

# The Roadmap to the Next Generation Branch Office Networks

February 2008

~ Underwritten, in part, by ~



## Executive Summary

Aberdeen surveyed 177 organizations in January and February of 2008 to explore best practices for optimizing branch office networks and enabling seamless access to corporate data by remote workers. This report reveals what impact Best-in-Class strategies and capabilities are having on application and network performance in branch office networks and the associated networking costs.

### Best-in-Class Performance

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Aberdeen used three key performance criteria to distinguish Best-in-Class companies: 1) performance improvements of business critical applications at the branch, 2) application performance at the branch as compared to central network location, and 3) number of end-user complaints due to network performance at the branch as compared to central network location. Best-in-Class organizations reported:

- 100% improved performance of business critical applications at the branch
- 79% have same or better application performance at branch offices as compared to central network locations
- 15% fewer end-user complaints due to network performance at branch offices as compared to central network locations

### Competitive Maturity Assessment

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

- Two-times more likely to have tools for monitoring and enforcing the compliance to usage policies as compared to Laggards
- Two-times more likely to have the tools in place for prioritization of business critical applications as compared to Laggards
- Three-times more likely to have protocol-specific optimization tools in place as compared to Laggards

### Required Actions

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

- Develop capabilities for prioritization of business-critical applications
- Develop capabilities for remote management of branch office networks
- Use historic performance data when making decisions about branch upgrades
- Deploy tools for application acceleration and data reduction

#### 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

"The key issue with network performance is how to get a good handle on what types of traffic you are experiencing when you are seeing higher throughput rates, and educating users on flow of traffic through the network."

~ IT Director, Utilities  
Company

*Send to a Friend* 

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## Chapter One: Benchmarking the Best-in-Class

### Business Context

As organizations expand their presence into new areas and geographies as well as attempt to acquire top talent worldwide and better serve their customers, more of their employees are working outside of central network locations. Aberdeen's research has found that, on average, 52% of the total workforce is working outside of corporate headquarters - either as dedicated branch office employees or as individual remote and mobile workers. Additionally, end-user organizations expect that number to increase by 7% by the end of 2008. The challenge for these organizations is how to deliver corporate data to the remote workforce in a seamless and cost-efficient way.

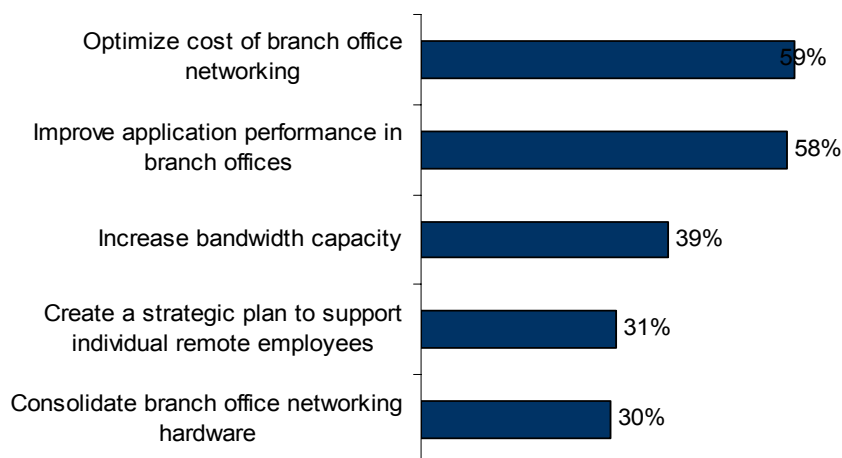
### Finding the Balance Between Performance and Cost

Aberdeen's research shows that the top business pressures driving organizations to focus resources on optimizing branch office networks are:

- Need to improve employee productivity - 83% of organizations
- Need to optimize networking costs - 56%
- Need to insure business continuity - 53%
- Need to protect corporate data - 47%

In order to address these pressures, organizations are taking the strategic actions shown in Figure 1.

**Figure 1: Top Strategic Actions Taken**



Source: Aberdeen Group, February 2008

Eighty-three percent (83%) of organizations reported that the need to improve employee productivity is the top driver for optimizing branch office

### Fast Facts

- √ 52% of total workforce is working outside of corporate headquarters
- √ 62% of servers and 65% of enterprise applications have been centralized
- √ On average, organizations are allocating 10.4% of their total IT budgets to performance improvements of branch office networks

networks, and it should be noted that on average organizations are allocating 10.4% of their total IT budgets to performance improvements of remote office networks. It should also be noted that, on average, organizations are spending \$2.4 million annually on enterprise applications. These investments are being made predominantly to help achieve some of their top strategic goals: to serve their customers better, to improve employee productivity, and collaboration in the value chain. Significant investments in enterprise applications can be justified only if the optimal level of performance can be achieved. So it isn't surprising that 58% of organizations have indicated that improving application performance is their top action among their planned branch office networking initiatives.

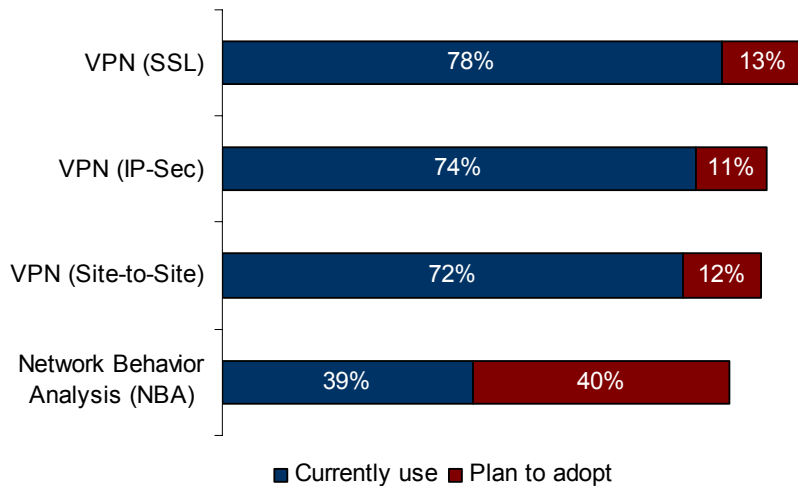
End-user organizations report that 62% of their servers and 65% of their enterprise applications have been centralized. As increasing numbers of end-users access corporate data over the Wide Area Networks (WAN), IT departments must deal with the challenges of limited bandwidth capacity, latency, and packet loss that can cause network and application performance to deteriorate. Aberdeen's October 2007 benchmark study, [\*Optimizing WAN for Application Acceleration\*](#), reported that 93% of organizations have increased their bandwidth capacity over the last two years. This trend will continue in 2008 as, on average, organizations estimate a 104% increase in total bandwidth capacity in the next 12 months. Adding more bandwidth capacity is costly and it does not guarantee improvement in network performance; Aberdeen's research shows that 47% of all organizations that increased their bandwidth capacity over the last two years did not experience any improvement in application performance. As remote employees demand LAN-like performance for business critical applications, organizations are trying to find the right balance between ensuring a high level of application performance at the branch and keeping the cost of telecommunications services and networking hardware under control.

### **Adding Business Continuity and Security into the Mix**

Figure 1 shows that ensuring business continuity and protecting corporate data are two of the top strategic actions that organizations are taking to optimize their branch-office networking. As organizations protect their corporate data by centralizing the storage of information, back-up and retrieval of this data puts even more pressure on total bandwidth capacity requirements.

Organizations also need to ensure that their data is transferred over the WAN in a secure way and to prevent security breaches or data loss. Aberdeen's upcoming research for *The 2008 Aberdeen Report*, based on insights from more than 9,000 IT decision makers worldwide reveals that in the near future close to 80% of organizations will have Virtual Private Networks (VPN) and solutions for Network Behavior Analysis (NBA) implemented (Figure 2). As more end-users access corporate data over WANs, organizations are developing capabilities to address potential issues regarding the security and integrity of the data that is being transferred.

**Figure 2: Capabilities Developed and Plans for Adoption**



Source: Aberdeen Group, February 2008

The combination of security concerns and business continuity initiatives, plus the pressures of improved network / application performance and controlling networking costs, is driving enterprises to both develop internal competencies and to implement technology solutions in order to achieve their goals for branch office networking.

### The Maturity Class Framework

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

- Change in the performance of business critical applications at the branch
- Application performance at the branch as compared to central network location
- Number of end-user complaints due to network performance at the branch as compared to central network location

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

Definition of Maturity Class	Mean Class Performance
<p><b>Best-in-Class:</b> Top 20% of aggregate performance scorers</p>	<ul style="list-style-type: none"> <li>▪ 100% <b>improved</b> performance of business critical applications at the branch</li> <li>▪ 79% <b>same or better</b> application performance at branch offices as compared to central network locations</li> <li>▪ 15% <b>fewer</b> end-user complaints on average due to network performance at branch offices as compared to central network locations</li> </ul>

Definition of Maturity Class	Mean Class Performance
<p><b>Industry Average:</b> Middle 50% of aggregate performance scorers</p>	<ul style="list-style-type: none"> <li>▪ 22% <b>improved</b> performance of business critical applications at the branch</li> <li>▪ 50% <b>same or better</b> application performance at branch offices as compared to central network locations</li> <li>▪ 14% <b>more</b> end-user complaints due to network performance at branch offices as compared to central network locations</li> </ul>
<p><b>Laggard:</b> Bottom 30% of aggregate performance scorers</p>	<ul style="list-style-type: none"> <li>▪ 55% performance of business critical applications at the branch <b>declined</b></li> <li>▪ 71% <b>worse</b> application performance at branch offices as compared to central network locations</li> <li>▪ 38% <b>more</b> end-user complaints due to network performance at branch offices as compared to central network locations</li> </ul>

Source: Aberdeen Group, February 2008

## The Best-in-Class PACE Model

Optimizing branch office networks 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"> <li>▪ Need to improve employee productivity</li> </ul>	<ul style="list-style-type: none"> <li>▪ Improve application performance in branch offices</li> <li>▪ Optimize cost of branch office networking</li> </ul>	<ul style="list-style-type: none"> <li>▪ Remote management of branch office networks</li> <li>▪ Branch upgrades performed based on historic performance data</li> <li>▪ Centralized management of WAN optimization appliances</li> <li>▪ Ability to use flow data to monitor network performance</li> <li>▪ Ability to control network maintenance and configuration locally</li> </ul>	<ul style="list-style-type: none"> <li>▪ Tools for prioritization of business-critical applications</li> <li>▪ Protocol specific optimization tools</li> <li>▪ Tools for deep packet inspection</li> <li>▪ Unified platform for managing visibility of application performance and QoS</li> <li>▪ Tools for auto troubleshooting of application response times</li> <li>▪ Tools to monitor and enforce usage policies</li> <li>▪ Lab environment for simulating application performance over the WAN</li> </ul>

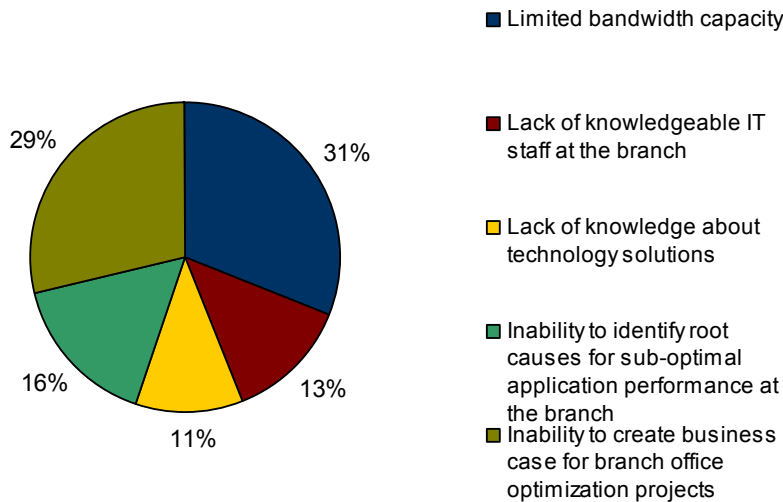
Source: Aberdeen Group, February 2008

## Obstacles to Optimal Performance of Branch Office Networks

Aberdeen's research shows that only 39% of organizations have optimized more than half of their branch office locations to ensure an optimal level of performance and cost savings. Additionally, Figure 3 shows that end-user

organizations list limited bandwidth capacity and an inability to create a business case for branch office optimization projects as the top obstacles to optimizing application performance. And, interestingly, next on the list of obstacles was a lack of ability to even identify the root cause of sub-optimal application performance.

**Figure 3: Top Obstacles to Achieving Optimal Application Performance at the Branch**



Source: Aberdeen Group, February 2008

### **When Do You Say, "We Need More Bandwidth"?**

Thirty-six percent (36%) of organizations participating in Aberdeen's research indicate that they plan on implementing 10Gb networks by the end of 2009. However, 52% of organizations that see bandwidth capacity as their top challenge for application performance at the branch reported that their visibility into bandwidth consumption per application is 50% or lower. Additionally, only 27% of these organizations have tools in place to monitor and enforce network usage policies. With increasing numbers of bandwidth intensive applications being rolled out, available bandwidth capacity is surely an issue for many end-user organizations. However, prior to making additional investments in increasing bandwidth capacity organizations need to gain visibility into how the existing capacity is being used and then develop the capabilities to enforce the usage policies.

### **Getting C-Level Executives Involved**

Organizations that reported the inability to create a business case as their top obstacle are spending, on average, \$2.7 million on enterprise applications annually (as compared to the average of \$2.1 million for all organizations that participated in Aberdeen's research) with \$486,000 being spent specifically on branch office rollouts. But, these organizations reported that on average only 41% of their remote network locations have

"I make sure that on a monthly basis I am looking at the trending of individual links; 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

been optimized as compared to 62% for all survey respondents and 75% for Best-in-Class organizations. As a result, 56% of these organizations reported that the number of performance related end-user complaints is higher at the branches than in central network locations. It is notable that these organizations are spending more on enterprise applications as compared to their peers, but when it comes to their ability to deliver corporate data to their remote employees in a seamless way they still lag behind the rest of the market. Aberdeen's research shows that for 76% of these organizations, purchasing decisions involving the optimization of branch office networks are being made at central network locations. However, developing and executing projects for branch office optimization should be given a higher priority on corporate agendas (not only IT agendas) for these organizations. The decision making process for optimizing branch office networks should include IT managers from remote and central network locations as well as the members of senior management.

#### **Aberdeen Insights — Strategy**

Organizations are evaluating their initiatives by the level of achievement of each of their goals: application performance at the branch, optimal networking cost, ensured business continuity, and a high level of data security. Achieving each of these goals is associated with set of challenges, and achieving all of these goals is a complex project that requires enterprise-wide effort.

As a first step toward true next generation branch office networks, organizations need to perform an in-depth assessment to better understand what the top challenges are. Figure 3 illustrates that the top challenges of branch office networking can be summarized as: lack of appropriate technology tools, lack of education, and the lack of executive awareness about the significance of optimizing branch area networks.

Considering the percentage of total IT budgets that are being allocated to branch office networking, as well as the amount of annual spending on enterprise applications, and the percentage of the total workforce that is working remotely, dealing with these challenges goes well beyond the responsibilities of just IT management and network administrators. Their success in optimizing branch office networks will depend on their ability to engage all the right stakeholders within their organizations and jointly develop their own roadmaps to the next generation branch office networks.

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

## Chapter Two: Benchmarking Requirements for Success

The development of internal processes, organizational capabilities, and technology selection play a crucial role in an organization's ability to improve the performance of branch office networks.

### Case Study – Educational Institution

An educational institution in the American Midwest is using videoconferencing to collaborate with lecture groups overseas. The university is deploying a technology solution for deep packet inspection.

The Network Engineer for this university said, "Videoconferencing capabilities are critical for us. The latency wasn't too much of an issue, but the performance was suffering - mostly due to packet loss. In August of 2006, we deployed the solution for deep packet inspection, and performance of videoconferencing is like day and night between now and then. This solution enables us to set minimum bandwidths for certain user groups. If a maximum is going to be reached, IT management staff can be notified. For us, bandwidth management is not too much of a challenge. The challenge is finding the balance between effective bandwidth management and preventing a packet loss. Based on our needs, the better layer seven capabilities are, the better the box is."

### Fast Facts

- √ Best-in-Class organizations are 91% more likely to improve employee productivity at branch offices as compared to Laggards
- √ Seven-times more Best-in-Class organizations reported improvements in consistency between application performance between the branch and central office location as compared to Laggards

### Competitive Assessment

Aberdeen Group analyzed the aggregated metrics of surveyed companies to determine whether their performance 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.** Remote management of branch office networks; ability to use flow data to monitor network performance; ability to control network maintenance and configuration locally
2. **Organization.** Centralized management of WAN optimization appliances
3. **Knowledge management.** Branch upgrades performed based on historic performance data
4. **Technology.** The selection of appropriate tools, and the effective deployment of those tools
5. **Performance management.** The ability to measure bandwidth utilization per network location

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

**Table 3: The Competitive Framework**

	Best-in-Class	Average	Laggards
<b>Process</b>	Remote management of branch office networks		
	83%	43%	35%
	Ability to use flow data to monitor network performance		
	64%	41%	15%
<b>Organization</b>	Ability to control network maintenance and configuration locally		
	55%	50%	37%
<b>Knowledge</b>	Centralized management of WAN optimization appliances		
	68%	46%	24%
<b>Technology</b>	Branch upgrades performed based on historic performance data		
	71%	49%	38%
	Branch office networking technology currently in use:		
	<ul style="list-style-type: none"> <li>▪ 61% Tools for prioritization of business-critical applications</li> <li>▪ 58% Protocol specific optimization tools</li> <li>▪ 54% Tools for deep packet inspection</li> <li>▪ 46% Unified platform for managing visibility of application performance and QoS</li> <li>▪ 44% Tools for auto troubleshooting of application response times</li> <li>▪ 43% Tools to monitor and enforce usage policies</li> <li>▪ 37% Lab environment for simulating application performance over the WAN</li> </ul>	<ul style="list-style-type: none"> <li>▪ 45% Tools for prioritization of business-critical applications</li> <li>▪ 39% Protocol specific optimization tools</li> <li>▪ 28% Tools for deep packet inspection</li> <li>▪ 28% Unified platform for managing visibility of application performance and QoS</li> <li>▪ 24% Tools for auto troubleshooting of application response times</li> <li>▪ 27% Tools to monitor and enforce usage policies</li> <li>▪ 31% Lab environment for simulating application performance over the WAN</li> </ul>	<ul style="list-style-type: none"> <li>▪ 31% Tools for prioritization of business-critical applications</li> <li>▪ 18% Protocol specific optimization tools</li> <li>▪ 13% Tools for deep packet inspection</li> <li>▪ 9% Unified platform for managing visibility of application performance and QoS</li> <li>▪ 13% Tools for auto troubleshooting of application response times</li> <li>▪ 23% Tools to monitor and enforce usage policies</li> <li>▪ 13% Lab environment for simulating application performance over the WAN</li> </ul>
	Measuring bandwidth utilization per network location		
	80%	64%	42%
	<b>Performance</b>		
	80%	64%	42%

"We were experiencing two hours per day of peak traffic where we were running at 98% of network capacity. Since we implemented QoS appliance we've been able to block P2P traffic on the academic side and to limit it on residential side. On the residential side, P2P traffic constitutes 80% of all uploads, so we had to develop policies to limit that type of traffic in order to preserve the health of our converged IP network. This allowed us to optimize our bandwidth costs and improve the performance of applications that are critical in our academic environment."

~ IT Manager, Education

Source: Aberdeen Group, February 2008

## Capabilities and Enablers

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Based on the findings of the Competitive Framework and interviews with end users, Aberdeen's analysis of the Best-in-Class reveals that these organizations are able to outperform their peers due to the combination of internal capabilities developed and several key technology solutions they have in place.

### Process

Table 3 shows that Best-in-Class organizations are two-times more likely to have capabilities for remote management of branch office locations as compared to Laggards. Additionally, Best-in-Class organizations are 49% more likely to have the ability to control network maintenance and configuration locally as compared to Laggards. Having these capabilities in place allows organizations to improve the reliability of their networks and to reduce resources needed for network management. That contributed to Best-in-Class experiencing 9% less of unplanned network downtime at the branch as compared to central office locations as opposed to Laggards reporting 21% more downtime at the branch as compared to central locations. In addition, Best-in-Class organizations are 91% more likely to improve employee productivity at the branch.

Best-in-Class organizations are four-times more likely to have the ability to use flow data to analyze network performance than Laggards. This capability allows end-user organizations to gain better visibility into network performance and resolve potential performance issues in a timely manner. As a result, Best-in-Class organizations are eight-times more likely to improve their ability to resolve issues with network performance before end-users are impacted.

### Organization

Best-in-Class organizations are twice as likely to have the ability to centrally manage WAN optimization appliances as compared to Laggards. This capability allows network administrators to gain better control over the networking hardware and conduct maintenance and updates more effectively. As a result, on average Best-in-Class reported 85% visibility into networking hardware as compared 59% for Laggard organizations.

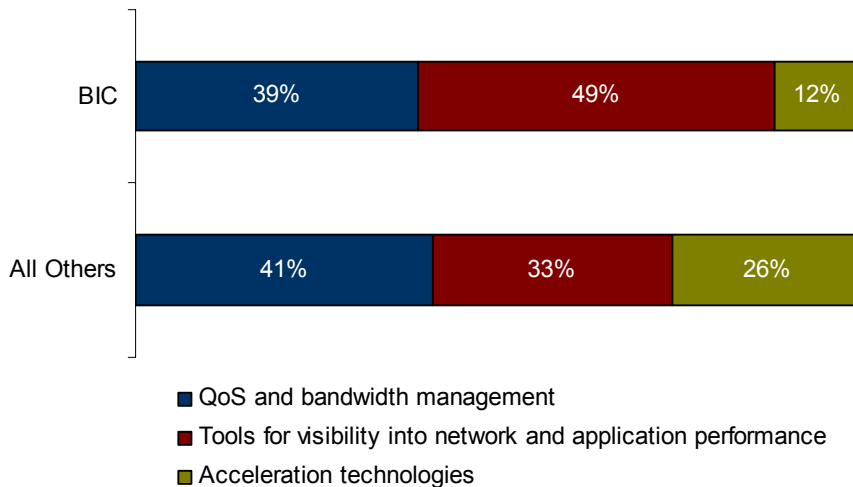
### Knowledge Management

Best-in-Class organizations are 67% more likely than all others to conduct branch upgrades based on historic data on network performance. This capability enables network managers to make more accurate decisions regarding the needs for additional networking equipment and services. Having this capability in place contributed to Best-in-Class being 40% more likely to reduce the cost of bandwidth services (measured as a percentage of total IT spend) as compared to all others.

### Technology

Table 3 shows that Best-in-Class organizations are more likely to be using several different technologies for optimizing branch office networks. These technologies include solutions for bandwidth management, remote management of branch office networks, visibility into network and application performance as well as solutions for reducing the amount of WAN traffic and accelerating business-critical applications. Best-in-Class companies also differentiate themselves by the level of importance they place on particular tools. When compared to all others, Best-in-Class organizations were 48% more likely to report that the tools for visibility into network and application performance have higher importance for their branch office networking initiatives than tools for bandwidth management or application acceleration (Figure 4).

**Figure 4: Technology Enablers - The Highest Importance**



Source: Aberdeen Group, February 2008

Additionally, the Best-in-Class were two-times less likely to report that technology tools for application acceleration and the reduction of network traffic have the highest priority as compared to the rest of the market. This is not to say that Best-in-Class organizations are not seeing value in solutions for bandwidth management and application acceleration. As compared to their peers, Best-in-Class organizations are much more likely to have these tools in place and are able to achieve measurable business benefits from the deployment of these solutions. However, Best-in-Class organizations are seeing that full visibility into network and application performance is a necessary prerequisite for gaining full control over their networks. This allows them to make fully informed decisions about technology solutions that are required for optimizing branch office networks.

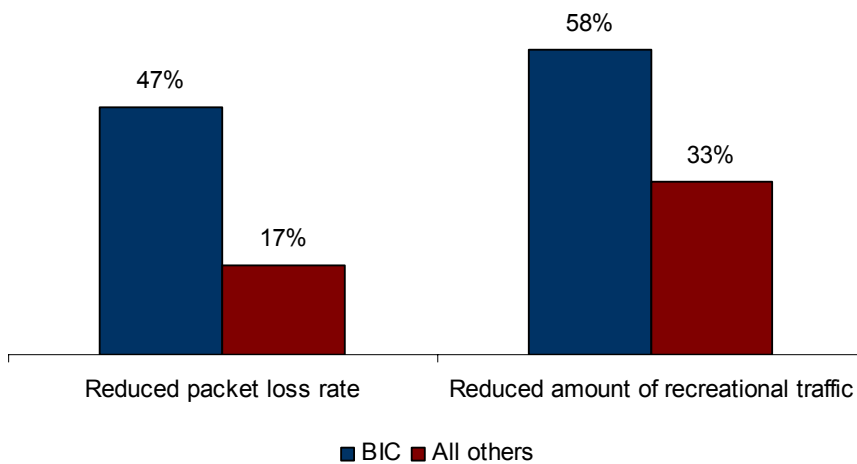
The following section highlights the business benefits that are associated with the deployment of each of these classes of the technology and reveals

how the approach that Best-in-Class organizations are taking allows them to outperform their peers by a significant margin.

### **Quality-of-Service (QoS) and Bandwidth Management**

On average, end-user organizations estimated that 47% of their total bandwidth capacity is being occupied by non-critical usage. These organizations are looking to increase their existing bandwidth capacity by an average of 108% by the end of 2008. However, Best-in-Class organizations are nearly twice as likely to have the tools in place for prioritization of business critical applications as compared to Laggards. Additionally, Best-in-Class organizations are four-times more likely than Laggards to have tools for deep packet inspection. These tools allow end-users to dedicate a sufficient amount of bandwidth to mission-critical and time-sensitive applications and limit the amount of bandwidth used for non-critical usage. As a result, Best-in-Class are five-times more likely to improve performance of business critical applications at the branch as compared to Laggards. Additionally, Best-in-Class are nearly four-times more likely than Laggards to report improvements in bandwidth utilization.

**Figure 5: Performance Improvements**

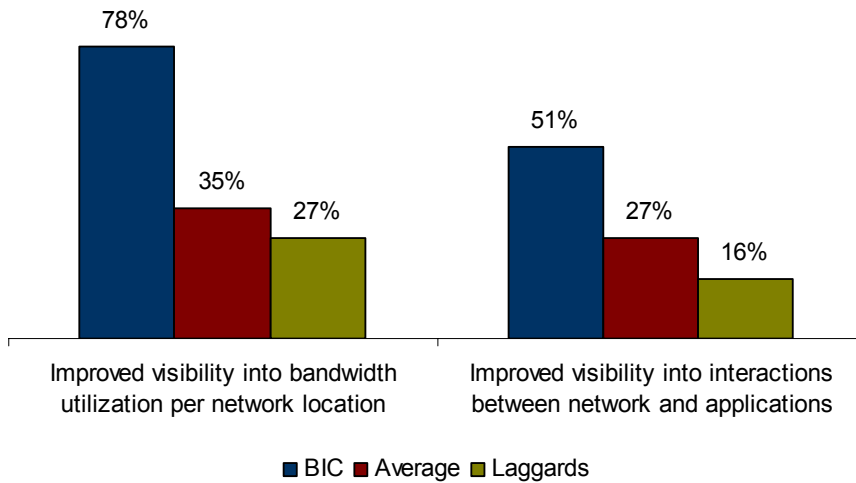


Source: Aberdeen Group, February 2008

### **Visibility into Network and Application Performance**

Best-in-Class organizations are nearly two-times more likely to have tools for monitoring and enforcing the compliance to usage policies as compared to Laggards. Additionally, Best-in-Class organizations are three-times more likely than Laggards to have tools for auto troubleshooting issues with application response times and three-times more likely have capabilities for simulating application performance over the WAN.

**Figure 6: Improvements in Network and Application Visibility**



Source: Aberdeen Group, February 2008

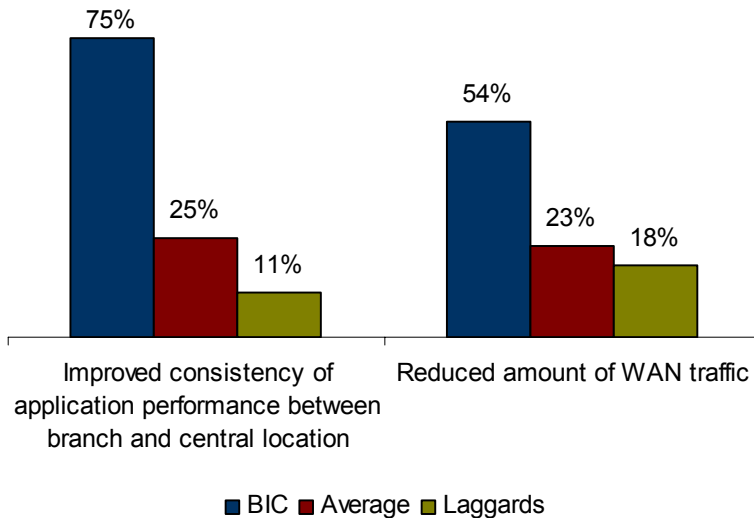
Having these tools in place allowed Best-in-Class organizations to better understand what the root causes are for issues with application and network performance. More importantly, this allows them to take full control over their networks and make fully educated decisions about eliminating these issues. Best-in-Class organizations are nearly two-times more likely to improve the ability to identify bandwidth bottlenecks as compared to Laggards, and two-times more likely to improve the ability to resolve issues with application protocol bottlenecks. Having these capabilities in place allowed Best-in-Class organizations to achieve significant business benefits measured by operational cost as well as employee productivity. Aberdeen's research shows that Best-in-Class organizations are twice as likely to improve productivity of IT staff at branch offices as compared to Laggards. Additionally, having a control over network and application performance allowed Best-in-Class organizations to enable their customer facing employees to be more effective. Ninety-three percent (93%) of Best-in-Class organizations reported improvements in customer satisfaction as compared to only 24% of Laggard organizations.

Figure 4 highlights that 88% of Best-in-Class organizations reported that technology solutions for network visibility, QoS, or bandwidth management have the highest priority for branch office optimization projects. Additionally, these organizations are five-times more likely to be deploying a unified platform for managing QoS and visibility into network and application performance as compared to Laggards (Table 3). Deploying these platforms enables organizations to define baselines, monitor and compare performance to these baselines, as well as enforce usage policies and centrally manage network appliances.

Having these tools in place contributed to Best-in-Class organizations being two-times more likely to improve visibility into bandwidth consumption per application. That contributed to seven-times more Best-in-Class reporting

improvements in consistency between application performance between the branch and central office location as compared to Laggards (Figure 7).

**Figure 7: Best-in-Class Are More Likely to Overcame Obstacles of Branch Office Networking**



Source: Aberdeen Group, February 2008

### **Application Acceleration and WAN Traffic Reduction**

Aberdeen's October 2007 benchmark report, [Optimizing WAN for Application Acceleration](#), shows that, on average the amount of WAN traffic has increased by 136% over the last two years. Although organizations are planning significant increases in bandwidth capacity in 2008, it does not guarantee an optimal level of WAN performance.

In response, Best-in-Class organizations are investing in technology solutions that will enable them to deal with the challenges of increased WAN traffic. These organizations are three-times more likely to have protocol-specific optimization tools in place as compared to Laggards. Additionally, Best-in-Class organizations are twice as likely to have tools for identifying and locally storing data relevant for each network location. Having these tools in place allows Best-in-Class organizations to accelerate business critical applications and to reduce the amount of data that is being sent over the WAN. Best-in-Class organizations are 63% more likely to reduce WAN latency as compared to Laggards. Additionally, Best-in-Class organizations are 86% more likely than Laggards to reduce document transfer times.

Figure 7 shows that the ability to reduce the amount of WAN traffic and accelerate business-critical applications allows Best-in-Class organizations to improve the consistency of application performance and to outperform their peers by more than a significant margin.

Fifty-three percent (53%) of organizations in Aberdeen's survey have 25 employees or less per branch location and 40% have 100 or more mobile

workers (spending more than 25% on the road). In order to enable these individuals to be more productive, Best-in-Class organizations are deploying desktop-based solutions for application acceleration. Also, having small branch offices makes it difficult to justify investments in appliances for WAN optimization and application acceleration so organizations are instead choosing software-based solutions. Best-in-Class organizations are 50% more likely to have these tools in place as compared to Laggards. As a result, Best-in-Class organizations are two-times more likely to improve their road-warrior's relative effectiveness as compared to Laggards. Additionally, Best-in-Class are twice as likely to experience cost savings from reduced enterprise infrastructure.

Aberdeen's research highlighted eight different technology enablers that are allowing Best-in-Class organizations to achieve a superior level of performance. It is apparent that the deployment of each of these solutions is associated with operational and business benefits for branch office networking. However, organizations that are achieving their goals around application performance, networking cost, business continuity and data protection are deploying all eight of these enablers. The combination of the technologies, together with the internal capabilities they have developed enables them to achieve these goals.

#### **Aberdeen Insights — Technology**

An organization's needs for networking technology solutions differ based on company size, network design, and the industry sector in which they operate. Organizations that have branch offices with 20 employees or less have different needs than organizations that have 100 to 150 employees per location. However, these organizations share the challenge of managing an increasing number of employees working outside of central network locations and the fact that more data is being centralized. By the end of 2008, 56% of the total workforce will be working outside of corporate headquarters and only 29% of corporate data will be stored in remote office locations. Best-in-Class organizations understand that the obstacles of branch office networking can be overcome with the optimal level of performance, cost, and security. However, only with the right mix of technology enablers and organizational capabilities will these goals be reached. These organizations also realize that in order to achieve their strategic goals for branch office networking, they need to develop a diverse set of capabilities and competencies. The actions that Best-in-Class organizations are taking are allowing them to support their entire workforce regardless of an employee's physical location.

## Chapter Three: Required Actions

Whether a company is trying to move its performance in optimizing branch office networks 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

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- **Use historic performance data when making decisions about branch upgrades.** Sixty-two percent (62%) of Laggard organizations do not use historic data on network performance when making decisions about updating branch network locations. Developing capabilities to capture, store, and analyze network performance data would allow these organizations to identify performance bottlenecks and make more accurate decisions about locations that need optimization. As compared to Laggards, Best-in-Class organizations are nearly three-times more likely to optimize not all branch office locations, but only those that meet a pre-defined set of criteria. Having visibility into the performance of each branch location would allow Laggard organizations to identify those locations where optimization would make economic sense.
- **Develop capabilities for prioritization of business-critical applications.** Sixty-nine percent (69%) of Laggard organizations do not have tools in place for prioritizing business-critical applications. Having this capability would enable Laggard organizations to ensure that time-sensitive business-critical applications get sufficient bandwidth. This capability also allows end-user organizations to limit the amount of recreational traffic and ensure that available bandwidth capacity is being used in effective way.
- **Develop tools for monitoring and enforcing network usage policies.** Seventy-seven percent (77%) of Laggard organizations do not have tools for ensuring that network usage policies are being followed and enforced. Having these tools in place enables organizations to ensure that the available bandwidth capacity is being used in the proper way and that the mission-critical tasks are getting the appropriate amount of network resources. Additionally, it allows end-user organizations to avoid issues with regulatory compliance when it comes to use of corporate resources.

### Industry Average Steps to Success

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- **Adopt tools for troubleshooting issues with application response times.** Seventy-six percent (76%) of Industry Average organizations do not have tools for troubleshooting application performance issues. Aberdeen's December 2007 benchmark report, [\*The Real Value of Network Visibility\*](#), reveals that application response

#### Fast Facts

- √ Use historic performance data when making decisions about branch upgrades
- √ Develop capabilities for prioritization of business-critical applications
- √ Deploy tools for application acceleration and data reduction

times are the top metric organizations are using to evaluate network performance. Having the ability to determine the root cause for application performance issues would allow the Industry Average group to take appropriate actions to prevent application performance issues from disrupting key business processes. Additionally, having this capability in place would allow end-users to determine if application performance issues are being caused by the network, server, or the application itself. Furthermore, this would give network administrators visibility into what network locations require optimization and where issues can be resolved on the server or the application side.

- **Develop capabilities for remote management of branch office networks.** The ability to remotely manage branch office networks allows organizations to improve the availability and reliability of the network as well as reduce operational costs for network management. Aberdeen's recent benchmark report, [The Real Value of Network Visibility](#) revealed that on average, organizations are losing \$69,000 in revenue for each minute of unplanned network downtime. Having this capability in place would enable IT staff to remotely troubleshoot and resolve issues with network performance as well as reduce service outages at branch office locations
- **Develop capabilities for testing application performance over the WAN in a simulated environment.** This capability will allow organizations to gain a better understanding of how new technology rollouts will impact the network and performance of existing applications. Since organizations are reporting the need to improve employee productivity as the top pressure they are trying to address through optimizing branch office networks, the ability to test network changes in a simulated environment would ensure that major technology rollouts will not cause the disruption of the key business process.

## Best-in-Class Steps to Success

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- **Manage network and application visibility and QoS through a single platform.** Having this capability in place allows network administrators to define and enforce usage policies, identify and resolve performance bottlenecks, and achieve the full control over network devices. Additionally, it allows organizations to improve productivity of IT staff by being able to manage all major aspects of network and application performance from a single platform.
- **Deploy desktop-based solutions for application acceleration where appropriate.** Organizations that have smaller branch offices or a high number of mobile workers should implement software solutions for improving application performance. The deployment of these solutions allows organizations to significantly improve application performance while avoiding costs associated

with managing additional network devices or server configurations. As an increasing number of employees are becoming mobile, it is also important that organizations implement application acceleration solutions geared towards the mobile devices (smart-phones) that these road warriors rely on.

- **Deploy tools for application acceleration and data reduction.** Best-in-Class organizations should develop even more robust capabilities for application acceleration and data reduction. Technology solutions such as tools for traffic compression, caching, TCP acceleration, and protocol specific optimization tools allow organizations to reduce the amount of WAN traffic as well as improve application response times by resolving the issues with application protocol bottlenecks.

#### Aberdeen Insights — Summary

End-user organizations estimate a 7% increase in the percentage of their workforce that works outside of corporate headquarters. Additionally, organizations will continue to centralize corporate data and enterprise applications. Enabling their remote employees to seamlessly access this data should be a core part of their strategies for improving employee productivity, streamlining business processes, and business continuity. Organizations should follow the roadmap created by Best-in-Class organizations which includes developing robust capabilities for visibility into network and application performance, coupled with solutions for optimizing and accelerating network traffic. However, the roadmap does not start or end with developing these capabilities or deploying technology tools. It is important for organizations to continuously educate themselves about the benefits associated with these capabilities as well as the advantages of implementing them as a part of an enterprise-wide initiative. This ensures that projects for branch office network optimization will receive the attention they deserve on corporate agendas.

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## Appendix A: Research Methodology

Between January and February 2008, Aberdeen examined the use, the experiences, and the intentions of more than 170 enterprises using technology solutions for optimization of branch office networks in a diverse set of enterprises.

Aberdeen supplemented this online survey effort with interviews with select survey respondents, gathering additional information on branch office networking 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 (24%); senior management (18%); IT or MIS director (16%); network engineer (13%); and network management staff (10%).
- *Industry:* The research sample included respondents from 19 industries. Some of the largest industry segments were: high technology / software (16%); finance / banking (13%); manufacturing (12%); education (7%); and retail (7%).
- *Geography:* The majority of respondents (51%) were from North America. Remaining respondents were from Europe (28%), the Asia-Pacific region (15%) and Africa and Middle-East (6%).
- *Company size:* Twenty-nine 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:* Forty-nine percent (49%) of respondents were from large enterprises (headcount greater than 1,000 employees); 29% were from midsize enterprises (headcount between 100 and 999 employees); and 22% of respondents were from small businesses (headcount between 1 and 99 employees).

Solution providers recognized as sponsors were solicited after the fact and had no substantive influence on the direction of this 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 solutions for optimizing branch office networks are deployed on their networks and the implications of the technology
- √ The structure and effectiveness of existing branch office networking implementations
- √ Current and planned use of solutions for optimizing branch office networks to aid operational and promotional activities
- √ The benefits, if any, that have been derived from branch office network optimization initiatives

The study aimed to identify emerging best practices for optimizing branch office networks, 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><b>Pressures</b> — 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><b>Actions</b> — 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><b>Capabilities</b> — the business process competencies required to execute corporate strategy (e.g., skilled people, brand, market positioning, viable products / services, ecosystem partners, financing)</p> <p><b>Enablers</b> — 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, February 2008

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

Source: Aberdeen Group, February 2008

**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 influential 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, February 2008

## Appendix B: Related Aberdeen Research

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

- [The Real Value of Network Visibility](#); December 2007
- [Optimizing WAN for Application Acceleration](#); October 2007

Information on these and any other Aberdeen publications can be found at [www.Aberdeen.com](http://www.Aberdeen.com).

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