

The Right Solution

CA Wily Technology offers the only comprehensive software and services solution specifically designed to ensure effective application performance management by offering unparalleled visibility into customer transactions and web infrastructure performance.

CA Wily Customer Experience Manager® (CEM) provides real-time views and proactive alerts that enable organizations to immediately respond to the online experience of each application end user, detect transaction problems as they happen, and ensure transaction integrity. CEM monitors every transaction in real time, analyzing the performance and quality of web-enabled business processes. When problems with real or synthetic transactions occur, CEM provides detailed analysis on the scope, severity, and mission impact of the transaction defects. Further, it automatically gathers cost, resource utilization and configuration information – evidence essential to rapid problem solving and aligning IT action with mission priorities.

CA Wily Introscope® enables IT teams to monitor complex web applications in production environments 24x7 and to detect and resolve problems before they affect customers. Its unique and proven management capabilities allow organizations to restore business operations and deliver superior quality of service. Introscope's patented, low-overhead technology can be used to manage mission-critical applications end-to-end – from browser to application components to back-end systems—around the clock without degrading performance. Introscope is extensible and can provide comprehensive views of the entire application infrastructure including Java and .NET applications, application servers, web servers, messaging middleware, databases and transaction servers.

CA Wily supports all leading application and SOA platforms including: IBM WebSphere, including WebSphere Portal and WebSphere Business Integration; BEA® WebLogic including WebLogic Portal and WebLogic Integration; BEA AquaLogic®; SAP® NetWeaver including SAP Enterprise Portal; Fujitsu® Interstage®; Oracle® 10g; Sun® Java System Application Server; Apache Tomcat; ATG; JBoss; Macromedia® JRun and any other J2EE-compliant platform, as well as managed .NET.

CA Wily is also the most widely used solution for managing both custom and packaged applications from vendors including Amdocs, Actuate, Ariba, BlueMartini, BusinessObjects, Chordiant, Cognos, Documentum, DST Innovis, e.piphany, IDX, Interwoven, JD Edwards, MatrixOne, Motive, Oracle, PeopleSoft, Retek, SAP, Siebel and many more. CA Wily customers also use Introscope to manage their heterogeneous application environments including middleware, transaction components and databases from Azul Systems, Bowstreet, BroadVision, Invoq Systems, Netegrity, SeeBeyond, Sybase, Oracle, Vignette, Yantra, TIBCO, Vitria, and WebMethods.

CA, one of the world's largest information technology (IT) management software companies, unifies and simplifies the management of enterprise-wide IT for greater business results. Our vision, tools and expertise help customers manage risk, improve service, manage costs and align their IT investments with their business needs.

CA Wily Technology is the market-leading provider of Application Performance Management solutions. By delivering end-to-end visibility into customer transactions in real time, products from CA Wily Technology enable companies to successfully manage the health and availability of their critical Web applications and infrastructure. CA's collaborative management approach allows enterprises to rapidly detect and diagnose application slowdowns and failures, and better assess the impact of application performance on business success. This means better customer service, more stable revenue streams, and higher IT productivity.