

Application Management: **How to Do More with Less in a Difficult Economy**

written by
Quest Software, Inc.



White Paper



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INTRODUCTION

Given today's difficult economic conditions, it's no secret that IT organizations continue to be challenged by business leaders to improve service levels while at the same time reducing operational expenses and overhead. But even as IT budgets continue to tighten in 2009 and beyond, sacrificing quality is not an option.

With these conflicting priorities, how can IT professionals continue to deliver high-quality results and align themselves with evolving business objectives? The answer lies within a comprehensive application management strategy that provides 360-degree visibility into your company's critical business applications—a view that can be used by all stakeholders to measure and improve application service levels and usability, while also lowering operational costs.

In this paper, we discuss the five challenges of maintaining application visibility, along with ten key requirements for an application management toolset that can help organizations like yours do more with less.

This document is intended for IT professionals who are seeking to lower operational costs while improving customer satisfaction, employee productivity and service levels. You can also find the following related white paper at www.quest.com:

Related White Paper

- [Managing the Economic Impact of Application Failure](#), January 2009¹

WHAT DOES APPLICATION VISIBILITY MEAN TO YOU?

Given how critical applications are to organizations today, it's good for IT to take a step back and think about the importance of application management and what it means to have extensive visibility.

For some, visibility means being able to identify and resolve the root cause of application and infrastructure problems that result in lower mean time to resolution (MTTR). For others, it means having the ability to view problems exactly as experienced by end users and then resolve them based on prioritized business impact.

Of course what application visibility means to you depends on your role in the organization and whether IT is considered a "technology provider" or a "service provider." Many enterprises have moved beyond basic infrastructure management towards IT "service management," where applications have become proxies for business processes. This shift in how applications are perceived has made visibility into application transactions, end-user experiences and delivered service levels a critical requirement for business success.

FIVE CHALLENGES AND 10 REQUIREMENTS OF MAINTAINING VISIBILITY

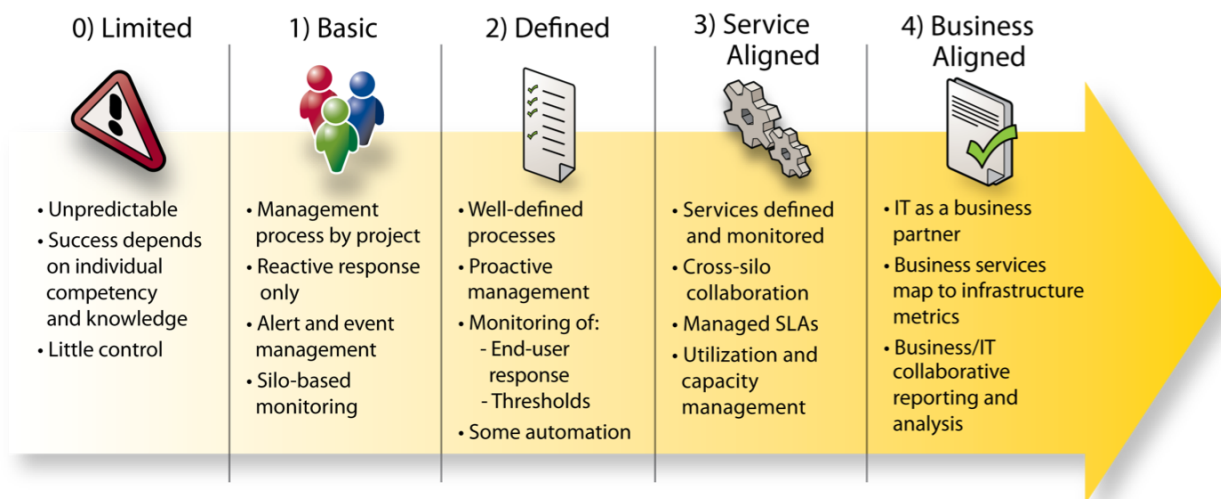
As new technologies and business demands continue to evolve, IT organizations can no longer afford to rely on reactive (and sometimes chaotic) approaches to managing application performance and service levels. In the absence of a true application management strategy, organizations will continue to face the following five key visibility challenges:

1. Alignment of IT with business objectives
2. Dynamic change in the data center
3. Complex object-oriented or SOA applications
4. Organization and team structures
5. Cost of monitoring and management

For each challenge we will define two key requirements to help you evaluate your current (and future) application management toolsets in greater detail.

Challenge #1: The Maturity of IT: Alignment with the Business

The following diagram summarizes the five levels of IT maturity which have been outlined in numerous industry research studies and academic publications over the years:



The IT Process Maturity model describes the various levels of alignment that exist in organizations between IT and the business.

The goal for IT organizations in this maturity model is to migrate from left to right, toward a more proactive, process-structured approach to doing business. It's not unusual for organizations at the "Limited" level to be chaotic and unpredictable, with success usually dependent upon the heroics of key individuals or subject matter experts. As IT matures to the "Basic" level, the organization remains mostly reactive, but begins to introduce basic project management methodologies and structures into daily activities.

At the "Defined" level, IT begins to follow a standardized set of well-documented processes, automate repetitive tasks and proactively monitor key performance metrics, including end-user response times. IT reaches the "Service Aligned" level when service levels agreements (SLAs) are in place and cross-silo collaboration and planning occurs on a regular basis.

"Business Aligned" is the elite maturity model plateau where IT is no longer considered a cost center, but rather a strategic growth enabler to the business. At this level, IT's daily activities align directly with well-defined business objectives. In addition, the business now views IT as a trusted partner, rather than simply as a collection of services.

No matter where your company is located on the IT maturity scale, the following requirements will help you evaluate your current or future application management toolset:

Requirement #1: Ability to monitor more than just infrastructure components.

Monitoring just the components can give you a good idea of your technical health, but it does not give you an idea of how infrastructure problems are affecting your applications, services, the end-user experience or business objectives.

Requirement #2: Ability to adapt and change as your service delivery maturity level continues to improve.

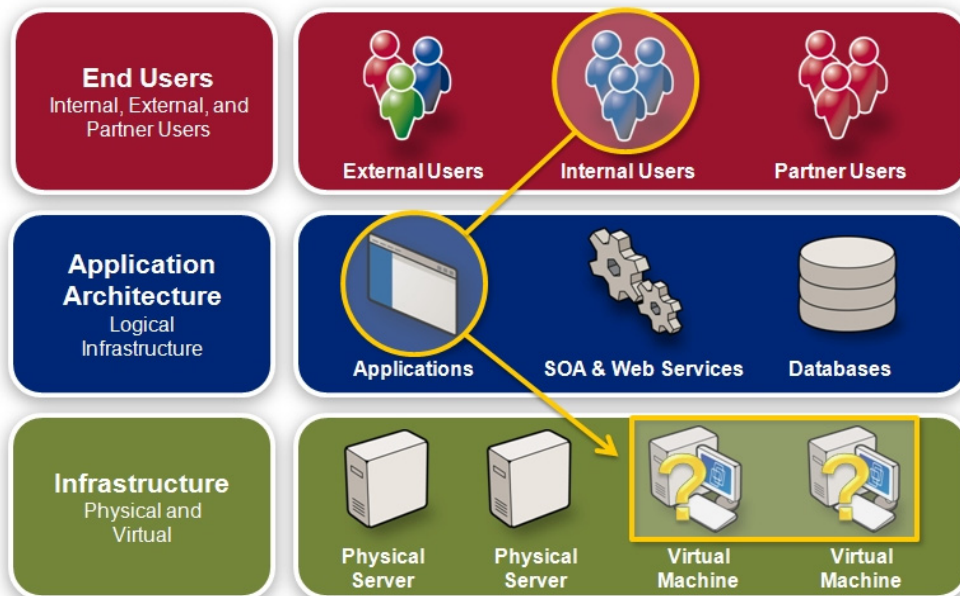
Role-based dashboards, for example, should automatically adapt to infrastructure changes (for example, as unmonitored components are discovered), and a flexible template-based architecture should allow you to deploy your application management solution in incremental steps to reduce time to value.

Challenge #2: Dynamic Change in the Data Center

The growing use of virtualization technologies in the data center has introduced new application management complexities. Following years of growth and change, most organizations have many physical servers and workstations that remain underutilized. Moving such an infrastructure to a virtual environment increases and balances hardware utilization by consolidating physical machines into a single host that can run multiple

virtual machines (VMs). As a result of making this change, organizations gain maximum flexibility—it is easy to reconfigure workloads as required by demand and move VMs between hosts.

Because of this flexibility, IT professionals can no longer point to a set of boxes and say, “Those servers are running my ERP application.” Rather, numerous production applications may now be running on the same VM. As depicted in the diagram below, the assumption used with traditional monitoring tools—that applications will always remain connected to the same physical servers and network components—does not hold true in a virtual environment.



In a virtual environment, an application is not always associated with a single virtual machine; it can be moved easily from one VM to another.

When evaluating your current application monitoring toolset, be sure to consider the following requirements if you plan to leverage virtual technologies:

Requirement #3: Ability to manage dynamic change that comes with a virtualized environment.

Your application management solution of choice must be able to monitor and follow your applications as they dynamically move from one virtual machine to another. Furthermore, you need to be able to understand the relationships and interactions between all the components in the virtual infrastructure. This helps administrators detect, diagnose and resolve incidents and problems, ensure

performance and perform capacity planning—all of which become more complex with virtualization.

Requirement #4: Ability to correlate change to the root cause of incidents across the stack.

Your toolset should help you understand the way in which change affects performance across the stacks. You must be able to correlate change with things like performance (regardless of all the different components that are lurking around in your virtual environment) because the traditional link of being able to associate a component with an application is gone.

Challenge #3: Complex Object-Oriented and SOA Applications

Once upon a time, most large applications were relatively monolithic, particularly larger ERP solutions like Siebel and SAP. Someone could say, “We know that this application is running on that server over there, so if there are problems, it is going to be easy—in principle—to have a logical place to start looking.”

What’s happening now is that applications are being integrated via web services and enterprise application integration (EAI). As more application vendors leverage these new architectures, they discover that they have broken the link between a once obvious locality and where the application is actually running (much as we saw earlier with virtualization). Additionally, they’ve broken the paradigm that one single technology implements the entire application—tens or possibly hundreds of different technologies may now be combined into a composite application, and those components may communicate asynchronously to deliver a service.

Managing these complex applications is difficult at best for tools designed to manage a single monolithic technology stack. A further complication is the fact that many IT organizational structures have not fully evolved from a homogenous stack team structure—not only is there difficulty in figuring out which components are causing the problem, but resources must also cross technical and business organizational boundaries to compare data, and isolate and resolve issues, which ultimately wastes valuable time and money, and extends MTTR.

In the absence of a consolidated, single version of the truth, isolating the root cause of application issues that leverage these new architectures can be an exercise in finger pointing and comparing notes, so be sure to consider the following requirements when evaluating an application management solution:

Requirement #5: Ability to treat a single component in multiple ways.

As applications and services share components, your application management toolset must be able to prioritize and manage the availability and performance of individual components based on the business priority of all applications and services using them.

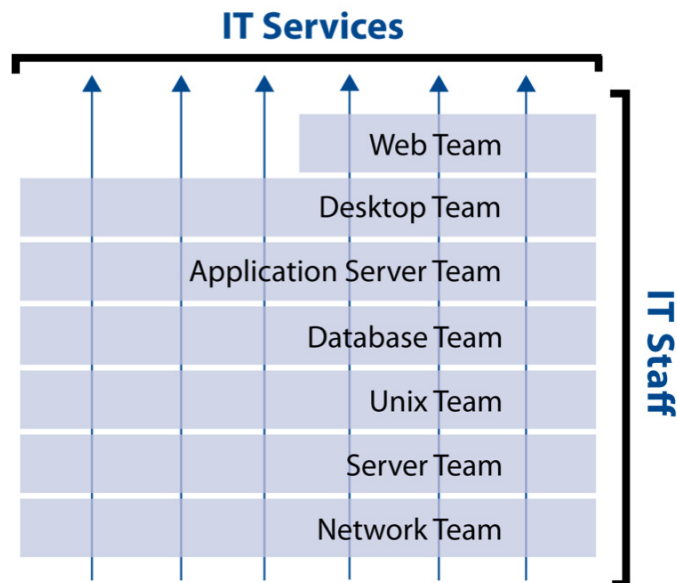
Requirement #6: Ability to administer and adapt to tooling changes quickly.

Your application management toolset must be able to dynamically discover changes to your underlying architecture, and automatically update key metrics, scripts and dashboards as new services and composite applications are brought on line.

Challenge #4: Organization and Team Structures

Departmental Organization

The natural organizational approach used by most companies groups IT staff by function: all database personnel sit together, all UNIX resources sit together, and so on. This enables corporate management to create a critical mass of related skills and cross train employees. But delivering IT services often requires communication across these organizational team structures in order to isolate and resolve application issues. Problems can arise when IT "services" cut across multiple teams who don't always communicate well with each other and frequently use different monitoring tools.

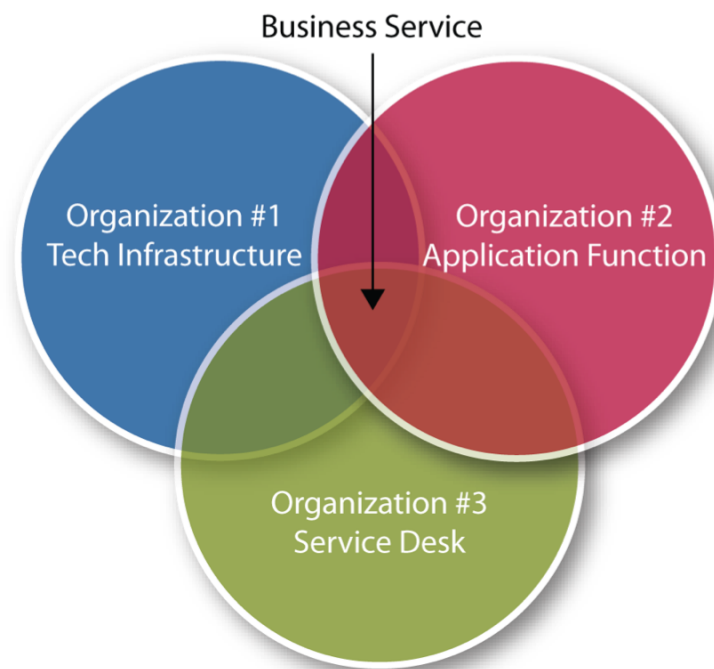


Departmental organization inhibits service orientation.

Problems and delays can quickly arise when you are trying to address a “service” issue. If you have six or seven different monitoring tool sets, along with six or seven different sets of data, extensive work will be required to consolidate and correlate information in order to isolate an issue. Sound familiar?

Outsourcing

Communication issues are often further compounded by the outsourcing of some or all IT services, which is common in tough economic times as part of cost-cutting initiatives. If not managed carefully, outsourcing can quickly introduce new communication problems and negatively impact service levels. For example, one organization may be responsible for technical infrastructure while another customer organization may be responsible for application functionality and a third party may be responsible for the service desk, as illustrated below. All of these organizations need to work together to deliver and support a “business service.”



Outsourcing structure may inhibit visibility into business service.

Organizations have to make sure that all parties—internal and outsourced—communicate well so that they can fix problems in an appropriate order, based on the priorities of the business. The following requirements will help you evaluate an application management toolset from an organizational perspective:

Requirement #7: Allow teams to use their existing tools as needed.

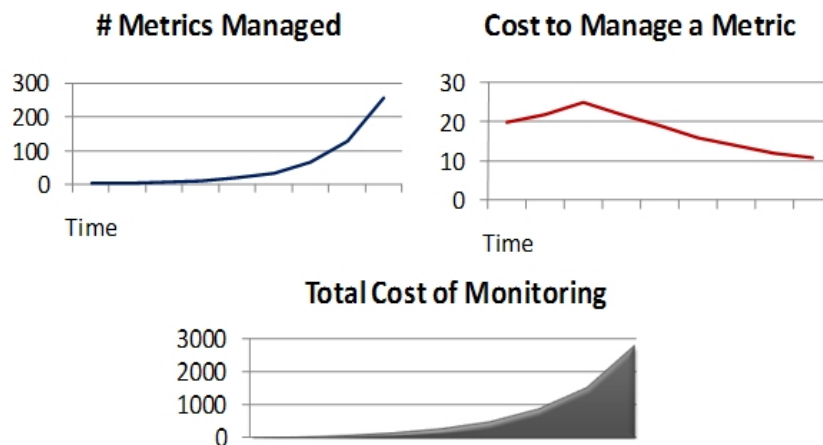
Different internal teams and external outsourcing services will likely have their own monitoring tools, and in many cases they may need to continue using them. Therefore, it is important that your overall application management solution be able to integrate with other tool sets as appropriate.

Requirement #8: Provide views to help teams operate efficiently.

Many people think about performance management in terms of data, but performance management is really more about collaboration between different teams with varying perspectives and technical skill sets. Make sure your tool provides the different informational views each team requires in order to contribute effectively to problem resolution.

Challenge #5: Cost of Monitoring and Management

The final challenge is related to the cost of application monitoring and management. Even though greater efficiencies and improved technologies have lowered the cost of monitoring individual metrics over time, the number of metrics that need to be monitored in an average environment has gone up exponentially, particularly with the advent of newer technologies such as SOA and virtualization. Any savings that may have been achieved by a lower cost per metric has been offset by the overall rise in the number of metrics that are necessary to manage.



While over time the cost of managing an individual metric has declined, there are now a greater number of metrics to manage—increasing the total cost of monitoring. (These charts are representative of industry trends only).

Future shifts in technology will continue to present opportunities (and requirements) for monitoring new metrics. Regardless of whether your IT budget goes up or down, you need an application management solution in place that will grow and adapt with your organization as technologies and business demands evolve over time. In order to optimize operational costs, keep the following application management requirements in mind:

Requirement #9: Manage only the metrics that are truly needed.

IT professionals need to ensure that they manage only the metrics that really matter to the business. Therefore, your tool must be able to put metrics in context with your applications and services. When data is provided without its associated context, the tendency is to collect it all and try to figure it out later—a poor strategy.

Requirement #10: Automate the process of managing metrics, including how the application is being used by end users.


You need better tools than you did when monitoring consisted of just CPUs, disks and other infrastructure components. Today, you need a much more dynamic view of how data is collected—and automation is the key.

SUMMARY

As IT departments move into the “service provider” realm, the ten application management tool requirements highlighted in this paper will help IT professionals evaluate their current and future application management toolsets. These tips will help ensure that your tools have the necessary visibility and flexibility you need to provide a top quality end-user experience and achieve service levels, even when faced with shrinking budgets and growing business demands.

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As you evaluate your application management needs, we invite you to take a closer look at Quest’s solution for application management—Foglight[®]. Whether you are looking for application management tools to integrate with existing tool sets to fill a gap in coverage, completely replace older system management tools or you are buying an application management solution for the first time, Foglight can meet your needs.



Foglight is an application management solution that reduces or eliminates service disruptions to unify IT and the business. Unlike other solutions, Foglight provides a correlated, 360-degree view of your applications, from end user to database and from service levels to infrastructure, helping you locate the root cause of all incidents impacting your business and fix them quickly.

Foglight correlates your data from multiple perspectives into a single version of the truth to provide deep insights into the service relationships that exist between end users, the business and infrastructure components. Its unique, adaptive technology rapidly adjusts to changes in your environment, resulting in:

- Lower operational costs for managing applications
- Mitigated risk of application downtime
- Improved application service levels
- Reduced incident counts and MTTR of incidents
- Visibility for all stakeholders

Examples of top companies reaping Foglight benefits include:

- **Verizon Wireless** – cut support costs from \$165,000 to \$21,000 per server resulting in operational savings of over \$1 million.²
- **Boeing Employees Credit Union (BECU)** - reallocated 70% of after-hours monitoring staff to new business-critical IT projects.³
- **Merrill Lynch** – reduced root-cause discovery time for application issues to minutes instead of hours, and gained the ability to anticipate problems before they impact the business.⁴

For More Information

More information about Foglight is available at www.quest.com/foglight. To see videos of Foglight in action, visit www.quest.com/newview. You'll also find an active user community at www.foglight.org. To contact your local Quest office or distributor, please visit <http://www.quest.com/company/contact-us.aspx>.

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From SupportLink, you can do the following:

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- Download patches and upgrades.
- Seek help from a Support engineer.
- Log and update your case, and check its status.

View the **Global Support Guide** for a detailed explanation of support programs, online services, contact information, and policy and procedures. The guide is available at: http://support.quest.com/pdfs/Global_Support_Guide.pdf

NOTES

¹ White Paper: Managing the Economic Impact of Application Failure, Source:
<http://www.quest.com/documents/landing.aspx?id=8463&technology=&prod=&prodfamily=&loc>

² Case Study: Verizon Wireless cuts Application Support Costs by \$1 Million with Foglight, Source:
http://www.quest.com/Quest_Site_Assets/SuccessStories/CSA_Verizon_F.pdf

³ Case Study: Boeing Employee Credit Union (BECU) Sees Large Dividends in Cost-Savings Driven by Foglight, Source:
http://www.quest.com/Quest_Site_Assets/SuccessStories/CSAFoglight-BECU-F.pdf

⁴ Case Study: Merrill Lynch Global Wealth Management Sees Wealth of Benefits for End Users and Increased Business Productivity from Foglight Source:
http://www.quest.com/Quest_Site_Assets/SuccessStories/CSA_Foglight_Merrill_Lynch_Final.pdf