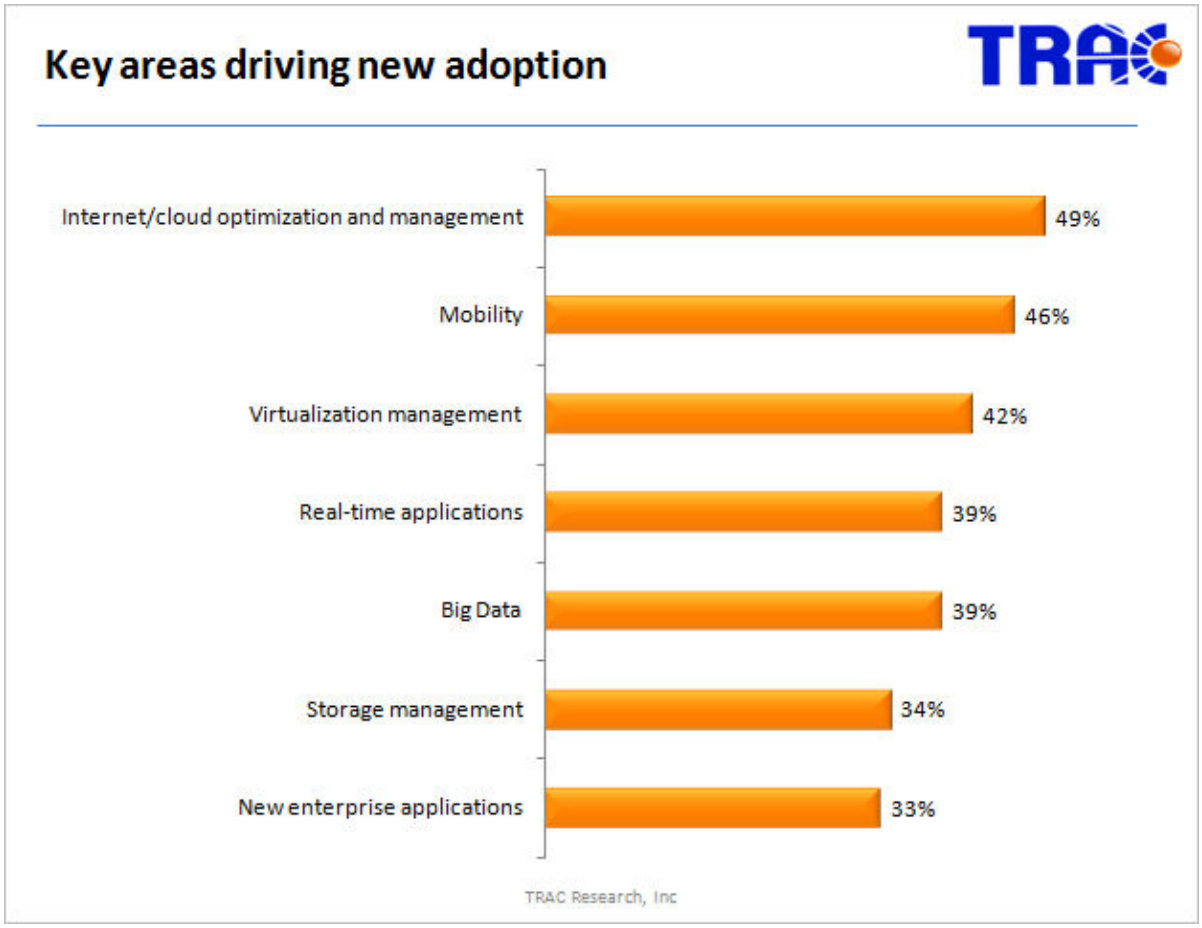
2013 WAN Management Spectrum

October 2013

Market Context

WAN management has been one the fastest growing IT performance management technologies as its core value proposition had clear business benefits for end-user organizations - deliver data to remote locations while mitigating costly bandwidth upgrades and improving application performance. Over the last 12 months, the role that these technologies play has significantly changed and these changes can be best summarized as the following

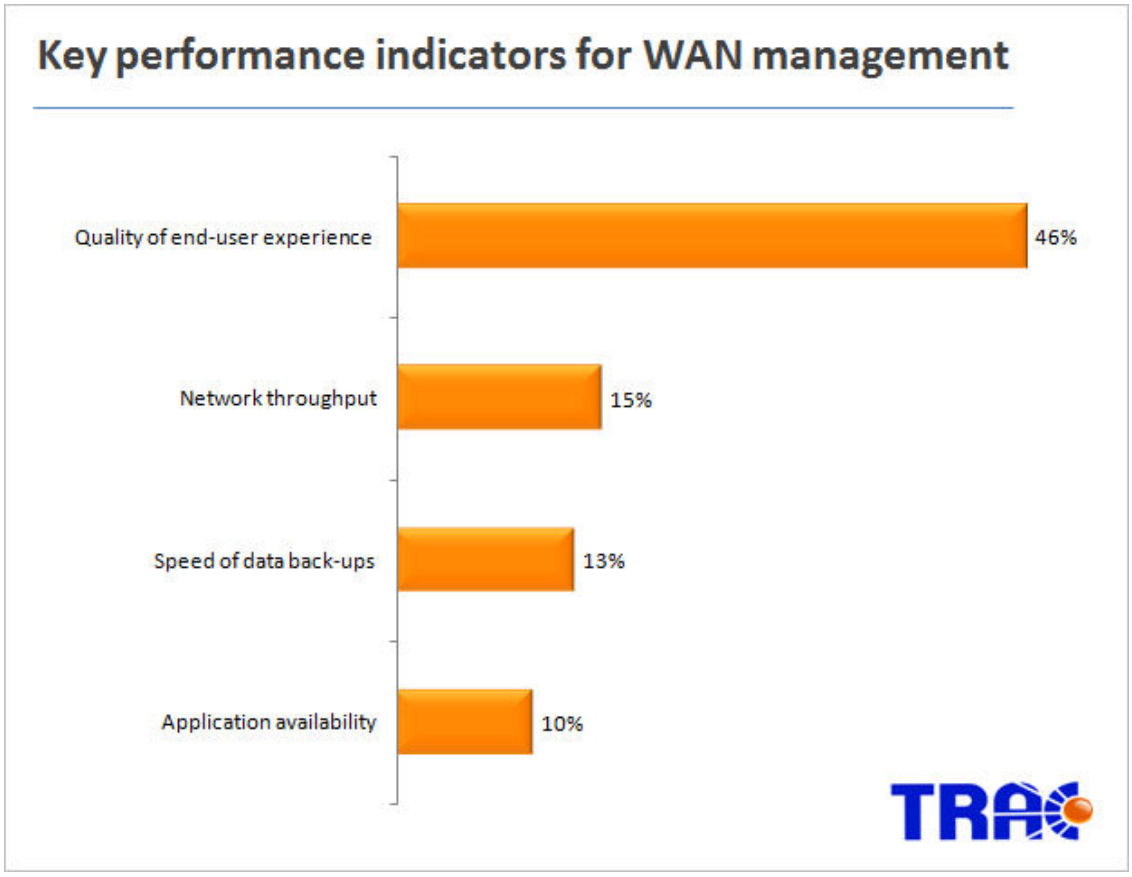
- The market continues to grow, but this new growth is uneven across different technology areas of WAN management, as some emerging submarkets are showing stronger growth potential
- WAN management evolved from a tactical technology to becoming one of the key enablers of major infrastructure projects
- The definition of Wide Area Network has changed and it now has to include the optimization of public Internet and delivery of data to mobile users



Executive Summary

End-user requirements for deploying WAN optimization solutions have significantly changed over the past year. These changes indicate requirements for new performance indicators, capabilities, and consumption models. The key trends that were discovered in this study include:

- **User experience has become the key performance indicator for evaluating WAN performance**. This indicates that organizations are discovering that traditional metrics, such as network throughput or data reduction ratios, are no longer serving as an overall indicator of how the solution provides value for end-user organizations. As a result, the combination of WAN optimization, traffic management and monitoring is required for ensuring optimal quality of user experience.



- **Emergence of new deployment methods.** While physical appliances are still the predominant method for deploying WAN optimization solutions, other methods of implementation, including software and cloud-based services, are showing stronger growth rates.
- **WAN management technologies becoming one of the key enablers of major IT projects.** Organizations are reporting that one of the key reasons they are deploying (or replacing) WAN solutions is deployment of new technologies. Organizations are seeing WAN optimization capabilities as integral elements when ensuring that they maximize return on investments that they are making in modernizing their IT infrastructures and innovating their IT services for end-

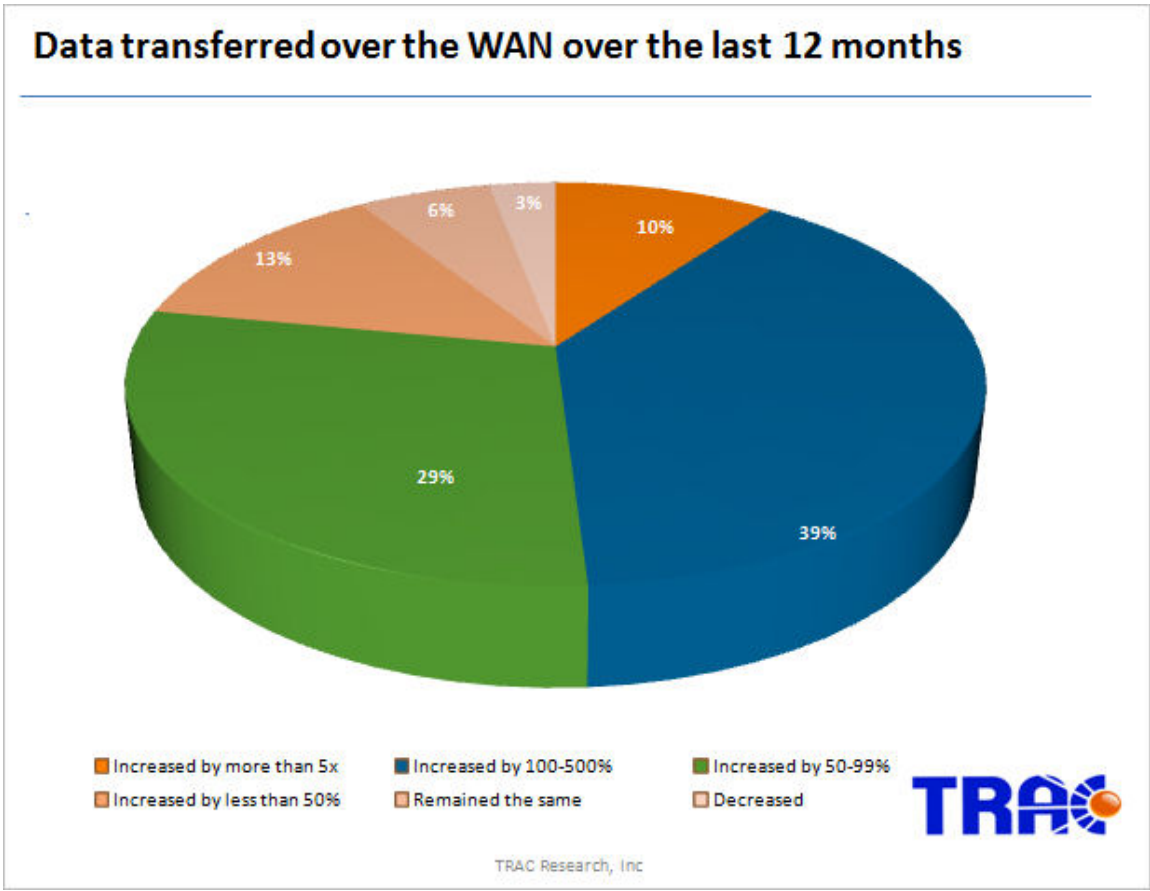
users. Cloud computing, big data, and continued virtualization and IT consolidation could result in new network challenges that WAN optimization can help overcome.

- **Emergence of cloud and the role of the public Internet.** TRAC's research shows that full visibility into user experience requires a new combination of performance metrics that go beyond traditional monitoring of application availability and response times. These new metrics include application usage, business impact, visibility into each transaction, mobile user experience, and time to load different segments of the page within the browser.
- **Proliferation of mobile users and a new definition of the branch.** Users are increasingly accessing business critical applications on mobile devices, including smartphones, laptops and tablets, from a variety of locations, while expecting optimal and consistent user experience. In order to effectively support these emerging use cases, organizations are increasingly looking to deploy WAN management capabilities that are specifically targeted to supporting mobile users.
- **New requirements for control of WAN traffic.** Organizations are increasingly finding that control of network traffic is the key for executing on their strategies for improving the quality of user experience. However, they are also finding that traditional approaches for establishing and enforcing Quality-of-Service (QoS) policies are not as effective when dealing with new types of traffic. Additionally, managing technologies such as VoIP, video, and interactive HTTP traffic are causing a power shift in how WAN management technologies are supporting end-user organizations.
- **Scalability is the key reason WAN management technologies are replaced.** The ability to adjust to new demands for high speed links, supporting more users, locations and services has become the key requirement for WAN management vendors to remain competitive.
- **New requirements for performance monitoring and reporting.** Organizations are increasingly looking for WAN management solutions to provide monitoring capabilities that go beyond reporting on optimization improvements. These new capabilities include the ability to capture metrics such as application availability, response times, user experience and bandwidth usage at the application and user levels.
- **Finding the right balance between performance and security.** The research shows that enabling the secure delivery of data over the WAN is one of the key buying requirements for WAN management solutions.
- **WAN management is not a single market.** As WAN management solutions adapt to the changing environments and requirements detailed above, six distinct submarkets of solutions can be identified. Each of these markets have different dynamics, growth rates and unique buyer requirements.

By the Numbers

TRAC's 2013 WAN Management Spectrum study is predominantly based on end-user research and some of the key findings from more than 400 user organizations include:

- **22%** of traffic currently being transferred over private WAN will be moved to public Internet in the next 12 months
- On average, the amount of data transferred over the WAN over the last 12 months increased by **151%**

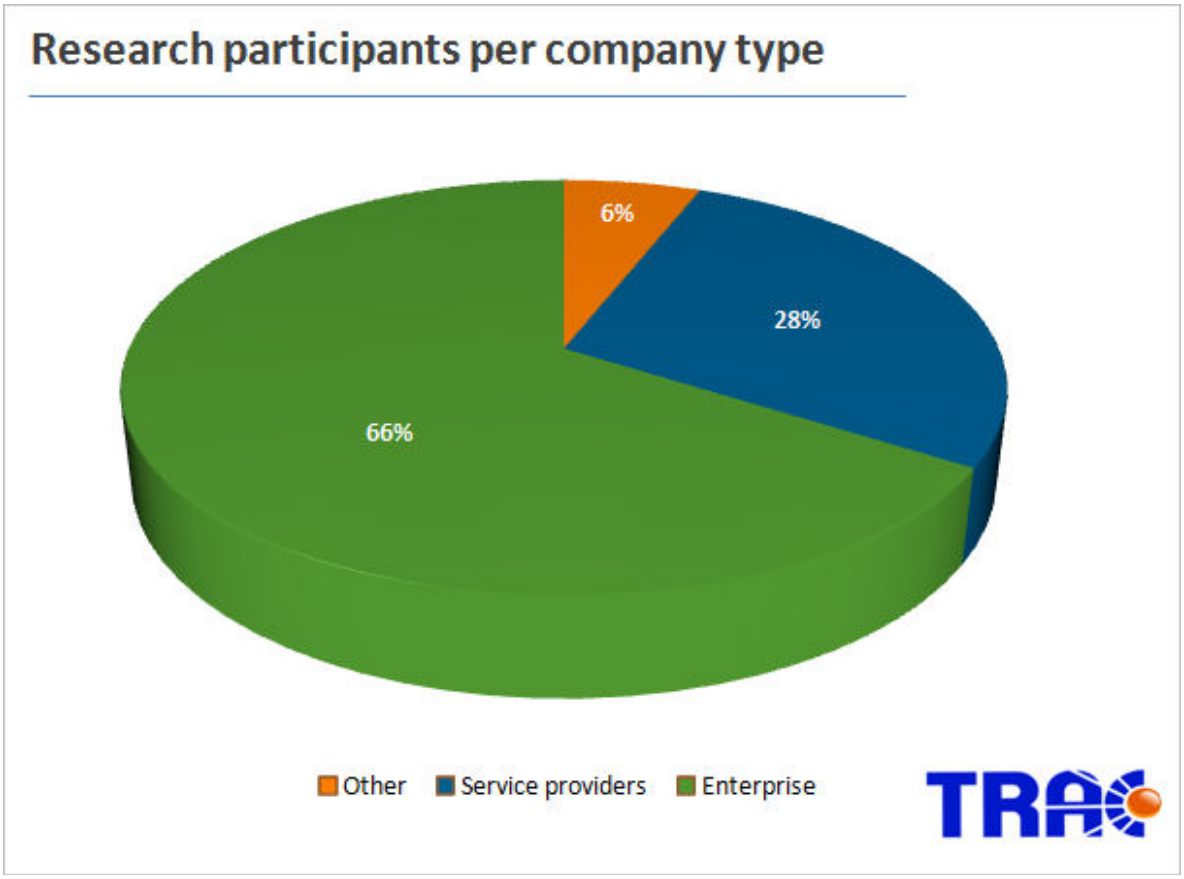


- Organizations who are deploying WAN management solutions are still not optimizing **54%** of their remote locations
- **56%** of organizations reported that the key reason for replacing WAN optimization solutions is that the product did not scale to promised levels
- **2 times more** organizations reported that they are looking to deploy WAN optimization as a software or cloud service, as compared to hardware
- **Nearly 4 times** more organizations selected the quality of user experience as compared to any other performance indicators, such as network throughput or application availability
- **37%** of organizations are using different solutions for Datacenter-to-Datacenter and Datacenter-to-Branch optimization

- Only **33%** of organizations have capabilities to measure the impact of WAN performance on the delivery of business services
- On average, organizations are experiencing **2.7x** increases in effective WAN bandwidth as a result of deploying WAN Management technologies.

Research Background

TRAC's 2013 WAN Management Spectrum Report includes insights from 402 end-user organizations. These enterprises span across a number of different industry sectors, sizes and geographic locations, making use of many different types of applications and IT infrastructures.



This study is based on information collected through:

- TRAC's web-based Market Insight Instrument (MII)
- Live interviews with end-user organizations
- Inquires received from users of WAN Management technologies
- Ongoing briefings and product demos with technology vendors

About TRAC's Market Insight Instrument

TRAC's Market Insight Instrument (MII) is an interactive tool for collecting quantitative information from end-user organizations. Some of the key attributes of TRAC's MII include:

- Participants are allowed to self-select their paths through the instrument
- TRAC's WAN Management MII included 50 unique questions and 196 variables of these questions
- The channels that TRAC used to collect quantitative end-user data include:
  - TRAC's research community of end-users
  - Publication and media partners promotions
  - Customers and prospects of WAN management technology vendors

Company Size

Revenue	Number of Users
• 32% - Less than $50 million • 31% - $50-$500 million • 37% - More than $500 million	• 24% - Less than 100 • 32% - Between 100 and 1,000 • 44% - More than 1,000

Company Profiles

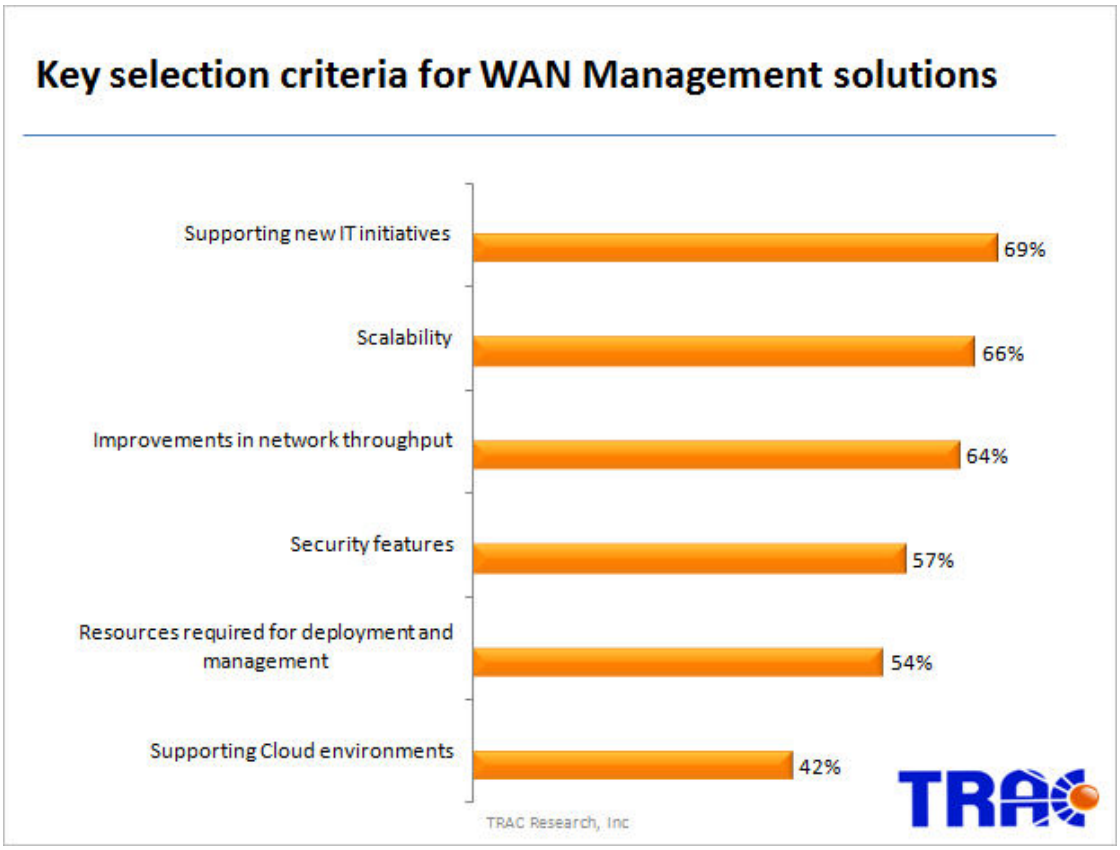
Geography	Industry
• 46% - North America • 29% - EMEA • 17% - APAC • 8% - Rest of the world	• 14% - Telecommunications • 11% - Business services • 11% - Finance / banking / accounting • 8% - Manufacturing • 7% - Education • 6% - Government • 6% - Retail

WAN Management

WAN optimization and management is no longer considered by enterprises to be a solution directed at pure IT metrics, such as network throughput or bandwidth costs. The solution is expected to address more strategic areas and enable broader business critical IT initiatives. This presents a major opportunity for WAN management solution providers to find new areas by innovating and making their solutions more effective when deployed in emerging use cases. This will allow for WAN optimization and management capabilities to be leveraged in more organizations, locations and uses cases.

The increased growth of WAN optimization deployments in upcoming years will be largely driven by:

- Changes in pricing models, packaging and deployment options to meet the new requirements of mid and low market enterprise customers and enterprise locations with lower cost requirements.
- Ability of the solution to support and enable strategic enterprise initiatives, such as mobile users, big data, virtualization, consolidation and cloud computing.
- The ability to support next generation WAN designs, such as hybrid and public cloud environments.
- The ability to use data to quantify end-user and business impacts.
- The ability to provide application level intelligence and control on more traffic types.



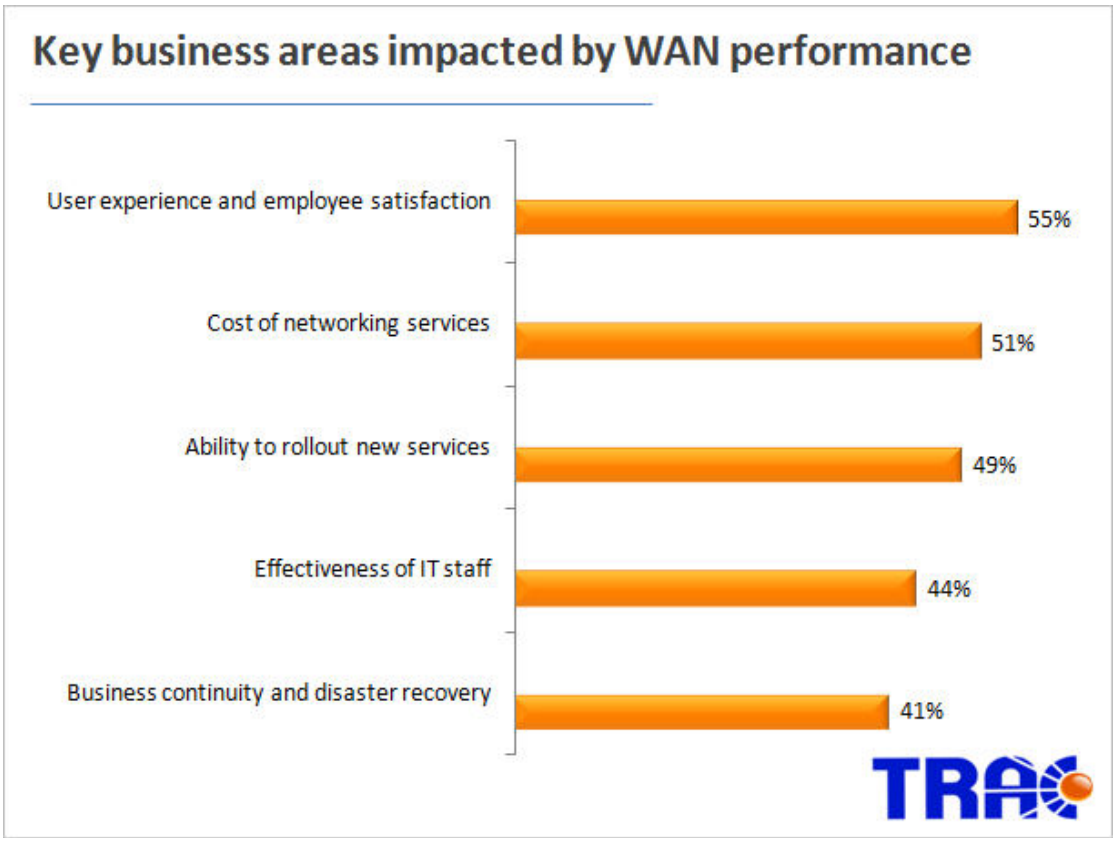
Business Impact

TRAC's research shows that WAN performance is impacting some of the key areas of the business. These technologies have been deployed to support a variety of use cases and their impact is most prevalent in the following areas:

User experience and employee satisfaction

Forty-six percent of organizations that participated in TRAC's research reported the quality of user experience to be a top performance indicator when evaluating their WAN management efforts. Additionally, 71% of organizations reported that employee satisfaction and productivity are directly impacted by application performance over the WAN. This is specifically prevalent in use cases such as file sharing and transfer, performance of enterprise applications, voice, video and Web content, which allows user organizations to achieve measurable business benefits.

Also, the top capability driving the new adoption of WAN optimization solutions is WAN optimization agents for mobile devices and users. As organizations are increasing the number of mobile employees, application performance is having a major impact on their productivity and WAN management technologies are playing a key role in improving their effectiveness.



Ability to rollout new technologies

Sixty-nine percent of organizations are reporting that WAN management technologies enable them to streamline the rollouts of new technologies and get the most out of these technology investments. WAN management technologies allow organizations to reduce infrastructure bottlenecks through optimizing, controlling and monitoring WAN traffic and enable organizations to rollout new technologies at optimal user experience, while mitigating additional spend on infrastructure upgrades.
Bandwidth Cost

One solution for enterprises that are experiencing performance problems due to network congestion is to purchase more bandwidth. Unfortunately, the ongoing cost of throwing more bandwidth at the problem is much higher than most WAN optimization solutions and does not scale with the organization. In fact, due to latency impacts from protocol inefficiencies and network conditions, actually utilizing additional network bandwidth without some form of WAN optimization will still remain a challenge. TRAC's research shows that, on average, organizations are experiencing 2.7x increases in effective WAN bandwidth as a result of deploying WAN Management technologies.

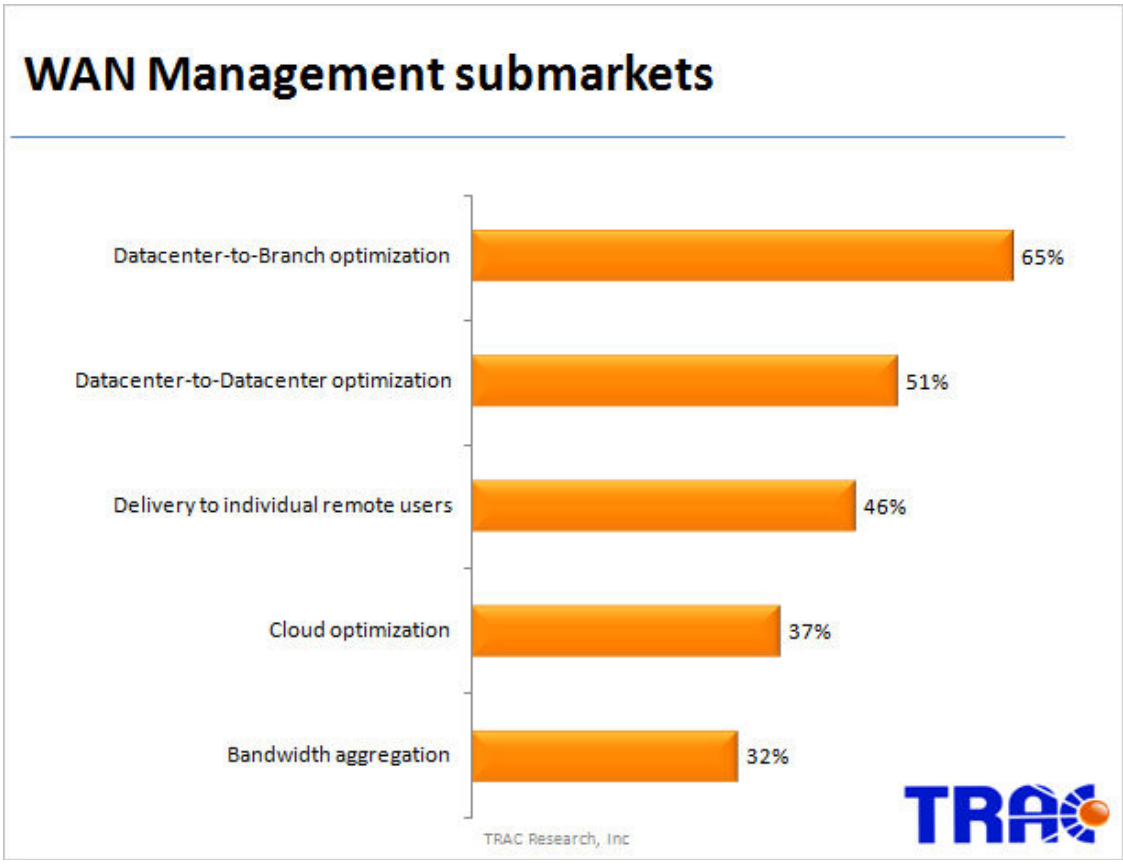
Business continuity and disaster recovery

Forty-six percent of organizations that participated in TRAC's research are reporting that WAN management technologies are playing a key role in enabling their initiatives for ensuring continuity of their business services and supporting disaster recovery initiatives. This is being done through some of the core competencies of these technologies that include protocol optimization, caching and compression techniques.

Submarkets

The selection process for WAN management solutions today is not necessarily about identifying a single solution that can address all needs of an end-user organization, but potentially finding the right mix of products that can help an enterprise fully address its specific IT environment. Many organizations are simultaneously using a number of WAN optimization products to address the specific needs of their enterprise. 37% of enterprises are using different WAN optimization solutions for their datacenter-to-datacenter traffic, as opposed to their datacenter-to-branch traffic, for example.

From the technology perspective, the WAN Management market consists from the variety of solutions that range from WAN optimization, traffic control and management, performance monitoring and capacity aggregation. From the business challenge perspective, organizations are reporting that their needs for managing these issues are often addressed by a range of capabilities that are provided by vendors that are providing solutions based in different underlining technologies.


WAN Management submarkets
Datacenter-to-Branch optimization
65%
Datacenter-to-Datacenter optimization
51%
Delivery to individual remote users
46%
Cloud optimization
37%
Bandwidth aggregation
32%
TRAC Research, Inc

TRAC has identified the following six markets of WAN management:

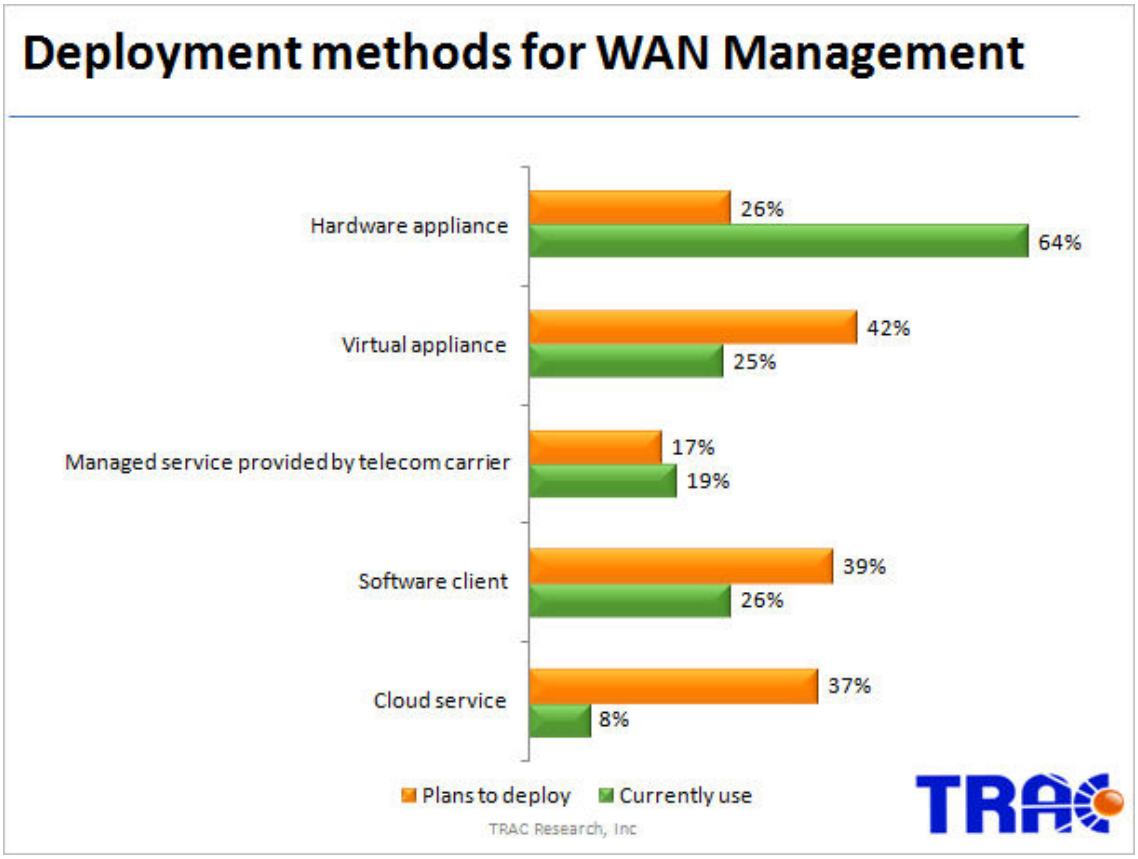
- Datacenter-to-Branch optimization
- Datacenter-to-Datacenter optimization
- Delivery to Mobile Users
- Cloud optimization
- Visibility and Control
- Bandwidth Aggregation

Even though all of these markets are distinct, each of them include: 1) multiple technology categories (e.g. mobile, cloud, big data, etc.) and 2) unique buyer requirements. Additionally, these markets are showing different potential for growth and each of them feature a variety of use cases that resonate more with end-user organizations.

Deployment

One of the key trends in the WAN management market has been an emergence of new deployment methods. TRAC's research shows that WAN optimization solutions are predominantly being deployed as a hardware appliance. However, the research shows that deployment methods such as virtual appliance, software client and cloud services are gaining more traction.

The research also shows that organizations are currently more likely to be deploying virtual appliances in datacenter while deployments in cloud environments and at the branch are showing stronger growth rates for the future.



However, each of the deployment methods has its strengths and weaknesses in regards to specific use cases that organizations are looking to address.

Deploying WAN Management Solutions As Hardware Appliances

Pros	Cons
• Higher scalability and support for variety of IT environments • Broader future set • Higher ability to support high speed links • Custom built appliances for addressing specific challenges of WAN management	• Requires skilled IT resources at remote location • Does not fit into cloud hosting and virtualization initiatives and framework • Adds complexity to remote IT hardware infrastructures • Requires upfront investment and pricing model lack flexibility

Deploying WAN Management Solutions as a Virtual Appliance

Pros	Cons
• Ease of global deployments • Fits into virtualized infrastructures and management frameworks and cloud environments • Reduced cost of infrastructure expenditures • Software only packaging may be more price efficient	• May not scale as well as appliance solutions • May not have all the features of appliance solutions • Must be compatible with virtualization solution of choice • Functionalities can be limited to specific use cases

Consuming WAN Management and Optimization Through a Service Provider

Pros	Cons
• Offloaded IT complexity and capital expenses • Utility consumption models • Integration into a "stack" of services consolidated onto one partner service provider • Mitigates significant direct infrastructure investments in hardware, software and labor	• May cause vendor/technology lock-in • May not support all geographic locations equally • Capabilities limited to service provider's WAN management solution of choice

ROI

Organizations TRAC's research shows that operational improvements that organizations are experiencing from WAN management deployments are directly impacting some key business areas.

Application Performance Over the WAN

Performance Improvement	Business Benefits
• Packet loss reduced by 40% • Average amount of data transferred per WAN link per day improved by 75%	• Response times for business critical applications improved by 2.3x

Infrastructure Management

Performance Improvement	Business Benefits
• Reduced average time to complete a data replication by 50% • Improved network throughput by 2x	• Cost of bandwidth services decreased by 23% • Ability to rollout new IT services without disrupting key business processes improved by 61%

Deployment

Performance Improvement	Business benefits
• Reduced average time required to deploy WAN management solution by 25% • Reduced capital expenditures (as a percentage of overall WAN management spend) by 25%	• Reduced total cost of ownership of WAN management solutions by 43% • Reduced labor cost for managing WAN performance by 59%

Technology Landscape

TRAC Research has identified 24 technology vendors that enterprises are using for managing different aspects of Wide Area Networks (WANs) performance. The research shows that the majority of competitive situations in this market are defined based on use cases and technology environments that are being managed. As a result, technology vendors are showing strengths in different submarkets.

This section of the study is designed to:

- Help end-user organizations understand the overall WAN management vendor landscape and the different submarkets where these vendors compete.
- Provide insight into each of the submarkets on a variety of different levels, including: 1) inclusion criteria, 2) vendor landscape, and 3) key use cases for these technologies.

Disclaimers:

- Some vendors address more than one submarket by offering multiple products, while others offer a single solution that is relevant for a number of submarkets
- A higher number of submarkets covered does NOT necessarily constitute a more effective WAN management offering. Most of the end-user organizations are evaluating vendors based on their effectiveness in addressing unique issues within each of the submarkets.

WAN Management Technology Vendor Landscape

	Datacenter To Datacenter	Datacenter To Branch	Mobility Optimization	Cloud Optimization	Visibility and Control	Bandwidth Aggregation
Allot					●	
Array Networks	♦	●	♦	●		
Aryaka Networks	♦	●	♦	●	♦	
Blue Coat Systems	♦	●	♦	●	●	
Circadence		♦	●	●		
Cisco	♦	●	♦	♦	♦	
Citrix	♦	●	♦	●	●	
Comtech		♦				
Cymphonix				♦	●	
Exinda Networks	●	●	♦	●	●	
F5 Networks	●	♦	♦	●	♦	
FatPipe	♦	●			♦	●
Ipanema Technologies	♦	●	♦	●	●	●
Mushroom Networks						●
PepLink						●
Procera Networks					●	
Replify		♦	●	♦		
Riverbed	●	●	♦	●	♦	
Sangfor	♦	●		●		
Silver Peak	●	●	♦	●	♦	
Sandvine					●	
Talari						●
Talon		●		♦	●	
Xtera	♦	●			●	●

● = Core strength ♦ = Ability to support selected use cases