

The Real Value of Network Visibility

December 2007



Executive Summary

Aberdeen Group surveyed 205 organizations in December 2007 to identify best practices for enterprise network visibility initiatives and controls. This report is a roadmap for organizations that are striving to accomplish their business goals by developing capabilities and deploying technology solutions for network monitoring, analytics, and simulation.

Best-in-Class Performance

Aberdeen used two key performance criteria to distinguish Best-in-Class companies: success rates for the timely resolution of issues with application performance and network hardware. Best-in-Class organizations reported:

- 92% average success rate in resolving issues with application performance before end-users are impacted
- 84% average success rate in resolving issues with network hardware before end-users are impacted

Competitive Maturity Assessment

Survey results show that the organizations enjoying Best-in-Class performance shared several common characteristics:

- Best-in-Class organizations are three-times more likely to have the ability to understand interdependencies among applications on the network as compared to Laggards
- Best-in-Class organizations are three-times more likely to have tools for creating custom profiles for monitoring groups of network devices as compared to Laggards
- Best-in-Class organizations are nearly two-times more likely to have the ability to segment application response times into server, network, and application delay as compared to all other companies

Required Actions

In addition to the specific recommendations in Chapter Three of this report, to achieve Best-in-Class performance, companies must:

- Establish baselines for normal network performance
- Develop capabilities for measuring bandwidth consumption per location and per application
- Enable remote access to network performance data and remote troubleshooting of network performance
- Develop capabilities for simulating network performance

Research Benchmark

Aberdeen's Research Benchmarks provide an in-depth and comprehensive look into process, procedure, methodologies, and technologies with best practice identification and actionable recommendations

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Chapter One: Benchmarking the Best-in-Class

Business Context

As organizations roll out more business critical applications, managing network and application performance becomes increasingly complex. Aberdeen's October 2007 benchmark report, [Optimizing WAN for Application Acceleration](#), found that Best-in-Class organizations are able to improve network and application performance predominantly because they are taking a lifecycle approach to managing their networks. One of the key attributes of this approach is the right selection of tools for network monitoring, troubleshooting, analytics, and simulation.

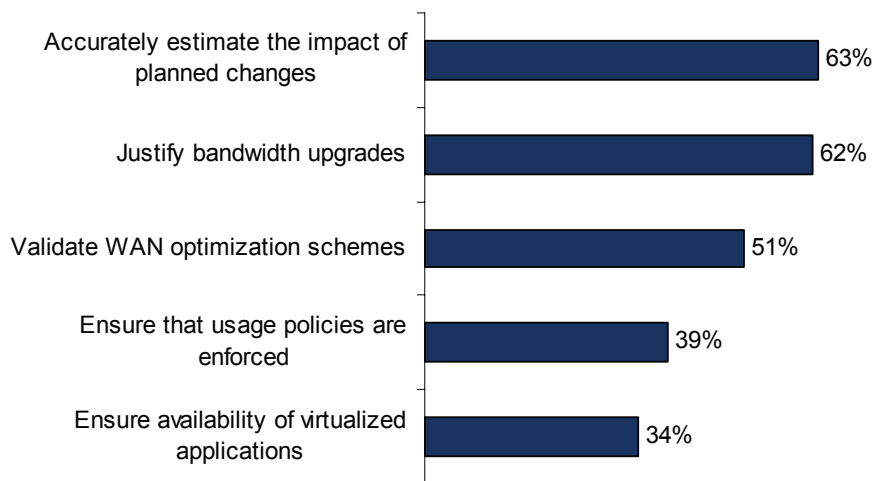
Unifying Strategic and Operational Goals

Aberdeen's research shows that the top two strategic pressures that organizations are trying to address through the deployment of network visibility solutions are:

- Responsiveness to customer needs (39% of all survey respondents)
- Business continuity (38% of all survey respondents)

End-user organizations are trying to achieve several key operational goals in managing their networks and overall enterprise infrastructure (Figure 1).

Figure 1: Top Operational Goals for Network Visibility Initiatives



Source: Aberdeen Group, December 2007

Aberdeen's research also shows that the top strategic actions organizations are taking regarding their network visibility initiatives are:

- Establish proactive control of the enterprise infrastructure (51%)

Fast Facts

- ✓ Top operational goals for network visibility are justifying bandwidth upgrades and accurately estimating the impact of planned changes
- ✓ 55% of organizations improved their ability to accurately estimate needs for future bandwidth upgrades

- Better leveraging of existing internal resources (39%)
- Create a plan to address both strategic and operational goals relating to network management (38%)

End-user organizations are no longer seeing their network management initiatives as "damage control" activities. Aberdeen's research shows that the majority of end-user organizations understand the strategic importance of proactively managing the overall enterprise infrastructure. They are including network management in their strategic planning process and are developing enterprise-wide initiatives for unifying operational goals for network management with strategic plans for business growth.

Network performance projects are no longer cost centers; they are becoming the major components of enterprise strategies for better customer service, profitability, and revenue growth.

The Maturity Class Framework

Aberdeen used two key performance criteria to distinguish the Best-in-Class from Industry Average and Laggard organizations. These Key Performance Indicators (KPIs) are:

- Success rate in solving issues with application performance before end-users are impacted
- Success rate in solving issues with network hardware before end-users are impacted

Table 1: Top Performers Earn Best-in-Class Status

Definition of Maturity Class	Mean Class Performance
Best-in-Class: Top 20% of aggregate performance scorers	<ul style="list-style-type: none"> ▪ 92% average success rate in resolving issues with application performance before end-users are impacted ▪ 84% average success rate in resolving issues with network hardware before end-users are impacted
Industry Average: Middle 50% of aggregate performance scorers	<ul style="list-style-type: none"> ▪ 49% average success rate in resolving issues with application performance before end-users are impacted ▪ 57% average success rate in resolving issues with network hardware before end-users are impacted
Laggard: Bottom 30% of aggregate performance scorers	<ul style="list-style-type: none"> ▪ 18% average success rate in resolving issues with application performance before end-users are impacted ▪ 19% average success rate in resolving issues with network hardware before end-users are impacted

Source: Aberdeen Group, December 2007

The Best-in-Class PACE Model

Using network visibility solutions to achieve corporate goals requires a combination of strategic actions, organizational capabilities, and enabling technologies that can be summarized as shown in Table 2.

Table 2: The Best-in-Class PACE Framework

Pressures	Actions	Capabilities	Enablers
<ul style="list-style-type: none"> ▪ Responsiveness to customer needs 	<ul style="list-style-type: none"> ▪ Establish proactive control of the enterprise infrastructure ▪ Create plan to address both strategic and operational goals for network management 	<ul style="list-style-type: none"> ▪ Defined escalation pathways for issues with network performance ▪ Defined baselines for normal network performance ▪ Ability to understand interdependencies between applications on the network ▪ Ability to segment application response times into server, network, and applications delay ▪ Centralized repository of network performance data 	<ul style="list-style-type: none"> ▪ Network performance monitoring through web interface ▪ Tools for remote analysis and troubleshooting of network performance ▪ Tools for creating custom profiles for monitoring groups of network hardware ▪ Unified platform for managing network performance and security ▪ Tools for flow data analysis ▪ Lab environment to simulate network performance

Source: Aberdeen Group, December 2007

Pre-Deployment Testing Mitigates the Risk

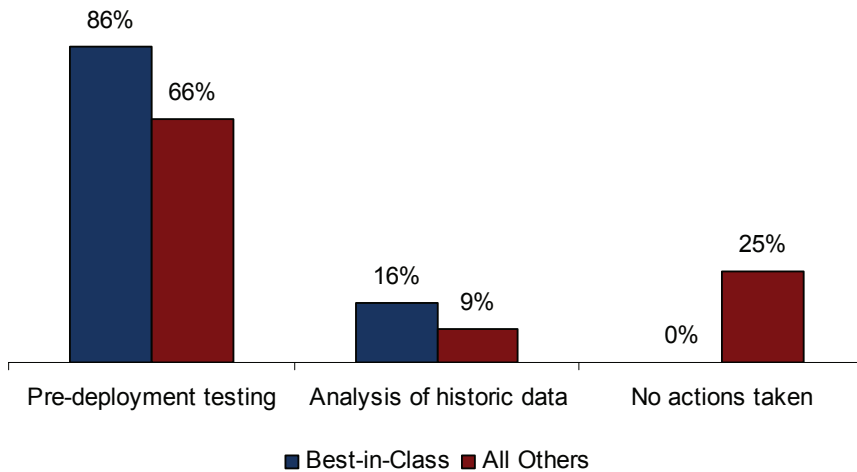
Figure 1 showed that the top operational goals for network visibility that organizations are trying to achieve are justifying bandwidth upgrades and accurately estimating the impact of planned changes to the enterprise infrastructure. Aberdeen's research shows that 55% of organizations improved their ability to accurately estimate the need for future bandwidth upgrades. However, when it comes to managing changes to the enterprise infrastructure, only 39% of organizations reported improvements in the ability to accurately estimate the impact of new technology rollouts on network performance.

Figure 2 shows that organizations are taking different strategies in rolling out new applications on their networks. Interestingly, 100% of Best-in-Class organizations are taking some action prior to new application deployments as compared to 75% of all others. It is apparent that end-user organizations are predominantly selecting pre-deployment testing as a strategy for mitigating the risk of adopting new technologies; only 10% of the overall survey population performs analysis on historic data about network performance as a primary strategy to enable seamless rollouts of new technologies.

It should be noted that 47% of organizations are conducting pre-deployment testing on a limited number of network locations, and 24% are using a lab environment to simulate their network to better predict the impact of application or network changes before deployment. Additionally, 25% of

organizations reported that they plan to start using a simulated network environment for pre-deployment testing in the near future.

Figure 2: Approach to Rolling Out New Applications on the Network



Source: Aberdeen Group, December 2007

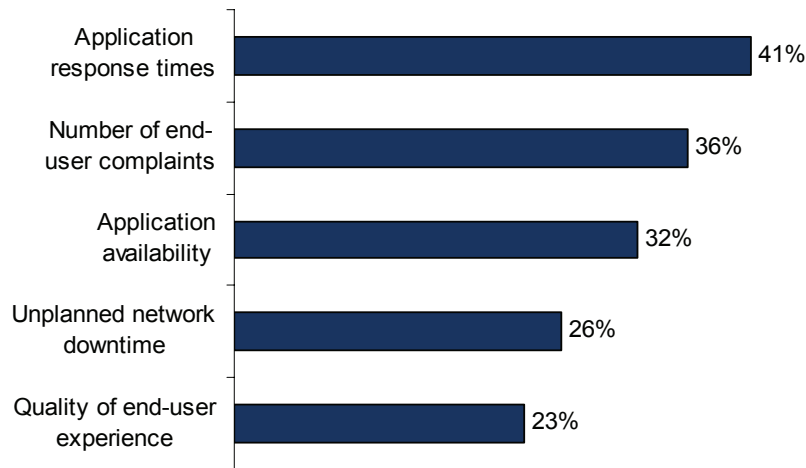
As the network becomes more of a strategic asset, the ability to deploy new technologies on the network seamlessly is becoming increasingly important. Organizations are investing an increasing amount of resources to make it possible to conduct changes to their enterprise infrastructure without disrupting key business processes.

What Does Optimal Network Performance Really Mean?

Figure 3 shows that application response times are the top performance indicators used by organizations to evaluate network performance. Aberdeen's research reveals that organizations are abandoning unplanned network downtime as the KPI and are moving in the direction of using application performance and end-user satisfaction as the key indicators of how their network is performing.

It is important to point out that 36% of organizations are using the number of calls to a help-desk as the key indicator of network performance. Using this performance metric indicates a reactive approach to managing network performance; it doesn't ensure that the top strategic goals for network management, business continuity, and responsiveness to customer needs are being met.

Figure 3: Top Performance Indicators



Source: Aberdeen Group, December 2007

Aberdeen Insights - Strategy

For a long time, the main goal of network administrators was for their network to be up and running. Aberdeen's research shows that this is no longer the case. Enterprise networks are becoming more of a strategic asset and the goals of employees in charge of managing network performance are shifting in the same direction. Avoiding unplanned network downtime is no longer enough; network administrators have to deal with requests for faster, always available applications. Additionally, changes to network design and new technology roll-outs are expected to be conducted in a way that doesn't disrupt key business processes. Network administrators are being asked to ensure continuous and timely customer service, enable seamless deployment of technology tools for managing a whole value chain, or ensure that enterprise-wide collaboration tools are always operating at a high level of performance.

The good news for network administrators is that senior management is finally realizing that they need help. Managing enterprise infrastructure and planning changes to the network design are becoming part of overall enterprise strategies; organizations are increasingly realizing that managing networks, applications, and systems should no longer be three separate and disconnected processes. Forward thinking organizations are taking proactive control of their enterprise infrastructures predominantly because they understand the impact that effective network and applications management has on profitability and revenue growth.

"I make sure that on a monthly basis I am looking at the trending of individual circuits: utilization and availability. I ensure that I am aware of new applications that are being planned for the network and that testing has been done to verify any impact that may have."

~ IT Manager,
Professional Services

In the next chapter, we will see what the top performers are doing to achieve these gains.

Chapter Two: Benchmarking Requirements for Success

The selection of technology solutions for network visibility and integration with business intelligence and business process management systems plays a crucial role in the ability to turn strategies into profit.

Case Study - Manufacturer Managing Application Performance

Take, for example, the case of a mid-sized manufacturing company from North America. The company decided to invest in network monitoring solutions primarily to ensure that the level of service they were receiving was aligned with negotiated SLAs. The solution implemented did not allow the company to automatically compare actual performance to SLAs, but it did enable the organization to capture detailed information about the performance of network elements.

Six months later, the company implemented an ERP solution, but end-users were not satisfied with response times for this application. Additionally, as a result of the ERP implementation, the performance of some other business critical applications declined. The company found that capabilities of network monitoring solutions they already had in place helped them deal with this issue in a more effective way. Having a visibility into a source of application delay enabled the organization to make a more educated decision about additional resources they needed to invest in to ensure an optimal level of network and application performance.

The company's IT Director said, "We found that having visibility into network performance and bandwidth consumption is associated with some measurable business benefits. First, it was very important to be able to separate the delay in application response times into server, network, and application. Originally we thought that we didn't have enough bandwidth to run an ERP application and were thinking about adding an additional T1 line. A technology solution that we had in place helped us realize that the root-cause of the problem was on the application side - not the network. This allowed us to avoid adding more bandwidth, but it also allowed us to be able to effectively manage application performance on an ongoing basis and address potential problems before they could impact end-users."

Fast Facts

- √ Best-in-Class reported that, on average, their help-desk FTE is able to manage 133 end-users more than a help-desk FTE for the average Laggard organization
- √ Best-in-Class are spending 5.2 hours less per IT FTE per month on troubleshooting issues with network performance as compared to Laggards

Competitive Assessment

The aggregated performance of surveyed companies determined whether they ranked as Best-in-Class, Industry Average, or Laggard.

In addition to having common performance levels, each class also shared characteristics in five key categories: (1) **process** (defined baselines for normal network performance; ability to understand interdependencies between applications on the network; ability to identify a source of the delay in application response times); (2) **organization** (defined escalation pathways for issues with network performance); (3) **knowledge management** (centralized repository of network performance data; job role based access to network performance data); (4) **technology** (the selection of appropriate tools and intelligent deployment of those tools); and (5) **performance management** (the ability to measure bandwidth consumption per application).

These characteristics, identified in Table 3, serve as a guideline for best practices; they correlate directly with Best-in-Class performance across the key metrics.

Table 3: The Competitive Framework

	Best-in-Class	Average	Laggards
Process	Defined baselines for normal network performance		
	68%	53%	42%
	Ability to understand interdependencies among applications on the network		
	50%	21%	13%
	Ability to segment application response times into server, network, and applications delay		
	50%	36%	13%
	Ability to associate a user transactions with a business processes		
45%	23%	22%	
Organization	Defined escalation pathways for issues with network performance		
	73%	61%	44%
Knowledge	Centralized repository of network performance data		
	50%	38%	34%
	Job role based custom access to network performance data		
42%	29%	24%	

	Best-in-Class	Average	Laggards
Technology	Network visibility technology solutions currently in use:		
	<ul style="list-style-type: none"> ▪ 64% network performance monitoring through web interface ▪ 55% tools for remote analysis and troubleshooting of network performance ▪ 50% tools for creating custom profiles for monitoring groups of network hardware ▪ 45% unified platform for managing network performance and security ▪ 42% lab environment to simulate network performance ▪ 36% tools for flow data analysis 	<ul style="list-style-type: none"> ▪ 55% network performance monitoring through web interface ▪ 48% tools for remote analysis and troubleshooting of network performance ▪ 36% tools for creating custom profiles for monitoring groups of network hardware ▪ 13% unified platform for managing network performance and security ▪ 38% lab environment to simulate network performance ▪ 27% tools for flow data analysis 	<ul style="list-style-type: none"> ▪ 33% network performance monitoring through web interface ▪ 31% tools for remote analysis and troubleshooting of network performance ▪ 16% tools for creating custom profiles for monitoring groups of network hardware ▪ 9% unified platform for managing network performance and security ▪ 31% lab environment to simulate network performance ▪ 16% tools for flow data analysis
Performance	Measuring bandwidth consumption per application		
	92%	72%	55%

Source: Aberdeen Group, December 2007

Capabilities and Enablers

Based on the findings in the Competitive Framework and interviews with end users, Aberdeen’s analysis of the Best-in-Class reveals that the combination of internal capabilities developed and technology solutions deployed enables these organizations to achieve superior performance as compared to their peers

Process

Table 3 shows that Best-in-Class organizations are three-times more likely than Laggards to have the ability to understand interdependencies among

“It is very challenging for us to use several different tool sets to identify and resolve network performance issues. We are looking to adopt a unified solution for managing network performance for better network performance, cost reductions, and ease of management.”

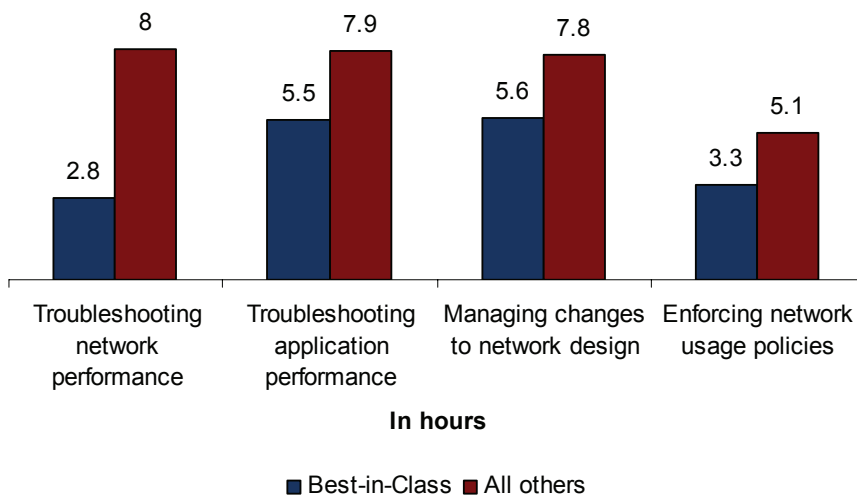
~ Network Architect,
IT Services Company

applications on the network. Having this capability in place allows faster troubleshooting of application performance and resolving issues before they impact end-users. In the study, four-times more Best-in-Class organizations report decreases in the number of calls to a help-desk related to network or application performance.

Best-in-Class organizations are nearly two-times more likely to have the ability to segment application response times into server, network, and application delay as compared to all others. This capability enables network management staff to isolate the root cause(s) of issues with application performance in a timely manner and to take the necessary actions to resolve them. Having this capability in place resulted in Best-in-Class organizations spending, on average, 5.5 hours per IT Full-Time Equivalent (FTE) per month troubleshooting issues with application performance as compared to 7.9 hours per IT FTE per month for all the others (Figure 4). Additionally, it allowed Best-in-Class organizations to have a 92% success rate in preventing issues with application performance as compared to a 40% success rate for all others.

It should be noted that Best-in-Class organizations are spending, on average, 11.6 hours less per IT FTE per month on troubleshooting network and application performance, managing changes to network design and enforcing network usage policies as compared to all others (Figure 4).

Figure 4: Time Spent per IT FTE per Month



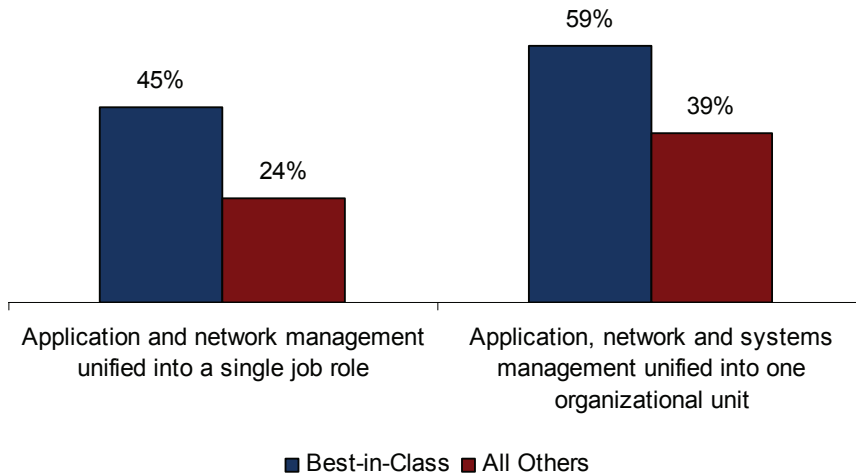
Source: Aberdeen Group, December 2007

Best-in-Class organizations are 62% more likely have defined baselines for normal network performance as compared to Laggards. This ability allows organizations to identify and resolve anomalies with network performance faster and more easily. Having this capability in place resulted in Best-in-Class organizations reporting a 70% average success rate in identifying users performing unauthorized tasks on the network as compared to a 29% success rate for Laggard organizations.

Organization

Figure 5 shows that Best-in-Class organizations are more likely to unify management of the network, applications, and systems and to establish formal lines of communication between different teams in charge of managing the enterprise infrastructure.

Figure 5: Organizational Capabilities Developed



Source: Aberdeen Group, December 2007

Best-in-Class organizations were 66% more likely to have defined pathways for issues with network performance as compared to Laggards. Unifying the management of the enterprise infrastructure allows organizations to gain a better understanding of interdependencies among different elements of the infrastructure. It also enables them to deal with potential performance issues and to plan and manage changes in more effective and efficient ways. Having these competencies in place contributed to Best-in-Class organizations, on average, reporting 134 minutes of unplanned network downtime per year as compared to 286 minutes for all others. Additionally, Best-in-Class organizations reported that, on average, they are able to manage 133 end-users more per help-desk FTE compared to Laggard organizations (424 end-users for Best-in-Class organizations as compared to 291 for Laggards).

In addition to improving the productivity of end-users and IT staff, having this capability in place contributed to an overall improvement in application performance; two-times more Best-in-Class organizations reported improvements in the quality of the end-user experience as compared to Laggards.

Knowledge Management

Best-in-Class organizations are 47% more likely to have a centralized repository of network performance data as compared to all others. Best-in-Class organizations were also 76% more likely to have tools for remote

troubleshooting and analysis of network performance as compared to Laggards. Having the ability to access performance data and resolve performance issues from anywhere resulted in operational efficiencies and improved performance. Aberdeen's research shows that the Best-in-Class are able to manage 59 end-users more per IT field service FTE as compared to Laggards (339 end-users for Best-in-Class as compared to 280 for Laggards). Also, 61% more of Best-in-Class organizations reported improvements in application availability as compared to Laggards.

Technology

Best-in-Class organizations are five-times more likely to manage network performance and security through a single platform as compared to Laggards. Deploying this functionality allows network managers to deal with network performance and security issues in more effective way and mitigate business process disruption. Having this capability in place contributed to Best-in-Class organizations reporting a 90% average success rate in resolving security issues before they disrupt business services, as compared to 42% average success rate for Laggard organizations.

Aberdeen's research shows that Best-in-Class organizations are three-times more likely to have tools for creating custom profiles for monitoring groups of network devices as compared to Laggards. This capability allows organizations to more quickly identify issues with network hardware and resolve them before they disrupt business processes and end-user productivity. Having this ability in place enabled Best-in-Class organizations, on average, to achieve an 89% success rate in resolving issues with network hardware before they impact end-users, as compared to only a 19% average success rate for Laggard organizations.

Best-in-Class organizations are 35% more likely to use a lab environment for simulating network performance in application pre-deployment stage as compared to Laggards. As organizations implement new business critical applications, the ability to estimate the impact of new technology rollouts on network and application performance becomes increasingly important. In the study, Best-in-Class organizations were two-times more likely to report improvements in their ability to accurately estimate the impact of new technology rollouts on network performance.

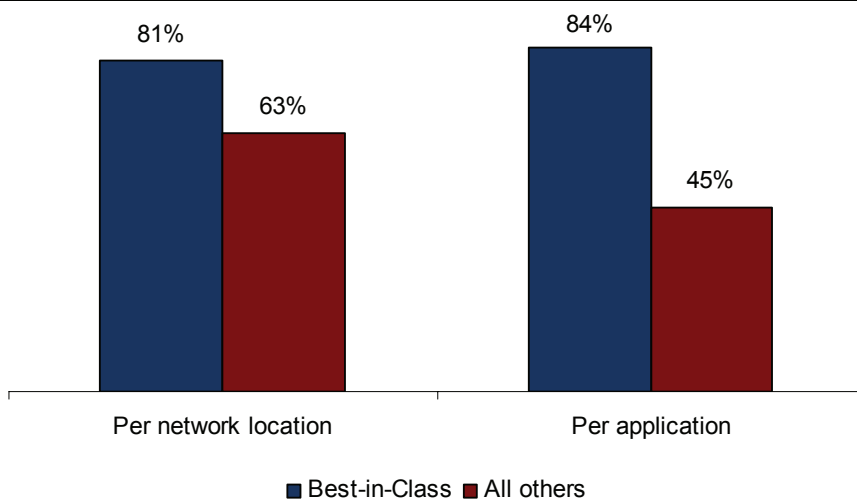
Table 3 shows that Best-in-Class organizations are two-times more likely to have tools for analyzing network flow data as compared to Laggards. Additionally, 45% of Best-in-Class organizations reported that they plan to add this functionality within the next 12 months. Having this capability in place allows network managers to gain visibility into network performance in a timely manner and make more accurate decisions about managing network changes. Figure 4 shows that Best-in-Class organizations are spending 5.2 hours less per IT FTE per month on troubleshooting issues with network performance as compared to Laggards. Additionally, they are spending 2.2 hours less per IT FTE per month on managing changes to the network design.

For purposes of this study, IT field service FTE has been defined as a member of IT staff who conducts visits to remote network locations to provide services related to troubleshooting, maintenance, repair, and change management.

Performance Management

Best-in-Class organizations are 67% more likely to measure bandwidth consumption per application as compared to Laggards. Having this competence allows organizations to gain better visibility into bandwidth utilization (Figure 6) and to more accurately estimate future bandwidth upgrade requirements. Aberdeen's research found that 76% more Best-in-Class organizations experienced improvements in bandwidth utilization as compared to Laggards. Best-in-Class organizations are 35% more likely to decrease cost of bandwidth services compared to Laggards as well.

Figure 6: Average Visibility into Bandwidth Consumption



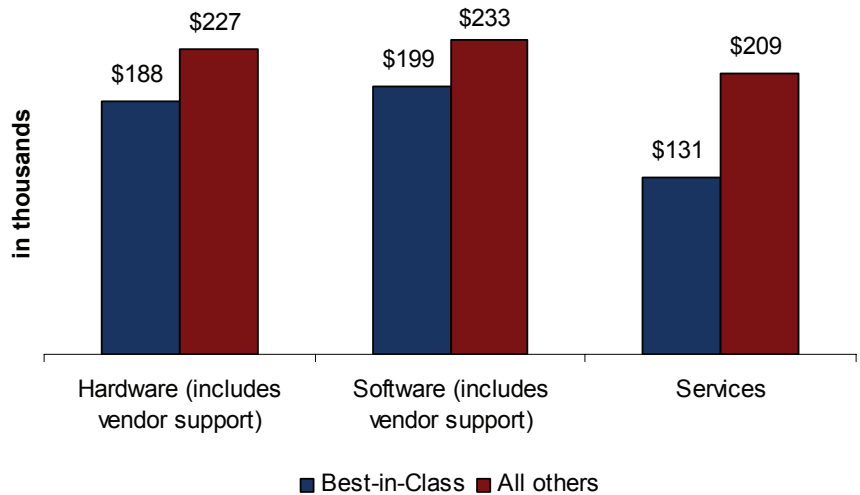
Source: Aberdeen Group, December 2007

It is apparent that Best-in-Class organizations are developing more robust capabilities for network visibility in comparison to their peers. As a result these organizations are having better success in achieving their operational and strategic goals for network management. The question is: why aren't Industry Average and Laggard organizations developing these same capabilities? Is it because they don't see the value in these technology solutions, or simply because they don't have enough resources to invest in network management?

Figure 7 shows that Industry Average and Laggard organizations are investing more in network visibility solutions than Best-in-Class organizations. Further explanation can be found in the Aberdeen Insights – Technology box at the end of this chapter.

Aberdeen's research found no correlation between company size with categorization into Best-in-Class, Industry Average, and Laggards. With that said, the average Best-in-Class organization in Aberdeen's survey reported \$1.5 billion in annual revenues compared to the average of \$1.1 billion for all others. Also, it is important to highlight that 41% of Best-in-Class organizations have annual revenues of \$100 million or less and 23% of Industry Average and Laggard organizations reported annual revenues of \$1 billion or more.

Figure 7: Annual Spend on Network Visibility Solutions



Source: Aberdeen Group, December 2007

It is evident that Best-in-Class organizations are able to achieve business benefits from leveraging network visibility solutions due to selecting the right mix of technology solutions to address their needs relating to network management. These organizations understand the strategic importance of network and application performance, and so they are achieving measurable business benefits by managing their networks effectively. Aberdeen's research indicates that the average end-user organization estimates the revenue loss attributable to unplanned network downtime at \$69,000 per minute. As Best-in-Class organizations are on average experiencing 152 minutes less in network downtime annually as compared to all others, these organizations are losing \$10.4 million less on an annual basis as compared to their peers.

Estimated revenue loss due to unplanned network of \$69,000 per minute was calculated as an average for all survey respondents across 21 different industries. It is evident that there were significant differences between industry sectors ranging from less than \$1,000 to more than \$1,500,000 per minute of unplanned network downtime.

Aberdeen Insights - Technology

Aberdeen's research shows that spending more on technology solutions for network performance management doesn't necessarily guarantee a better performance. Best-in-Class organizations are able to achieve superior performance, not because they have more network management technology in place, but because they are selecting the right combination of internally developed processes and technology solutions to address their network performance management needs. That comes as a result of a holistic approach that these organizations are taking to managing their overall enterprise infrastructure. Taking this type of approach enables Best-in-Class organizations to understand interdependencies among different elements that are impacting network and application performance and to select the most effective actions for managing each of these elements.

Chapter Three: Required Actions

Whether a company is trying to move its performance in network visibility from Laggard to Industry Average, or Industry Average to Best-in-Class, the following actions will help spur the necessary performance improvements:

Laggard Steps to Success

- **Establish baselines for normal network performance.** Aberdeen's research shows that 58% of Laggard organizations do not have defined baselines for normal network performance. Developing this capability enables organizations to more quickly identify anomalies in network and application performance. This capability must be combined with technology tools for analysis of network performance which allows network managers to not only identify issues, but also to troubleshoot and resolve them in timely fashion.
- **Use application response times to evaluate network performance.** Aberdeen's research shows that only 30% of Laggards are using application response time as a key performance indicator when evaluating network performance. Additionally, Laggard organizations are 57% more likely to use the number of end-user complaints as the key performance metric. Using application response times as the key metric allows organizations to set up performance thresholds that can be managed in a real-time. In order to ensure continuity of business processes, Laggard organizations must take a proactive approach to network management and make applications continuously available to end-users at optimal speed.
- **Develop capabilities for measuring bandwidth consumption per location and per application.** Figure 7 shows that Best-in-Class organizations are able to achieve a higher level of performance while spending less on hardware, software, and services for network management as compared to all others. In order to close the performance gap with Best-in-Class organizations, Laggards need to be able to accurately assess their needs for new investments in network management technologies. The ability to measure bandwidth consumption per location would allow Laggard organizations to distinguish locations that are in need of technologies for network optimization from those that are not. This allows organizations to improve network performance while optimizing the cost of bandwidth services and networking equipment.

The ability to measure bandwidth consumption per application allows organizations to make more accurate decisions about prioritizing network traffic and future bandwidth upgrades. It also

Fast Facts

- √ Laggard organizations should develop capabilities for measuring bandwidth consumption per location and per application
- √ Industry Average organizations should leverage tools for understanding dependencies of applications on the network
- √ Best-in-Class organizations should develop capabilities for simulating network performance in a lab environment

allows them to more accurately estimate the impact of new application rollouts on network performance.

Industry Average Steps to Success

- **Enable remote access to network performance data and remote troubleshooting of network performance.** Aberdeen's research shows that 62% of the Industry Average do not have a centralized repository of network performance data. Additionally, 52% of these organizations do not have tools for remote troubleshooting of network performance. Developing these capabilities allows an organization to reduce the number of IT staff in remote network locations as well as reduce the number of field-service employees needed for troubleshooting and resolving network performance issues. Additionally, a centralized repository of network performance data avoids redundancies in the types of performance data being stored and thus promotes operational efficiencies.
- **Leverage tools for understanding dependencies of applications on the network.** Aberdeen's research shows that 79% of Industry Average do not have the ability to understand interdependencies among applications on the network. The primary operational goals for these organizations is to accurately estimate the impact of planned changes to their networks, understand how different applications are impacting one another, and understanding the overall network performance is of crucial importance. Since enterprise networks are becoming more complex and difficult to manage this capability must be a key attribute for organizations that are striving to achieve full network visibility and optimal levels of performance.
- **Create custom profiles for monitoring groups of network hardware.** Industry Average organizations are reporting a 58% success rate in resolving issues with network hardware in timely manner. Creating custom profiles for monitoring groups of network hardware would enable these organizations to identify issues with network hardware before business services are disrupted. It would also allow them to improve the efficiency of their IT staff, since it would take fewer employees to manage the same number of network devices effectively.

“With respect to network performance and troubleshooting, I would recommend the selection of one of the tools that provides visibility of traffic by protocol and by well known application. The most tool is one that will graphically indicate transaction times divided into network time, platform (server) time, and application time. If such a tool is adopted by support teams responsible for these different areas, incident and problem related downtime can be reduced. Such tools are, of course, expensive. A business case needs to be built.”

~ Network Manager,
Professional Services

Best-in-Class Steps to Success

- **Develop capabilities for identifying the source of a delay in application response times.** Fifty percent (50%) of Best-in-Class organizations do not have the ability to segment application response times into network, server, and application delay. This capability is of crucial importance for organizations that are striving to mitigate the risk of business process disruption. Having this

functionality allows organizations to decrease the time required to troubleshoot and the mean time to repair network performance issues. It also allows them to improve the effectiveness of IT management staff and avoid finger-pointing within their IT departments.

- **Leverage flow data for network visibility.** Table 3 showed that 64% of Best-in-Class organizations do not have tools in place for analyzing network flow data. Even though 45% of these organizations are planning to deploy this functionality within next 12 months, Best-in-Class organizations should combine different network visibility techniques to achieve full network visibility capabilities. Combining flow data analysis with response time analysis and packet capture capabilities would enable these organizations to take complete control over their networks and ensure that their goals for network management are achieved in full.
- **Develop capabilities for simulating network performance in a lab environment.** In order to maintain a high level of network and application performance and effectively deal with increasing network complexity, Best-in-Class organizations must develop capabilities that will allow them to seamlessly roll-out new applications on their network. Simulating the impact of network changes in a lab environment prior to deployment enables organizations to conduct the rollout of new technologies without disrupting business processes. As organizations are deploying VoIP and other bandwidth-intensive applications, the ability to maintain the control of network performance while making major changes to the enterprise infrastructure is of crucial importance.

Aberdeen Insights - Summary

The biggest challenge that Best-In-Class organizations are currently facing is what they need to do to prepare themselves for the next stage in the evolution of network performance management: seamless deployment of VoIP and video applications. Expanding capabilities for the analysis of application response times and network simulation, combined with adding network flow analysis capabilities to the mix of technology solutions currently deployed, will allow these organizations to deal with VoIP deployments in a more effective way. As organizations are adopting VoIP, video, and other bandwidth-intensive applications, achieving full visibility into network and application performance is more important than ever before.

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Appendix A: Research Methodology

In December 2007, Aberdeen examined the use, the experiences, and the intentions of more than 200 enterprises using network monitoring, analytics, and simulation technologies in a diverse set of enterprises.

Aberdeen supplemented this online survey effort with interviews with select survey respondents, gathering additional information on network monitoring, analytics, and simulation strategies, experiences, and results.

Responding enterprises included the following:

- **Job title / function:** The research sample included respondents with the following job titles: network or IT manager (26%); IT or MIS director (20%); senior management (19%); and network management staff (10%).
- **Industry:** The research sample included respondents from 21 industries. Some of the largest industry segments were: high technology / software (15%); manufacturing (13%); education (11%); computer equipment and peripherals (9%); finance / banking (9%); and retail (6%).
- **Geography:** The majority of respondents (59%) were from North America. The majority of remaining respondents were from Europe (20%) and Asia-Pacific region (14%).
- **Company size:** Thirty-one percent (29%) of respondents were from large enterprises (annual revenues above US \$1 billion); 34% were from midsize enterprises (annual revenues between \$50 million and \$1 billion); and 37% of respondents were from small businesses (annual revenues of \$50 million or less).
- **Headcount:** Twenty-four percent (28%) of respondents were from small businesses (headcount between 1 and 99 employees); 25% were from midsize enterprises (headcount between 100 and 999 employees); and 47% of respondents were from large enterprises (headcount greater than 1,000 employees).

Solution providers recognized as sponsors of this report were solicited after the fact and had no substantive influence on the direction of *The Real Value of Network Visibility* Benchmark Report. Their sponsorship has made it possible for Aberdeen Group to make these findings available to readers at no charge.

Study Focus

Responding executives completed an online survey that included questions designed to determine the following:

- √ The degree to which network monitoring, analytics, and simulation solutions are deployed on their networks and the implications of the technology
- √ The structure and effectiveness of existing network monitoring, analytics, and simulation implementations
- √ Current and planned use of network monitoring, analytics, and simulation solutions to aid operational and promotional activities
- √ The benefits, if any, that have been derived from network monitoring, analytics, and simulation initiatives

The study aimed to identify emerging best practices for network visibility use, and to provide a framework by which readers could assess their own management capabilities

Table 4: The PACE Framework Key

Overview
<p>Aberdeen applies a methodology to benchmark research that evaluates the business pressures, actions, capabilities, and enablers (PACE) that indicate corporate behavior in specific business processes. These terms are defined as follows:</p> <p>Pressures — external forces that impact an organization’s market position, competitiveness, or business operations (e.g., economic, political and regulatory, technology, changing customer preferences, competitive)</p> <p>Actions — the strategic approaches that an organization takes in response to industry pressures (e.g., align the corporate business model to leverage industry opportunities, such as product / service strategy, target markets, financial strategy, go-to-market, and sales strategy)</p> <p>Capabilities — the business process competencies required to execute corporate strategy (e.g., skilled people, brand, market positioning, viable products / services, ecosystem partners, financing)</p> <p>Enablers — the key functionality of technology solutions required to support the organization’s enabling business practices (e.g., development platform, applications, network connectivity, user interface, training and support, partner interfaces, data cleansing, and management)</p>

Source: Aberdeen Group, December 2007

Table 5: The Competitive Framework Key

Overview	
<p>The Aberdeen Competitive Framework defines enterprises as falling into one of the following three levels of practices and performance:</p> <p>Best-in-Class (20%) — Practices that are the best currently being employed and are significantly superior to the Industry Average, and result in the top industry performance.</p> <p>Industry Average (50%) — Practices that represent the average or norm, and result in average industry performance.</p> <p>Laggards (30%) — Practices that are significantly behind the average of the industry, and result in below average performance.</p>	<p>In the following categories:</p> <p>Process — What is the scope of process standardization? What is the efficiency and effectiveness of this process?</p> <p>Organization — How is your company currently organized to manage and optimize this particular process?</p> <p>Knowledge — What visibility do you have into key data and intelligence required to manage this process?</p> <p>Technology — What level of automation have you used to support this process? How is this automation integrated and aligned?</p> <p>Performance — What do you measure? How frequently? What’s your actual performance?</p>

Source: Aberdeen Group, December 2007

Table 6: The Relationship Between PACE and the Competitive Framework

PACE and the Competitive Framework – How They Interact
<p>Aberdeen research indicates that companies that identify the most impactful pressures and take the most transformational and effective actions are most likely to achieve superior performance. The level of competitive performance that a company achieves is strongly determined by the PACE choices that they make and how well they execute those decisions.</p>

Source: Aberdeen Group, December 2007

Appendix B: Related Aberdeen Research

Related Aberdeen research that forms a companion or reference to this report include:

- [Optimizing WAN for Application Acceleration](#); October, 2007
- [Network Transformations: Managing Transitions for Growth](#); May, 2007

Information on these and any other Aberdeen publications can be found at www.Aberdeen.com.

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