



# Optimized management key to success in virtualized environments

John Madden

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## Optimized management key to success in virtualized environments

Many organizations view virtualization as a key technology that can deliver real business value by making their IT infrastructures more efficient, dynamic and flexible. By moving away from the traditional “siloes” approach of linking applications to specific IT infrastructure, toward an approach that creates shared pools of virtualized server, storage and network resources, organizations can dynamically assign the pooled resources wherever and whenever needed – according to business or end-user needs. This increased flexibility can allow companies to enter new markets, improve their supply chain, or optimize internal and external processes – all of which can have a material impact on a company’s bottom-line.

However, a survey conducted by Ovum in early 2008 shows that organizations are quickly realizing that virtualization without proper planning, management and service optimization capabilities can lead to performance headaches that can stymie attempts to leverage the technology for real business advantage.

In this report, we delve into some of the results of that recent survey on IT organizations’ adoption of virtualized systems and, more importantly, service optimization tools. We surveyed more than 300 enterprise and midsize clients (midsize defined as companies with less than 1,000 employees), including IT and business decision-makers across a variety of industries, including financial services, technology, manufacturing and health-care.

We begin with some information on where organizations intend to direct their IT spending, (based on both our survey and our previous research). We then look at some of the challenges our respondents have experienced with virtualized environments, and how they are measuring and gauging a successful virtualization deployment. We conclude by looking at how our survey respondents are planning to invest in tools to optimize their virtualization environments, and the planned timing of those investments.

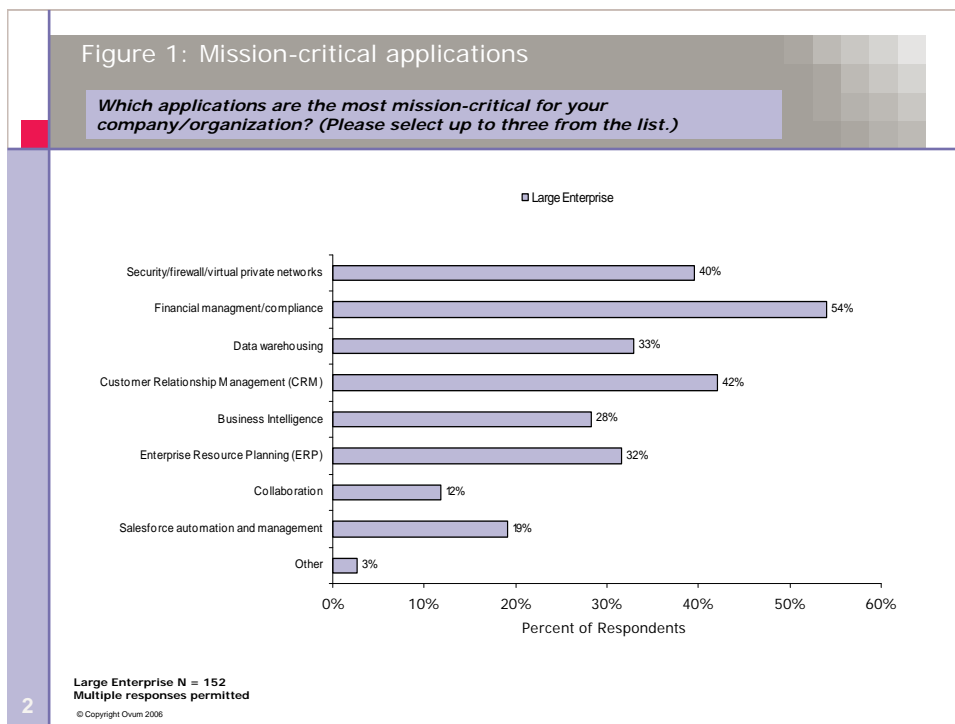
### Organizations continue to invest in mission-critical IT

Despite economic concerns, or perhaps because of them, organizations that responded to our survey demonstrated a strong willingness to continue to invest in IT. This willingness has been in some doubt. With a sluggish U.S. economy and its ripple effect in global markets, many have wondered whether corporations would start pulling back on IT spending, or put off planned IT investments. While some pullback for IT projects in these tight economic times remains a possibility, many businesses see IT as an important enabler for achieving cost efficiencies and cost savings. As a result, many organizations are accelerating their plans for data



center consolidation, virtualization and optimization projects, or for application deployment and integration initiatives. These organizations recognize that investment in such projects now can lead to longer-term savings and benefits even as the future economic picture remains uncertain.

In fact, several of Ovum's most recent market forecasts indicate that, although customers are clearly concerned about the future economic picture, many still intend to move ahead with specific IT investments – including applications – in order to achieve dual IT and business goals. The results from our survey, detailed in this paper, show where organizations plan to focus their application investments. As seen in Figure 1, when asked about their top three most mission-critical applications, more than half of large enterprise respondents (54%) identified financial management/compliance as one of those three. Customer relationship management (CRM) and enterprise resource planning (ERP) applications rounded out the top three choices among enterprise respondents (cited by 42% and 32%, respectively).



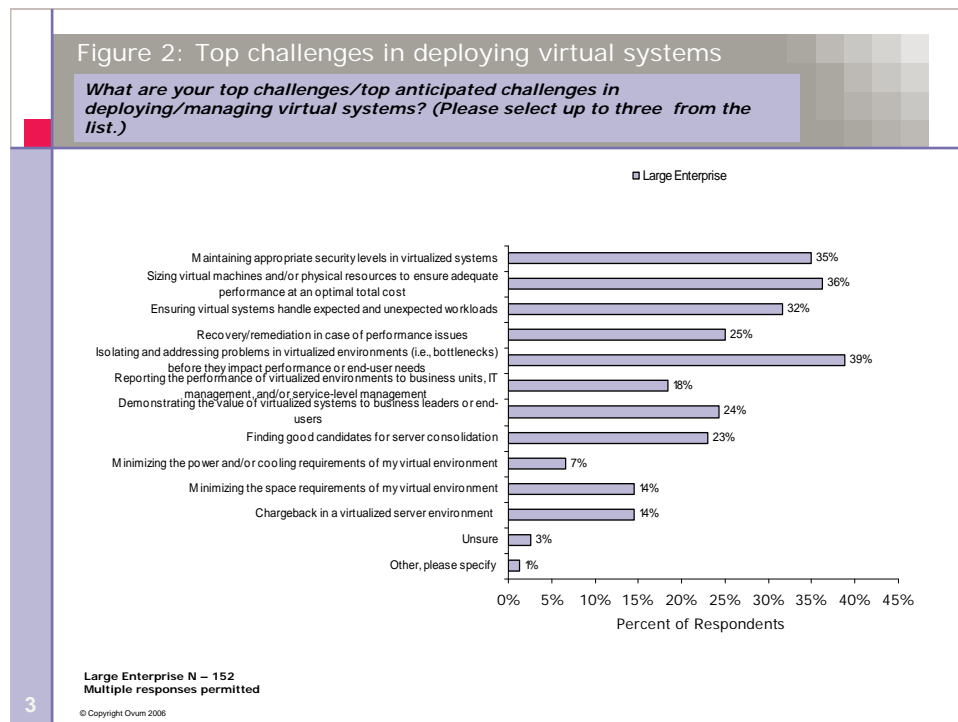
For many organizations, investments in these and other mission-critical application areas will occur in tandem with an effort to reduce their physical data centers' footprints and associated management costs. Based on Ovum's ongoing research and the results of our recent survey, it is clear that many organizations have seized upon virtualization as a key component for achieving these data center objectives.



## Challenges emerge with virtualized systems

Data center virtualization, even just five years ago, was broadly viewed as being limited to a small number of top global corporations looking to reduce their large data center footprints and costs. But as technology from vendors such as VMware has matured and reached a broader market, all types of global and regionally-based enterprise and midsized clients have moved quickly to take advantage of potential virtualization benefits such as increased utilization, improved service delivery and more efficient and effective business processes. The resulting escalation in virtualization deployments has caused new sets of challenges and concerns to emerge – most of them related to effectively managing and securing virtualized resources.

Among our survey respondents who have had experience with virtualized systems, almost 40% of the enterprise respondents cited bottlenecks – or problems in virtualized environments that impact performance or end-user needs – as one of their top three challenges or anticipated challenges. As seen in Figure 2, more than a third (35%) of enterprise clients with virtualized system experience cited the challenge of maintaining appropriate security levels in those systems.



About a third of these experienced enterprise respondents also said proper sizing of virtual machines, and ensuring that they can handle expected and unexpected workloads, are common challenges. In addition, the survey results clearly displayed concerns – cited by one-quarter of the enterprise respondents – about how to recover from performance problems in virtualized systems.



Given the nature and scope of these challenges in mind, organizations in our survey indicated that they are keeping close tabs on measuring success in their virtualization deployments to make sure their investments are paying off.

## Measuring the success of virtualization investments

As part of Ovum's survey, we asked organizations to relate how they were measuring the success of their virtualized environments. Three overarching themes emerged:

### **Cost**

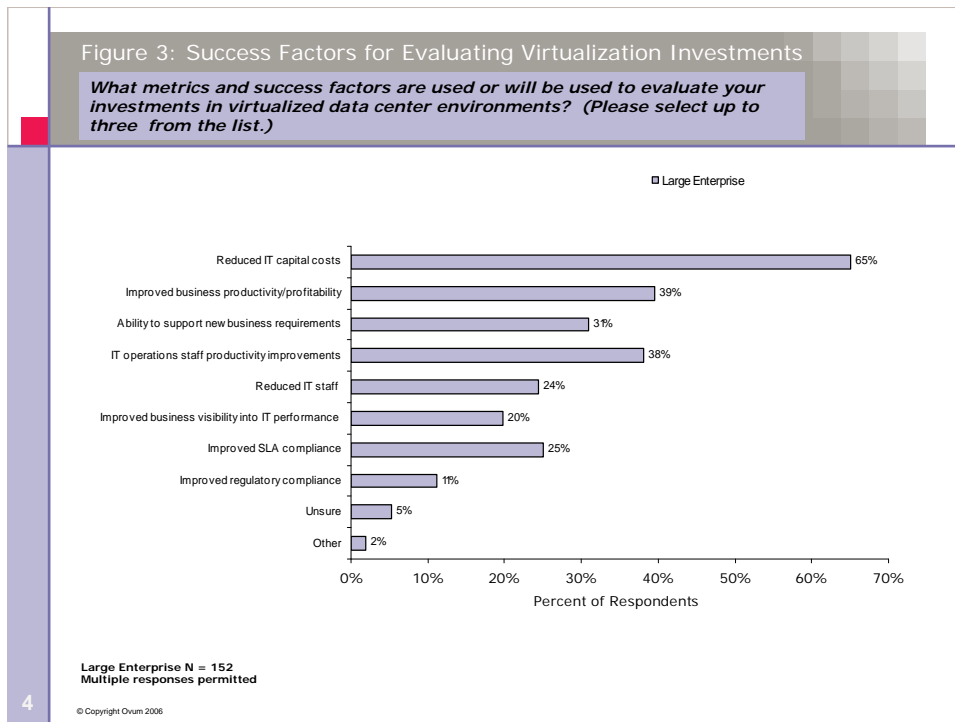
Not surprisingly, cost emerged as a top success metric for enterprise clients. In fact, as we noted above, economic uncertainty is prompting many enterprises to vault virtualization to the top of their IT investment list, if they weren't considering deploying it already. As seen in Figure 3, two-thirds (65%) of enterprise organizations cited reduced capital costs as a success metric. Almost a quarter (24%) of enterprise clients pointed to the reduction or reassignment of IT staff as a success factor. While some organizations are looking to reduce IT staff outright, many hope to shift IT staff responsibilities away from data center maintenance to new or core projects (like new application development).

### **Productivity**

Organizations have high expectations when it comes to how virtualized systems, once deployed, will impact their businesses' overall productivity. In our survey, almost 40% of enterprise respondents selected improved business productivity/profitability as one of the top three success factors from a list of potential benefits; a nearly equal percentage cited productivity improvements in IT staff.

### **Ability to enter new markets and business**

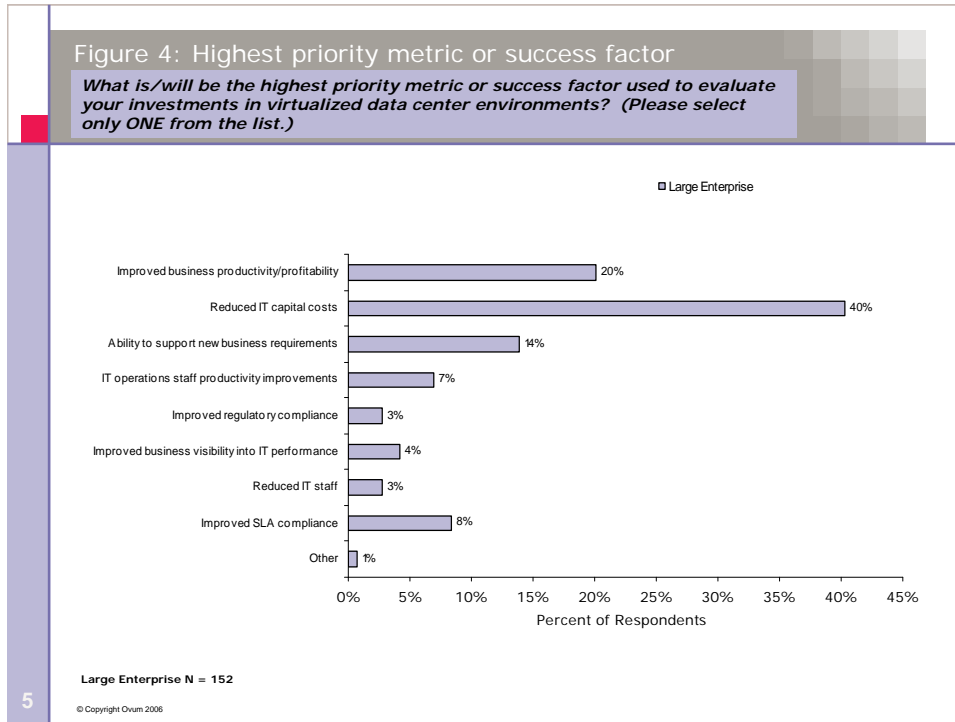
Virtualized systems, with their potential to allocate IT resources as needed, can help IT become more responsive to business needs. That flexibility and responsiveness, in turn, can enable businesses to serve customers, partners and suppliers more effectively. This is especially true for regional organizations that are leveraging the Web to compete with global companies or bring their products and services to new regions. To that end, 31% of enterprise respondents cited the ability to support new business requirements as a top success metric.



These results held firm when respondents were asked to identify their singular, highest-rated measure of success with virtualized data center environments. We asked respondents to pick their highest success metric as a way to gauge what organizations are looking for, and will continue to look for, as the key benefits of virtualized systems. Respondents were asked to select one success metric from the list of benefits referenced earlier.

As shown in Figure 4, 40% of enterprise respondents cited reduced IT capital costs as their primary success factor (in current and anticipated benefits from virtualized systems). Some 20% of respondents cited improved business productivity/profitability. Although many indicated that support for new business requirements was important, no other success metric came close to those of reducing capital costs and improving business productivity.

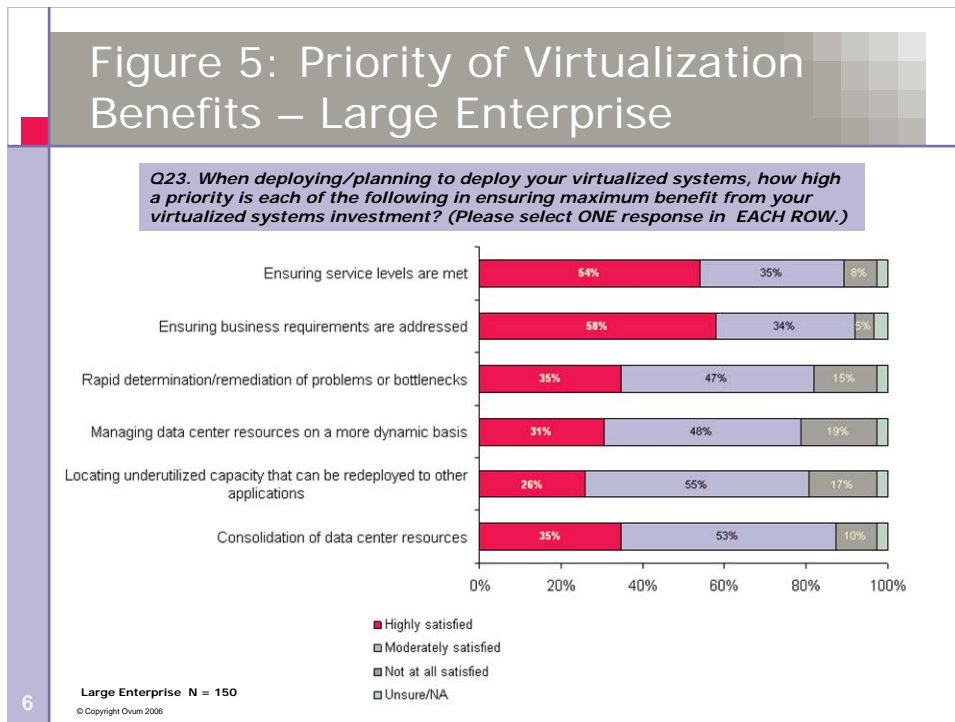
Taken collectively, these results demonstrate a healthy adoption (either actual adoption or planned adoption) of virtualized systems from our respondent base, and a clear expectation for cost and productivity efficiencies from these systems.



## Focused on meeting business needs

Our survey is a clear reflection of what has become a very common IT manager or CIO scenario: balancing investments that can address emerging business factors and deliver bottom-line savings simultaneously. This balancing act is all the more precarious in the current economic climate, as CIOs are under even more pressure to “do more with less” in terms of their IT budgets. Even with mounting cost-related pressures, organizations in our survey showed they are keenly aware of the ties between IT investments and business value benefits, and are increasingly counting on virtualized systems to deliver that business value – as well as critical IT services and functionality.

When asked to prioritize the benefits derived from their virtualized systems, more than half of large enterprise respondents said ensuring service levels and ensuring business requirements are addressed were some of the higher priorities when deploying or planning to deploy virtualized systems (Figure 5).



In addition, there was also a high expectation among respondents that virtualization will allow them to deploy and assign resources more dynamically and better manage problems such as bottlenecks. Almost 80% of enterprise clients said managing resources more dynamically was a high or moderate priority. For enterprise respondents, 35% said rapid determination/remediation of problems or bottlenecks was a high priority, while another 47% said it was a moderate priority. About a quarter of respondents cited the ability to locate underutilized capacity that can be redeployed to other applications as the highest priority. Interestingly, data center consolidation was an important consideration among our respondent base; 35% of enterprise respondents cited consolidation of data center resources as a high priority.

Overall, respondents' prioritization of virtualization benefits show the ongoing struggle of investing in IT with limited (or diminished) financial resources while at the same time making the business more effective and competitive. But the results also show that organizations using virtualization want effective planning, management and monitoring capabilities so that they can achieve their goals related to dynamic resource assignment, redeploying underutilized capacity, and remediation of problems such as bottlenecks.

## Looking for tools to achieve virtualization goals

Achieving the real value of virtualization, many organizations now realize, lies in the ability to effectively manage a virtualized environment across a variety of dimensions. Vendors have begun to respond to this need, and many are now

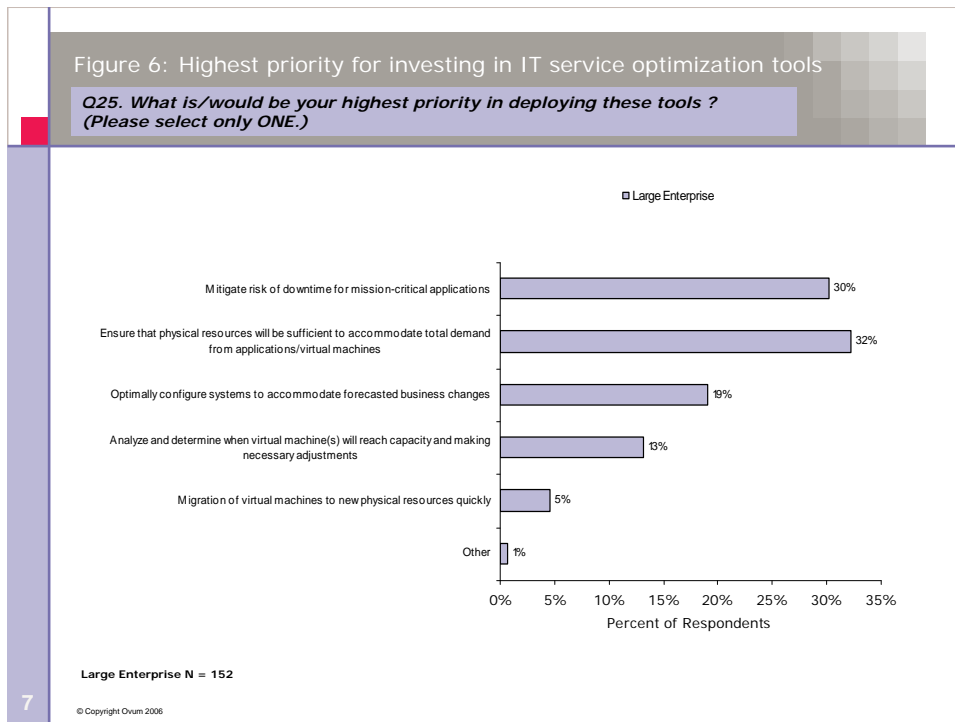




putting more emphasis on virtualization management capabilities than on virtualization itself.

Organizations are looking for the most effective capacity planning, performance monitoring and event monitoring tools, among others, to keep their virtualized systems humming. Such tools are essential to effectively size a virtualized environment for the appropriate applications, to respond to the ever-changing needs of a business, to better alleviate bottlenecks or other technical challenges that arise in day-to-day management, and to ensure consistent management policies across a virtualized system. Without such tools, organizations face a management challenge that could be just as, if not more, daunting than managing a classic "siloes" physical infrastructure that doesn't provide the resource-pooling capabilities of virtualization.

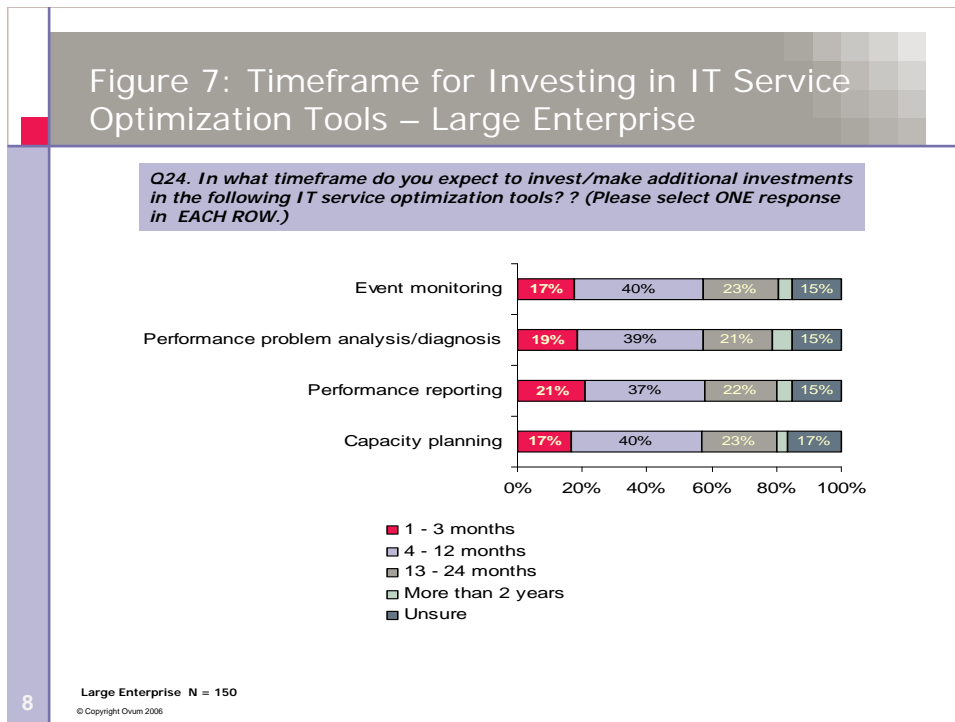
Ovum's survey delved into what organizations are looking for when they deploy service and performance optimization tools within virtualized environments. The results show that, whatever tools are deployed, organizations want to ensure that business is not adversely affected by downtime or virtualization bottlenecks, and that resources can be assigned flexibly. When asked to select their highest priority for the functionality of service optimization tools, about 30% of enterprise respondents said it is ensuring that physical resources can accommodate the demand from applications/virtual machines, as seen in Figure 6. An even greater number of respondents cited mitigating risk of downtime for mission-critical applications as their highest goal. Almost 20% of enterprise clients said the ability to optimally configure systems to accommodate forecasted business changes was the higher priority.



## Time to invest in service optimization tools is now

With effective management of virtualized systems so critical to ensure the success of those systems, it was not surprising to find that many respondents in our survey plan on investing in service optimization tools sooner, rather than later. Again, although global economic conditions remain unstable, our survey shows that many organizations plan to move ahead with investments now in order to attain the full value of their virtualized resources and prevent any disruption to their businesses.

As shown in Figure 7, enterprise respondents indicated their investments in all types of service optimization tools, including those for virtualized systems, will come within the next year – although most indicated they would make investments in the next 4-12 months. Among enterprise respondents, 57% said they would invest in event monitoring or capacity planning within 12 months; about a quarter said such investments would come in 13 to 24 months. For performance problem analysis and diagnostic tools, 58% of enterprise respondents indicated they would invest in such tools within 12 months. In the same time frame, 58% said they plan to invest in performance reporting tools.



Given the investment plans of organizations, as reflected in our survey results, it's no wonder that vendors of all sizes have already shifted their virtualization product and marketing capabilities to stress how they can best size, tune and manage virtualized systems for organizations. But this market demand and environment has also opened up new avenues for vendors that focus exclusively on IT service optimization and, more specifically, tools for the optimization of virtualized environments.

## Enterprise clients looking for best tools for virtualized systems

Our survey provides a cogent snapshot into how large enterprise organizations are balancing IT investments with the need to deliver critical business benefits (despite or because of economic worries and the need to cut costs) – especially among those organizations that have invested or will soon invest in virtualized environments. Respondents made it clear that discussions and decisions around virtualized environments have shifted away from evaluating the technology on its technical merits, to issues associated with implementing and, most importantly, managing virtualized environments.

As the virtualization trend continues, IT organizations want to ensure that they have the best tools available to properly size and tune virtualized systems, as well as to dynamically manage and monitor them so as not to experience downtime or



service delays. The investment in service optimization tools is also tied, as shown in our survey results, to a desire to leverage IT investments (especially mission-critical applications) to better serve customers, partners and suppliers and/or to move into new business areas or regions. IT managers need to find a stable of products and solutions best-suited for their short- and long-term virtualization initiatives, and a number of vendors are attempting to position their products to meet this demand.

One of those vendors, TeamQuest, is a leader in IT service optimization with experience in serving clients around the world. As an established service optimization tools vendor, it is ramping up its focus to address the specific demands and challenges that virtualized environments introduce. The vendor has focused its products particularly on working with organizations to help them optimize virtualized systems (particularly around VMware environments; TeamQuest is a VMware technology alliance partner). TeamQuest's portfolio of IT service optimization products includes its TeamQuest Model capacity planning tool to help IT organizations plan for forecasted or un-forecasted business requirements, configure and determine the number of virtual machines needed, and determine when servers are likely to reach capacity. Other TeamQuest tools analyze workloads and virtual resources to determine the overall performance of virtualized systems. In addition, TeamQuest products work on a variety of operating systems and virtualization platforms, not just VMware.

Vendors such as TeamQuest are delivering solutions at a time when organizations, as displayed in our survey results, are searching for tools that can optimize their virtualized environments and deliver ongoing IT and business benefits essential for the future success of their organizations.

*(Note: A full set of survey results, including information from enterprise and midsized respondents, is available from TeamQuest.)*

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