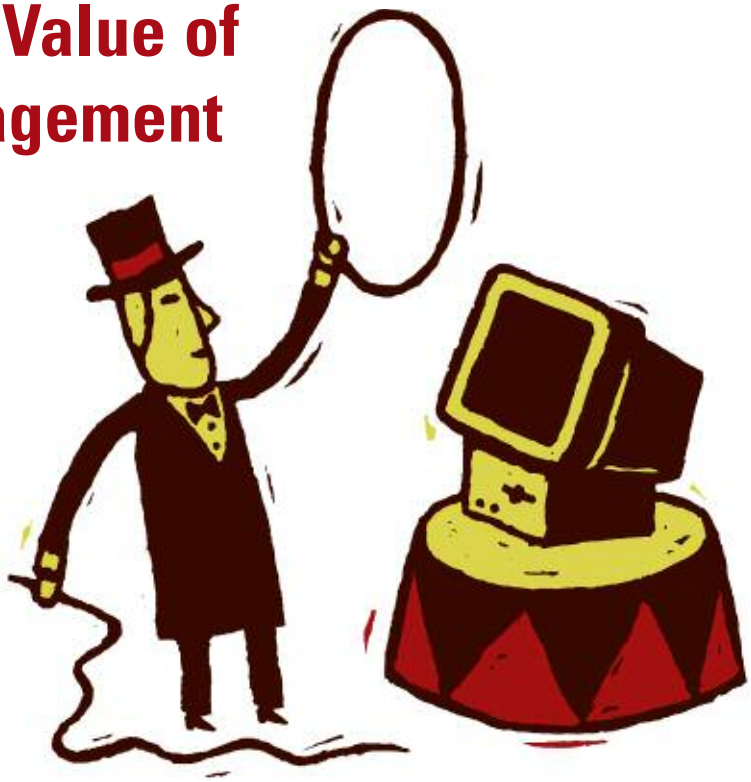
Demonstrating the Value of Performance Management



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Introduction and Guiding Principles

The March 2007 IT Impact Brief was entitled "Showing the Value of Network Management". Given the importance of this topic, I am going to discus it again in a session entitled "ROI Examined" on Thursday, October the 11th at the NetScout User Forum in Miami, FL. This brief will discuss some of the key concepts that I will cover in that session. Most of the material in this brief is new while some material comes from previous briefs as this topic has been of interest to me for a long time.

In my presentation in Miami, I will recommend four principles that guide how we think about demonstrating the value of managing the performance of networks and applications. The first of these guiding principles is that we will not be able to identify an approach that works in all environments. In fact, we will not be able to identify an approach that works all of the time within a given environment. With that in mind, this brief will create a framework that IT organizations can customize for their environment.

The second guiding principle is that in many cases, the information that an IT organization needs to build a strong business case for deploying performance management will only exist once the IT organization has deployed performance management. To exemplify this principle, consider a hypothetical company that deployed performance management and as a result they realized that a large percentage of their WAN bandwidth was consumed by recreational traffic. By removing this traffic, they were able to avoid an expensive WAN upgrade. Knowing this in advance, would have allowed the IT organization to build a compelling business case for deploying performance management.

The third guiding principle is that while technology plays a huge role in the development of performance management solutions, marketing plays as big of a role in determining the ability of IT organizations to demonstrate the value of these solutions. During my presentation in Miami, I will discuss how IT organizations can market the value of performance management to the company's business managers and application developers. One technique that I will discuss is for IT organizations to distribute these NetScout-sponsored IT Impact Briefs within their company. Another technique is for IT organizations to create a company-specific newsletter that discusses topics such as the cost of downtime and why applications that run well over the LAN often do not run well over the WAN.

The fourth guiding principle is that while there is no doubt that performance management is difficult, I feel strongly that performance management has the potential to be very good for our careers. Many senior business managers regard the network merely as a utility that they expect to just be there. These managers only notice the network when it is not working. If the network is nothing more than a utility, it is difficult for the network organization to be perceived as adding business value. However, while senior business managers are not interested in WAN technologies, they are interested in the performance of the few key applications that they use to run their business. This presents the network organization with the opportunity to show business value, and potentially bolsters our careers, by demonstrating how we ensure that the company's key business applications exhibit acceptable performance.

High-Level Perspectives

Roughly a year ago, I surveyed approximately 300 IT professionals and asked them to indicate how the importance of managing application performance was changing in their organization. Their responses are shown in Figure 1.

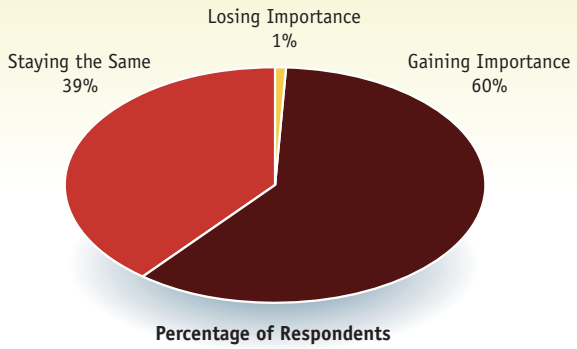

Figure 1:
The Changing Importance of Managing Application Performance

In addition, we recently asked the NetScout community to rate the impact that various projects will likely have on their IT resources during the next year. The 15 projects listed in the survey question were wide ranging and included data center consolidation, redesign of key business processes, as well as the integration of network and security operations. The survey respondents indicated the project that would have the most impact was ensuring acceptable application performance.

Based on these two surveys, it is obvious that managing performance is gaining in importance for IT organizations in general, and for the NetScout community in particular. Past IT Impact Briefs, have identified a number of the factors that make performance management difficult. Unfortunately, I see application delivery becoming increasingly more difficult over the next few years in large part because applications are continuing to become more distributed as evidenced by the continued deployment of Web services-based applications, and are also becoming more dynamic as evidenced by the movement to Web 2.0.

One of the most significant aspects of performance management is that in the majority of instances when an application is degrading, that degradation is noticed first by the end user and then reported to the IT organization. In addition, when the IT organization is made aware of the fact that an application is degrading, they must then start the research to uncover the cause of the degradation. All of this increases the mean time to repair the problem and may also cause the IT organization to loose creditability. In order to reverse this situation, IT organizations need the ability to identify application degradations before the end user does. IT organizations also need to implement the functionality that will help them to rapidly identify the cause of the degradation.

ROI Based on Hard Savings

In most cases it is easier to get management approval to deploy a performance management system if the IT organization can demonstrate hard savings. The phrase hard savings refers to a reduction in the money that will leave the company as a result of deploying performance management capabilities.

To exemplify this, consider a hypothetical company that has 20 branch offices that connect to a headquarters site using a frame relay network. As part of this example, further assume that each branch office connects to the frame relay network using a 128 Kbps PVC (permanent virtual circuit) and has a 256 Kbps frame relay port and that headquarters connects to the frame relay network using a T3 (45 Mbps) frame relay port.

In order to improve the performance of branch office applications the company is considering upgrading their WAN so that each branch connects to the frame relay network using a 384 Kbps PVC and a 768 Kbps frame relay port. As part of this upgrade, the company would add a second T3 connection into their headquarters site. The incremental cost of this upgrade is roughly $13,000 USD per month. Over three years, the incremental cost of the upgrade is approximately $450,000 USD. If by implementing performance management the company can make more efficient use of their WAN and hence delay the upgrade, there is the potential to save a significant amount of money.

The typical ROI analysis involves a situation in which an IT organization is considering making an investment that will result in a monthly savings. One of the simplest and most commonly used financial metrics is the payback period – the amount of time before the initial investment is recovered. For example, if an IT organization makes a one hundred thousand dollar investment in IT and that investment results in a monthly savings of ten thousand dollars, the payback period is ten months.

Another common metric is the rate of return of the investment. One way to think about this metric is to assume that your company has some money that they could either invest in their IT infrastructure or put in the bank and get a guaranteed rate of return. The question is which investment – the one in the IT infrastructure or the one in the bank – returns more hard currency to your company. To exemplify this, assume that an IT organization invests $120,000 in a new performance management solution and that this results in a monthly savings of $10,000 for a period of two years. The investment has a payback period of one year and that after two years there is a total savings of $240,000, which is equivalent to a 42% rate of return.

While the preceding paragraph provides a good way to conceptualize the return on an IT investment, it does not reflect the political reality of how most companies develop a budget. That reality is that senior business managers do not compare an investment in IT vs. putting money in the bank. They compare investing in IT vs. investing in other components of the business such as sales and customer service. This means that in addition to being able to do a thorough business analysis, IT organizations also need to continually demonstrate the overall business value of IT.

The Cost of Downtime

Showing a hard savings on WAN expenses is one of the easiest ways to demonstrate the value of performance management, but it is not the only way. Another way to demonstrate value involves the cost of downtime. Establishing the cost of downtime can be a bit complex. For example, I used to work for Digital Equipment Corporation (DEC). When I was at DEC, if we lost communications with one of our just-in-time manufacturing plants it was widely accepted that the cost to DEC was roughly one million dollars an hour. As a result, we could often justify making IT investments in order to minimize the probability of losing communications with any of those plants. While losing communications to one of DEC's administrative building was considered a major inconvenience, it was not seen as a situation that resulted in the company losing revenue. As a result, it was much more difficult to justify an IT investment to minimize the probability of losing communications with any of DEC's administrative buildings.

The discussion of DEC highlights the fact that in order to use the cost of downtime to demonstrate the value of performance management, there has to be a widely accepted cost of downtime for at least some component of the IT infrastructure. A company that has a widely accepted cost of downtime is the Mohegan Sun Casino in Connecticut. Not too long ago, Mohegan Sun had an intermittent LAN problem that would take parts of their slot machine floor off line to repair. Before they implemented a performance management solution, it took four hours to find the source of the problem, but after the solution was implemented it took only one hour. According to the then network manager at the Mohegan Sun, "Reducing a four-hour down time to one hour is worth a minimum of $400K to Mohegan."

The Mohegan Sun example demonstrates how performance management can minimize downtime and hence protect a company's revenue stream. Another way to demonstrate the value of performance management is by showing that reducing downtime not only protects a company's revenue stream, it also protects the productivity of employees. For example, assume that the one thousand employees in the customer service organization at a hypothetical company have an average loaded salary of $50/ hour. If the jobs of these employees required that they constantly access applications, it could be argued that an hour's outage costs the company $50,000 in lost productivity each time there is an outage. As was previously mentioned, the success of this argument depends on their being a widely accepted cost of downtime. In this particular case, the success of this argument depends in part on how much of a productivity loss senior managers actually ascribe to a one hour outage.

In the preceding examples, the term downtime literally meant the application was not available. It is also possible to demonstrate the value of performance management based on the degradation of an application. For example, I recently worked with a multi-national company with headquarters in the Midwest that was using the SD (Sales and Distribution) component of SAP for sales order entry. If the SD component was running slowly, the company could quantify the impact in terms of both lost productivity and lost revenues. The lost productivity was a result of the company's sales organization wasting time waiting for the SD component to respond. The lost revenue resulted from the fact that on occasion the SD module timed out. This irritated the customer to the point where some of them hung up and took their business elsewhere. A performance management solution that can troubleshoot the degradation allowing the company to fix the performance problem of the SD component of SAP would be easy to cost justify to this company.

Security and Compliance

The preceding section discussed how to demonstrate the value of performance management by identifying cost, revenue and productivity savings. In some cases, the value of performance management is that it allows a company to enhance its security and comply with government laws and regulations. A good example of this is vulnerability created by the port 80 black hole.

Port 80 is the well-known port that servers listen to expecting to receive data from Web clients. Some applications, however, have the ability to hop between ports. Skype is an example of an application that hops between ports and often uses port 80. One of the challenges that Skype presents to IT organizations is that like other peer-to-peer applications, it is sometimes used to distribute content in violation of copyright laws.

AOL's Instant Messenger (AIM) is another popular program that often uses port 80. This is important from a security perspective because viruses and worms are increasingly using IM as a means for their transmission. In addition, there are regulatory reasons why companies may want to either block instant messaging or at least monitor its usage. For example, the Securities and Exchange Commission requires that all stock brokers keep complete records of all communications with clients. This requires that phone calls are recorded and email is archived. It also means that instant messaging needs to either be blocked or archived. However, if instant messaging traffic is flowing through port 80 along with lots of other traffic, without a sophisticated performance system most IT organizations will not even be aware of its existence.

Summary and Conclusions

As I mentioned in the introduction, demonstrating the value of performance management has been an important topic to me for a long time. One of the reasons that I feel that way is because I strongly believe that if we are successful at it, performance management is good for our careers.

Performance management is also an important topic to the NetScout community. I say that because we gave a brief survey to the members of the NetScout community that plan to attend the NetScout User Forum in Miami and almost 75% of the survey respondents indicated that they have had to cost justify their *nGenius* Solution purchase. In many cases they not only had to cost-justify their *nGenius* Solution prior to purchase, but they also had to justify it after the fact, hence my encouragement regarding consistently marketing of the value performance management within your organization.

The next IT Impact Brief will continue with the ROI theme and will discuss additional survey results as well as some specific ways other IT organizations have quantified value from their experiences with performance management.