The Financial Benefits of Using LiveAction Software for Network QoS

How implementing network quality of service management can provide quantifiable cost savings, improved profitability and ROI, reduced risk, and enhanced productivity

ActionPacked!™

Network Power Unleashed

White Paper

The Financial Benefits of Using LiveAction Software for Network QoS

How implementing network quality of service management can provide quantifiable cost savings, improved profitability and ROI, reduced risk, and enhanced productivity

Document Number: W0003-002A-0911
August 2012

Table of Contents

1. Introduction

As the role of the network infrastructure has evolved into a strategic business enabler for enterprises, so too have the network management tools used to enable, monitor and maintain it. With the right network management, the network, the services it enables, and the employees who use those services will all benefit from a solution that maximizes network availability, ensures the performance of critical applications, identifies issues before they become problematic and helps to repair problems that impact productivity and profits.

When choosing network management software, consideration should be given to a solution that is aligned with a company's business goals and provides quantifiable cost savings, improved productivity, and reduced risks.

LiveAction software from ActionPacked! Networks helps enterprises realize higher levels of network quality and to achieve the corresponding costs savings and increases in productivity that come with it. This white paper outlines key areas where LiveAction's network quality of service (QoS) and performance management capabilities align with common business priorities and quantifies its benefits to the enterprise. Each enterprise will tailor these benefits to its own infrastructure, operations model, and processes.

2. State of the Enterprise Network

The vast majority of enterprises are now fully reliant on their data networks for day-to-day operations and revenue generation. However, in order to control the costs associated with growing services, applications and remote workers, many IT departments have consolidated critical resources and operations to company headquarters or other centralized locations. This converged architecture turns WAN and data center infrastructures into potential performance bottlenecks and points of failure for branch offices and other locations that rely on services hosted at headquarters.

Along with the centralization of resources, enterprises are also modernizing their internal communications and collaboration infrastructure to create more efficient, productive and responsive workforces. This effort is spearheaded by the introduction of Unified Communications (UC) systems which brings together real-time communications, such as VoIP and video conferencing, with non-real-time communications, such as email, voicemail and instant messaging. By integrating these technologies, the concepts of presence and multimodal communications can be brought together to create a seamless communications medium between employees, customers and business partners.

UC solutions leverage the power, flexibility and efficiency of a converged IP network to bring all data and real-time communications services onto a single infrastructure. The demands of running real time VoIP and videoconferencing services on converged networks require the use of QoS to properly classify and prioritize delay-sensitive traffic. Excessive network delay, jitter, and packet loss will degrade VoIP and videoconferencing quality. Properly implementing and managing QoS helps ensure the performance of time- and packet loss-sensitive traffic, particularly over slower WAN networks or during times of congestion.

3. Quantifying Network Efficiency

With the right network management tools IT can increase the effectiveness of the enterprise, helping it to gain a competitive advantage, save the organization money and become more efficient. The following are examples of quantifiable savings that can be achieved through the use of LiveAction's network QoS and performance management capabilities.

Minimizing WAN Bandwidth Upgrades

The cost of WAN connectivity for many enterprises is its second highest IT expense after staffing. Growth of application use and the introduction of new services may require costly upgrades in WAN link bandwidth for multiple branch office connections. This can multiply the recurring costs to the enterprise very quickly. Even with added bandwidth, running real-time services such as VoIP and videoconferencing can complicate the issue due to their sensitive to latency, jitter and packet loss.

Calculating the costs of bandwidth upgrades is simply a matter of adding up the incremental costs of the higher speed circuits. Ongoing service provider costs will occur on a monthly or yearly basis. One-time costs may include new equipment, non-recurring engineering charges imposed by the service provider, and any internal labor costs of the IT staff required to implement the upgrades.

Before performing wholesale increases in WAN bandwidth you should first understand the current utilization levels of each of your links on a per-application basis and determine how QoS can provide the optimal bandwidth and performance levels for your most sensitive applications. With LiveAction software you can monitor your network to make an informed decision before upgrading your WAN network. It may be possible to implement or fine tune QoS to maximize utilization and avoiding costly upgrades until they are truly warranted.

Reducing Network and Application Downtime and Mean Time to Repair

Degraded or unavailable network resources have a direct impact on your enterprise. With more and more operational functions such as manufacturing and financial transactions dependent on high-availability and highly performing networks, the direct costs of an outage can easily number into the thousands of dollars per hour. The indirect costs from lower employee productivity due to unavailable voice services or enterprise applications can also result in severe economic impacts.

According to reports by Infonetics Research, large organizations lose on average approximately 3.6 percent of annual revenues to network downtime while mid-size organizations lose about 1 percent. These losses come in the form of decreased employee productivity, damaged customer and partner relationships, and direct revenue losses due to lost orders or contractual penalties.

Downtime can be the result of several factors including:
- Hardware or software failures
- Poor network configuration
- Service provider outages
- Viruses or denial of service attacks
- Cabling failures

Several approaches can be taken to reduce network downtime:
- Proactive monitoring that identifies performance degradation before users experience it
- Improvements in troubleshooting and remediation
- Forensic investigation to determine root causes of downtime and sources of dormant or hidden viruses
- Improvements in change processes

With the right monitoring tool you can detect problems and network degradation in the very early stages and take corrective action before they impact business and your users and systems. But if a problem should grow to the point that business systems and productivity are affected, a tool that provides real-time and historical traffic flow, QoS, and routing views and the ability to drill-down and isolate the problem will decrease the mean time to repair and reduce the financial impact to the enterprise.

The costs of network downtime will vary according to the applications affected and the duration of the outage.
- Outages that impact revenue generating functions such as order processing or order delivery are calculated by the typical dollar amount of the activity per hour times the number of hours of outage.
- If the outage impacts a select group of revenue generating staff (sales, financial trading desk, etc), the calculation can be done by multiplying the number of staff impacted by the average revenue generated per working hour times the length of the outage in hours.
- For non-direct revenue generating staff, the cost will vary by the average burdened salary rate of those who are affected (if not network-wide), and a rough percentage of their productivity impacted. When calculating the

average burdened salary rate, take the typical staff hourly rate and add 25-30% to cover benefits and overhead costs such as unemployment insurance.

Here's a summary of the calculations:

Cost of complete business system impacted	=	Average revenue per transaction	x	Number of transactions per hour	x	Percentage of affected transactions	x	Outage time in hours
Cost of business users impacted	=	Average hourly revenue per user	x	Number of users impacted	x	Percentage of productivity impacted	x	Outage time in hours
Cost of lost user productivity	=	Average hourly wage per user x 1.25 (25% burden rate)	x	Number of users impacted	x	Percentage of productivity impacted	x	Outage time in hours

Consider the following real-world example of network downtime:
A well known retail chain synchronizes information between data centers that is used for catalog, gift card and Internet orders. In the event that one data center goes offline, transactions can be processed out of the secondary data center.

The information being synchronized flows in a continuously running stream of data over a multi-megabit-per-second WAN link. If this stream is interrupted or significantly delayed, the lack of synchronization can result in lost revenue if the secondary data center is needed for primary transaction processing.

Catalog and Internet orders processed during the busy holiday season amount to approximately $130,000 per hour. A four hour interruption in synchronization is estimated to result in a 40% order failure rate for that period. The loss of revenue for this four hour period would be $208,000 ($130,000 x 4 hours x .4 failure rate).

Using LiveAction's real-time and historical traffic visibility, the retailer was able to reduce their MTTR by 40%. For this scenario they would have realized a savings of $83,200 ($208,000 x .4).

Reducing Network Hardware Expenditures

Enterprises will often deploy additional hardware devices to improve network visibility or to implement QoS. This additional hardware incurs upfront capital costs and also recurring operational costs in the form of increased power, rack space and maintenance. What these enterprises may not realize is that by simply acquiring the right software tools, they can achieve these two objectives without buying and installing the additional hardware.

By using the right performance monitoring software you can get access to detailed traffic flow records from the routers and switches already in your network. This information tells you the Who, What, When, Where and How of traffic running through your network without adding a single inline appliance or probe to your network. Similarly, many of the key routers and switches in your network have highly sophisticated QoS capabilities that go underutilized. The right QoS management software can help your IT staff extract this capability and put it to work for you.

LiveAction software lets you take advantage of both of these approaches to save you upfront costs associated with expensive inline appliances and probes, as well as in the recurring costs related to power, cooling, rack space and maintenance fees.

Consider the following real world example of reducing infrastructure expenditures
A multi-site enterprise decided to move to higher-rate MPLS services as a replacement for their existing leased line infrastructure. Their legacy infrastructure included WAN optimization gear installed at each of seven remote locations and the headquarters site.

The WAN optimization devices, installed to provide traffic acceleration and some application visibility, would need to be upgraded to handle the higher-speed links being put in place. This upgrade would cost them $56,000 for hardware ($7000 per site x 8 sites), plus the recurring maintenance and support costs of approximately $16,000 per year ($2000 per site per year x 8 sites), for a grand total of $72,000 for the first year.

With LiveAction software to enable the sophisticated QoS and traffic visibility capabilities already available in their routers, they could forgo the WAN optimization device upgrades. The added bandwidth used in conjunction with QoS policies implemented on their WAN routers would give their users the application performance they needed while still ensuring high performance for their VoIP and other mission critical traffic. By avoiding the appliance upgrades they would realize a first year savings of $72,000 and a two year savings of $88,000.

Increasing IT Staff Expertise and Productivity

Having the right software tools available can greatly improve the effectiveness and expertise of your IT team. LiveAction's network-wide visibility of traffic flows, LAN paths, QoS performance, routing, proactive monitoring and intelligent QoS configuration will cut the time to perform common tasks by up to 90-99%. This increase in effectiveness and the use of proactive monitoring will have an additional benefit of reducing trouble-ticket volume and finger pointing headaches between departments which further increases staff productivity.

Other means of productivity increases are seen in IT projects taken on during the year such as rolling out new applications or services such as VoIP, video, telepresence, and UC. For each of these projects there will be a labor savings due to better network awareness and visibility, and the ability to quickly and easily make modifications to QoS policies. LiveAction will usually result in an up to 90% reduction during the implementation and troubleshooting stages. For some network engineers, the project is not possible to complete without LiveAction.

Calculating the cost savings of reduced trouble-ticket volume is done by examining an enterprise's typical network trouble-ticket volume and MTTR and introducing a 50% reduction in ticket volume and MTTR due to LiveAction's productivity improvements. This time savings is then multiplied by the organization's burdened pay rate for IT support staff. Calculating the cost savings due to shorter project cycles is similarly done by examining the typical yearly number of projects, and incorporating a 90% savings in time spent troubleshooting and on network re-configuration tasks.

4. Conclusion

Networks have become critical to the day-to-day operation and revenue generation capability of today's enterprises. These networks are now used to carry real-time services such as VoIP and telepresence in addition to business and ERP applications. This white paper outlined several areas where the proper performance monitoring and QoS management software can positively impact the cost savings and revenue generating capability of an enterprise network. Having the proper management tools like LiveAction to run a high-performing and highly available network will go a long way to improving the responsiveness and effectiveness of your enterprise operation.

For more information on solutions for performance monitoring and QoS management, please visit ActionPacked! Networks at: http://www.actionpacked.com.