

# Improving Operational Efficiency with a Strategic Approach to Enterprise Management Tools Acquisitions

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## Introduction

Business applications have undergone a quantum shift over the past ten years, first from centralized to distributed applications, then from connected applications to the Web. This shift has created new application management challenges that many IT organizations have yet to solve. The recent growth of Service Oriented Architecture (SOA) and Web Services-based applications builds on these challenges by layering service abstraction and high-volume messaging to an already complex management landscape. The overall impact is driving a host of new requirements for managing enterprise applications, and a new focus on application management products that help ease the support burden.

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While virtually every IT organization has multiple management solutions in place, the unfortunate truth is that most companies are struggling to develop a product mix that provides them with the “right” information. Visibility to application performance and availability, support for the cross-functional support teams that are increasingly common in today’s enterprises, and efficient root cause analysis are beyond the scope of the stand-alone, siloed tools commonly in use.

Many of the tools owned by the average IT organization were acquired by and for technology-specific support teams, such as database administrators (DBAs), network experts, and server administrators. These tools do what they do very well, and the information they provide is definitely needed. However, most were acquired in an ad-hoc manner by individual technology teams with little or no coordinated planning. For many companies, this has resulted in toolsets with multiple gaps and overlaps, and budget waste as some tools sit idle. In many cases, IT organizations are investing significant portions of the budget in enterprise management solutions, yet IT specialists still lack the information they need to deliver reliable, high performing applications to the business.

In fact, “lack of tools” is one of the top three challenges identified by application support teams, despite the fact that the average company has at least five products in place, and many have 25 or more. This tools gap is also reflected in research that reveals the number of application problems reported by users, versus being detected by IT, is actually rising. This trend has become apparent over the past two to three years, perhaps not coincidentally the same time period as when SOA and Web Services deployments went mainstream.

The net result translates to high operational costs, wasted budget, lower efficiency, and poor visibility to applications and the infrastructure that supports them. Changing this reality requires changes to skills, processes, and tools. It also requires a more strategic approach to product planning and acquisition than has been the case in the past. Not only must technology silos be supported, but the needs of cross-functional application support teams must be met as well.

Addressing the needs of both groups requires multi-dimensional visibility to the application ecosystem, from the “bottom up” (a technology-focused view) as well as from the “top down” (a business service-focused view). Achieving this level of visibility cost-effectively often requires consolidation around a limited set of tools, driving decisions around an organizational tools strategy.

Many companies are unsure about where to start in terms of formulating an acquisition strategy. They face multiple decisions, including which tools to retain and which to retire, the benefits of consolidating vendors versus “best of breed,” and turf wars in which each “silo” has a favorite tool that doesn’t integrate.

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This paper addresses these challenges and focuses on the benefits of a planned acquisition strategy. It includes recommendations for a best-practice focused approach to centralizing decision-making, and a phased “roadmap” for building a tool set that addresses the needs of each stakeholder. It also examines the benefits of exchanging a variety of unrelated products for a limited set of high quality, integrated solutions that provide the “right” information to IT specialists. The intent is to provide IT organizations

with guidelines for building operational excellence and a strong foundation for cost-effectively addressing today’s application management challenges.

## The Challenge of Managing Applications in Today’s Enterprises

In early 2009, the majority of IT organizations found themselves in a familiar position. Expected to maintain or expand the services delivered to the business, 49% reported budget decreases over 2008, 31% reported flat budgets, and only 20% reported budget increases. In a drill reminiscent of the bursting of the “tech bubble” in the early 2000’s, companies turned to the usual suspects — staff cuts, outsourced services, virtualization, and other budget-cutters — to tide them over until the economy recovered and growth could resume.

Savvy companies, however, looked to automation for cost efficiencies and some saw that consolidating enterprise management software was a potential way of lowering costs. While management solutions yield high value, they also require ongoing investment. They are expensive to acquire and deploy, are widespread across virtually every IT organization, and require training, administration, hardware, power, and ongoing support. To yield maximum value, they must meet the needs of business and IT stakeholders in the most cost-effective way possible. Assembling a set of solutions that achieves this goal requires careful planning.

Recently, Enterprise Management Associates (EMA) conducted in-depth research into the application management function within the average company, and the results were revealing. Approximately 45% of companies have cross-functional teams in place to deploy and support enterprise applications, and only 16% use development personnel for routine application support. This finding contradicts the common assumption that developers are intrinsic to the application management effort. While developers do, of course, fix software, multi-skilled, and often highly experienced, technical personnel are doing the day-to-day application management.

When asked about a tools “wish list,” “consolidated event correlation solutions” were the number one choice. This reveals the impact of today’s fragmented toolsets and the fact that few support teams have access to a business-service-focused, consolidated view of the IT enterprise. In fact,

when asked to estimate the time savings that such a product would deliver in terms of application support, 37% indicated that it would save between 26 and 50%, while 12% indicated it would save between 51 and 75%.

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1. Evaluating enterprise management solutions that can make the support process more efficient (41%)
2. Re-evaluating vendors (36%).

EMA believes that both of these options are on the right track, particularly when viewed in context with the numbers of applications companies are supporting. Twenty five percent support between eleven and fifty enterprise applications, while 30% support fifty plus. Only 28% reported ten or less. Clearly, as applications proliferate and become more complex, assuming that they can be managed with headcount alone is unrealistic.

## Maintaining the Status Quo: “Making Do” with a Legacy Toolset

Faced with an ever-evolving set of application requirements and with a fixed set of management solutions in place, CIOs have a somewhat limited set of options. When considering new product investments, particularly in today’s economy, the strategy boils down to balancing costs against benefits.

One option is to do nothing-- to forego potential rewards in favor of taking no risks at all. By choosing this option, the CIO maintains the status quo. The problem with this choice is that companies (and executives) who make it find that there is still a cost associated with “no decision.” This is the cost of doing nothing. If a company is totally satisfied with all aspects of delivering IT services—including the performance and availability of those services, overall costs, and the ability to flexibly respond to evolving business requirements-- this might be the best choice. However, if one element of this mix isn’t working, it’s likely time for a change.

In reality, this is seldom the best choice. In today’s rapidly evolving business climate, the overall impact is a reduced ability to compete in today’s marketplace. For a company that relies on business applications for revenue and competitive differentiation, such a choice can be disastrous.

Application availability and performance are becoming so important that they have become true business differentiators. Shoppers spent almost \$30 billion online between November 1 and December 31, 2008, a 19% increase over 2007. Roughly 75% of would-be customers encountering a poor online experience won’t return to the offending site if a better-performing alternative is available. EMA has encountered companies where the cost of downtime runs as high as 2% of annual revenue. And while the actual loss per company is dependent on the business itself as well as on the application, the point is that for most, doing nothing is not an option.

One IT-specific impact of the status quo is that support costs continue to increase due to the inadequacies of the toolset. This phenomenon is driven by multiple factors, including:

- Lack of support for heterogeneous platforms
- Lack of integration across the toolset
- Lack of support for composite applications, SOAs, Web Services, and virtualization
- Failure to dynamically detect, predict, or correct application-related problems
- Failure to connect component performance and availability to business services
- Lack of support for both technical and business stakeholders

The impact of these factors on real-world efficiency can negate the supposed benefits of automated solutions. Negative impacts include:

- Increased firefighting: As infrastructure and applications become more numerous and complex, application problems take longer to triage. In lieu of automation, there is more reliance on “tribal knowledge” versus tools. As a matter of fact, almost twice as many problems are solved with expert opinion than off-the-shelf tools (51% vs. 27%) in the majority of IT organizations. This means that IT specialists are spending a great deal of time on support, leaving less time for business enablement.
- Higher costs: Each product drives ongoing licensing and support costs, resource costs, ongoing training, and infrastructure costs.

## Tools Consolidation vs. Best of Breed

The alternative is to evaluate the potential benefits – the rewards – of a change in management tools strategy. The choice then becomes one of selecting “best solution(s)” versus “best of breed.”

Best of breed seems to imply that aggregating multiple “best in class” solutions yields the “best” answer for managing applications. The problem with this approach is that, while it may have been the case in the past, today’s focus on business services as opposed to siloed infrastructure significantly reduces the value of a host of unrelated, non-integrated tools. While such solutions likely provide an adequate “bottom-up” view of infrastructure, the fact that they aren’t integrated means they are incapable of providing the “top-down,” application-focused view that IT specialists tell us they need. “Best of Breed” also tends to perpetuate a silo-based approach to application management. Isolated silos and tools reduce efficiency and inhibit the effectiveness of IT Service Management (ITSM) processes, which are intended to promote collaboration across the IT organization.

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The argument then narrows down to “best solution(s).” This doesn’t necessarily mean a single vendor or solution, although it likely means a more narrow selection for most companies. This strategy reduces the field to a limited set of trusted vendors and a smaller number of tools.

There are multiple potential benefits to such a consolidation. Actual benefits depend on the individual company and the toolset chosen. However, at a high level, they may include:

- *Integration by vendor*
  - Choosing a toolset that is pre-integrated provides a strong foundation for the “single pane of glass” application view at no additional cost to the customer. The integration is already complete, and the customer benefits from the vendor’s integration work.
- *Elimination of redundant tools and “shelfware,” retirement of tools that no longer meet the needs of today’s technology*
  - Tools rationalization enables the organization to recoup licensing/support, infrastructure, personnel, and administration costs relating to acquiring and supporting each product.
- *Fewer vendor relationships to manage*
  - A limited number of vendors promotes stronger relationships between companies and vendors. This enables better collaboration between vendor and customer, as the vendor is familiar with customer challenges and can make better product recommendations
  - Customers have more input into product direction. For leading vendors, customer input helps shape product direction
  - Better coordination of purchasing, ability to take advantage of “bundling,” pricing negotiation, volume discounts, and licensing flexibility
  - Reduced administrative overhead associated with vendor relationships, selection, and purchasing.
- *Deployment cost savings*
  - Tools consolidation eliminates redundant deployment and configuration costs for multiple tools
  - Training efficiencies
    - Training costs for typical IT-related products and tools range between \$600 and \$1000 per person per day, and require multiple days. Fewer tools means lower training costs, which can be a source of considerable savings
- *The CMS factor*
  - The Configuration Management System (CMS) (also known as the Configuration Management database (CMDB) in ITIL v2), is “a set of tools and databases that are used to manage an IT service provider’s configuration data...”<sup>1</sup>. Consolidated, single-vendor toolsets are typically pre-integrated, and most either include or interoperate with a CMS. In terms of managing applications, this is a key value-add that makes consolidation much more compelling. EMA strongly recommends that a CMS, composed of data from a federation of information sources, be part of the overall application management strategy. Ideally, the CMS provides detailed insight about applications in context to supporting anchor

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<sup>1</sup> ITIL v3, “Service Strategy,” Taylor, S. Iqbal, M., Nieves, M., “Definitions List,” Great Britain Office of Government Commerce, published by The Stationary Office, 2007.

resources. This information is valuable for virtually all aspects of IT Service Management (ITSM) and enterprise management, but particularly for managing applications. Companies implementing Configuration Management Systems report reduced mean time to repair, as well as reduced overall support costs (see Figure 1).

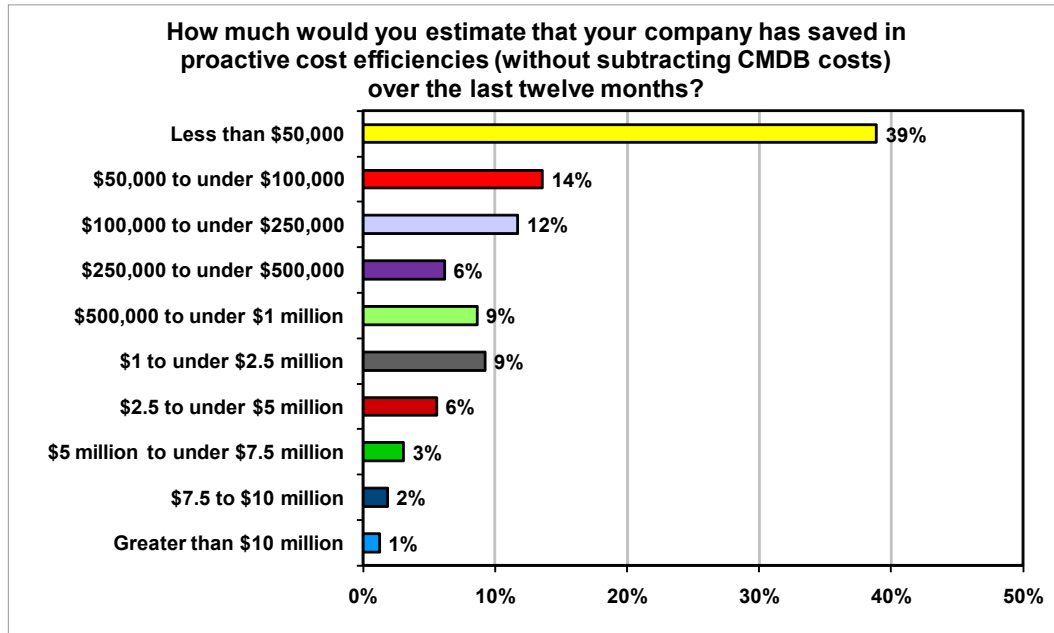


Figure 1: How much would you estimate that your company has saved in proactive cost efficiencies over the last twelve months? (Companies implementing a CMS)

- *Reduced downtime, improved efficiency*
  - Consolidation promotes cross-functional application support, resulting in better operational efficiency- this is one of the largest areas of cost savings
  - 37% of IT professionals indicate that using a single tool to identify and correct application problems is critical (see Figure 2).

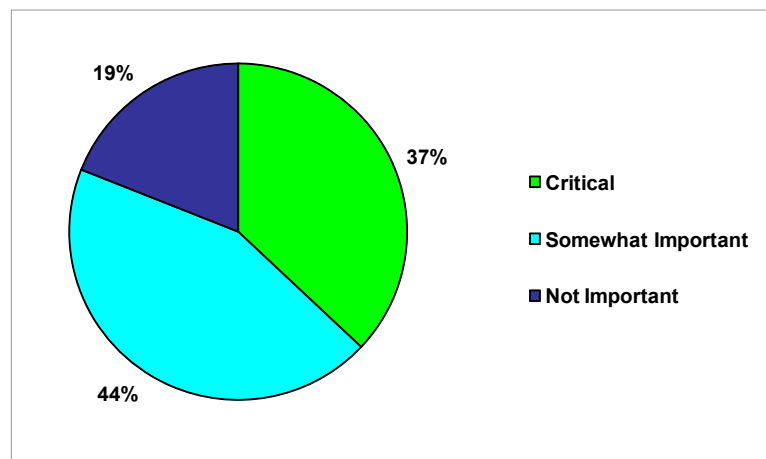


Figure 2: How important is it to be able to use the same tool to both identify AND correct the root cause of an application performance or availability problem? (IT professionals)



## Developing an Acquisition Strategy

There are multiple approaches to product acquisitions. However a well-planned strategy:

- Supports the goal of building a cohesive tool set
- Ensures that:
  - Budget is spent wisely, tools do not overlap, and they address true gaps
  - Tools integrate with one another, and, if possible, with a CMS
  - Tools are targeted toward the specific applications and platforms that the enterprise has in place
  - Acquisitions align with business requirements and are viewed as enterprise assets, rather than silo-focused toolsets.

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ITIL v3 advocates both a lifecycle-based and a global approach to managing applications, in a “consistent manner... managed and maintained to enable alignment with dynamic business needs.”<sup>2</sup>To support IT clients in developing an internal roadmap to reach this goal, EMA has developed the following acquisition strategy. It is based on documented best practices as well as on internal research and focal interviews and can be tailored to each organization’s specific drivers and requirements.

- *Step 1: Document the solutions already in place (Tools Catalog)* - This step consists of building a catalog of enterprise management solutions (“Tools Catalog”) already owned by the IT organization. It will likely include tools in use as well as some “sitting on a shelf” waiting to be deployed. This information can be gathered by canvassing silo support teams, IT managers, development teams, and others regarding management solutions “owned” by their groups.
- *Step 2: Document business services (ITIL Service Catalog)* - This step consists of developing a catalog of the services that IT delivers to the business. It is consistent with ITIL’s concept of a Service Catalog, and should include a list of services, along with use cases, performance, availability, and criticality requirements.
- *Step 3: Document management requirements for the highest priority applications as Key Performance Indicators (KPIs) or Service Level Agreements (SLAs)* - While performance, availability, and business criticality requirements were identified in the prior step, this step documents KPIs and business quality indicators for high priority services. Targeting high priority services narrows down the field to business-critical services. Since this process is iterative, lower priority services can be addressed in future iterations.
- *Step 4: Analyze gaps between requirements and capabilities* - In a recent informal poll, 25% of IT professionals stated that they report on SLAs based on a “ballpark estimate” or by manually compiling metrics from multiple sources. Matching requirements against product capabilities exposes gaps between requirements and available products. Gaps are a good indication of where product investments are needed and can be used to guide acquisition priorities.

<sup>2</sup> ITIL v3, “Service Design,” Taylor, S., Lloyd, V., Rudd, C. Section 5.3, Great Britain Office of Government Commerce, published by The Stationary Office, 2007.

- *Step 5: Investigate product options* - Seek out products that fill the gaps identified in the prior steps. Requests for Proposal (RFPs) and vendor queries should include company-specific requirements as well as global requirements addressing best practices for managing applications. Three important ones are:
  - *Interoperability*: This is a fundamental product requirement, since many products purchased today must have the capability to interact with products purchased tomorrow
  - *Cross-functional use*: An excellent way to break down silos is with products that can be used by multiple technology teams. Tools that provide a single, correlated view of the entire technology stack in context with views relevant to DBAs and Network personnel, for example, provide a basis for cross-functional problem solving.
  - *CMS*: Assess whether solutions include or integrate with a CMS, and if so, which ones.
- *Step 6: Select short list, try before you buy* - The Conference Room Pilot (CRP) is one of the most important single steps in the overall process, because it is an opportunity to view a potential purchase in action within the company's unique technology ecosystem.
- *Step 7: Iterate as requirements change* - Since IT environments have a very high rate of change, and since vendors' products continue to evolve over time, the acquisition strategy should be an iterative process.

## IBM Tivoli as part of a Consolidated Acquisition Strategy

In recent EMA research, 65% of IT professionals surveyed indicated that consolidation on a limited number of vendors improves ROI (See Figure 3). The IBM Tivoli line offers a compelling case for a consolidated acquisition strategy. In terms of “real world” advantages, Tivoli distinguishes itself quite handily against best of breed. The Tivoli suite has multiple strengths, a few of which include enterprise-ready solutions, world-class product design, and tight integration across the product suite. Multiple features deserve specific mention:

- *Broad, standards-based coverage*
  - One can safely say that IBM has been an industry leader in its product direction for many years. Over time, it has strategically engineered its portfolio to interoperate across the IBM Software line, as well as with a host of other solutions based on industry standards. IBM Tivoli's broad technology coverage is difficult to match. It provides the multi-dimensional view of the application ecosystem recommended by EMA with IBM Tivoli Composite Application Manager (ITCAM), and also offers team-specific tools for roles such as network management and infrastructure management.
  - This broad coverage also extends to virtually any platform, custom application, or data source. Tivoli's Universal Agent and Agent Builder solutions extend Tivoli's reach to industry and company-specific platforms and applications, as well as to data and metrics from virtually any automated source. This extends the value of the portfolio to encompass both the IT ecosystem and other automated sources across the enterprise.

- *CMS and Performance Database*
  - The Performance Database is a single data warehouse underlying ALL elements of the Tivoli integrated management system, including system, transaction, and business services metrics. This is a powerful differentiator because it provides the basis for IBM Tivoli's "next generation" advanced analytics and predictive capabilities, which can predict application problems based on past behavior of the overall ecosystem. It also seamlessly integrates with the *IBM Tivoli Change and Configuration Management Database (CCMDB)*, adding the advantages of the CMS.
- *Emphasis on dynamic infrastructure and ongoing automation*
  - IBM has been focusing on Autonomic Computing for years, working toward a vision of incorporating increasing levels of technology expertise into automation. This is reflected in product engineering as well as in ongoing strategic direction. For example, the recently announced "Dynamic Infrastructure" initiative (referred to in the bullet above), features proactive management of multiple technologies and adds dynamic capabilities across the Tivoli line.
- *Composite application management integrated with infrastructure monitoring grows with the business*
  - ITCAM has been engineered to manage massively distributed heterogeneous transactions across enterprise IT deployments. Tivoli's strong transaction-based capabilities include predictive analytics, deep-dive problem analysis, and management of both synchronous (near real-time) and asynchronous (long-running) transactions.
  - ITCAM for Transactions focuses on delivering visibility to transaction paths and end user responses. By capturing performance data across the application ecosystem, it exposes each "hop" of the transaction as it traverses the application technology stack. By making complex transactions visible, this provides a strong foundation for deep dive diagnostics on application-related problems, for which there are also solutions from IBM Tivoli. Capabilities include real and synthetic transaction monitoring as well as round trip browser-to-data center transaction monitoring.
- *"Single Pane of Glass," pre-integrated*
  - The fact that the portfolio is pre-integrated means that companies don't have to do this work on their own. It also provides the much-coveted "single pane of glass" view of the IT enterprise, along with drill-down into technology-specific views.
- *Ongoing investments across the IBM Software line ensure incremental value for customers making IBM investments*
  - IBM Software continues to invest in building increasing value into the portfolio. One recent innovation, for example, is IBM Tivoli's extension of monitoring and management capabilities to business assets, such as power meters and air conditioning units.
  - IBM Software has also been exceptionally innovative in integrating its solutions across the Software Lifecycle, with seamless integration between the Rational and Tivoli lines. This is a powerful differentiator that bridges the gulf between pre-deployment and production. It ensures that Operations teams are familiar with applications and their characteristics from the moment they move from pre-production to production.

There are multiple additional differentiators, including flexible licensing, mainframe coverage, and investments in Green IT. One recent Green innovation, for example, is “chip frequency” management. Chips within servers can operate at full power to support heavier workloads, or be throttled down to save energy during non-peak hours. Comprehensive information on IBM Tivoli solutions is available at: <http://www.ibm.com/software/tivoli/>.

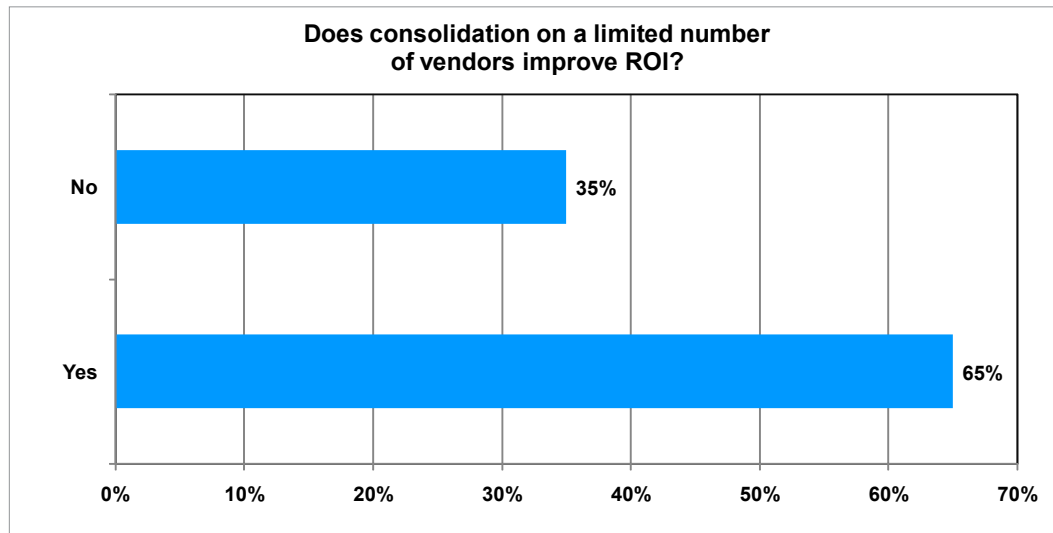


Figure 3: 65% of IT professionals agree that vendor consolidation improves ROI

## Conclusion

The 21<sup>st</sup> century to date has been a time of maturing standards, maturing management solutions, and dramatically increased IT complexity. Today’s IT organizations are striving for better operational efficiency, and the most recent economic downturn has many seeking efficiency through automation. At the same time, operational efficiency via automation has become more viable, and at the same more critical, than ever before.

Leading-edge companies are already taking advantage of automation efficiencies. However, the majority of companies are still making acquisition choices that aren’t so mature. While tools acquisitions addressing infrastructure support have been the norm in the past, today’s new focus on managing business services versus stand-alone technology is driving an evolutionary need for change. Developing an acquisition strategy, and a process for the centralized planning that goes along with it, has become almost as important as making the right product choices.

Automation is a key factor in IT efficiency, but the real value of product acquisitions depends on wise investments that meet the needs of the business. In addition to adding efficiency, quality solutions capable of supporting the provenance, auditing, and security requirements of Governance and Regulatory Compliance (GRC) mandates and legislation (such as Sarbanes-Oxley) are becoming increasingly business-critical. As management solution choices become increasingly formalized, IT organizations are better able to meet the needs of both IT and business constituencies.

Because of the comprehensive nature of the IBM Tivoli solutions and the impressive expertise within IBM Software, IBM Tivoli is a leading contender in positioning for this focus on centralization. Unlike the majority of the best of breed vendors, IBM Tivoli can help fulfill legislative and GRC mandates because the solutions are engineered from the ground up to be business focused, comprehensive, and industry-aware.

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Mid-sized to large companies who do not yet have a management tools acquisition strategy in place are well-advised to re-think the cost and time efficiencies to be gained by doing so. There is a reason why the industry maturity models equate efficiency and organizational maturity with increased automation, and it is because automation can be a high-value investment. However, capturing the full value depends upon making the “right” product choices. IBM Tivoli’s integration, product breadth, and ongoing innovation make it well worthy of consideration.

## About Enterprise Management Associates, Inc.

Founded in 1996, Enterprise Management Associates (EMA) is a leading industry analyst firm that specializes in going “beyond the surface” to provide deep insight across the full spectrum of IT management technologies. EMA analysts leverage a unique combination of practical experience, insight into industry best practices, and in-depth knowledge of current and planned vendor solutions to help its clients achieve their goals. Learn more about EMA research, analysis, and consulting services for enterprise IT professionals and IT vendors at [www.enterprisemanagement.com](http://www.enterprisemanagement.com) or follow [EMA on Twitter](#).

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