

# CATCHING THE NEXT NETWORKING WAVE

May, 2015

→ **Jim Rapoza**, Senior Research Analyst & Editorial Director,  
Information Technology



## Report Highlights

p3

**31% of organizations have implemented SDN or plan to do so in the next twelve months to improve agility and network functionality.**

p4

**36% of businesses state that their current network infrastructure can't grow to meet emerging needs.**

p5

**43% of businesses have seen an increase in Total Cost of Ownership for networking solutions.**

p7

**Networking leaders are more than twice as likely to have very or extremely satisfied end-users.**

In this report we analyze how new networking technologies and trends are transforming the way organizations monitor, manage, and deploy their networks.

## 2

**As new and disruptive technologies are adopted by businesses, they increase the complexity of managing networks.**

Networks are everywhere. Whether it's the Internet of Things (IoT), content, people, or (really) everything, networks are constantly connecting every aspect of our work and personal lives. But in the modern world, where new technologies are changing the very nature of networks, can you describe just what a network is?

Of course, this used to be a pretty simple exercise for anyone in IT. A traditional enterprise Ethernet network was a wired infrastructure, utilizing hardware such as routers, switches and hubs, which connected PCs, servers and other wired endpoints. Based on Internet Protocol (IP), data packets traveling over the network would follow strict routing and path protocols and could be monitored using standard network taps and analytics tools. Not that long ago, that simple elevator description would work pretty well for a network definition. But not anymore.

Today, networks are experiencing massive transformations, thanks to new technologies such as Software Defined Networking (SDN), Network Functions Virtualization (NFV), cloud computing, mobile and other trends that are altering what it means to be an enterprise network. And as these technologies continue to evolve, the next generation network will have as much in common with classic networks as an iPhone 6 has with a 1990s flip phone.

In this report, we'll look at how these transformations are impacting how organizations monitor, manage and deploy their networks. And we'll analyze how businesses that are leaders in enterprise networks are taking advantage of these technologies, giving their business an edge by being able to catch the next wave of networking and reap its advantages, while other organizations get buried under the surf.

## 3

### The World of Software Defined and Virtual Networks

While the term “software defined” is getting thrown around a lot today as marketing hype, in the world of networks, it really means something. As shown in the Aberdeen report, [SDN: Do Believe the Hype](#) Software Defined Networking is gaining momentum in corporate networks, with:

- ➔ 13% of all organizations having already implemented SDN
- ➔ 18% planning to do so in the next year

And while much of this implementation is still in the early adoption phase (see sidebar), these numbers are still significant given how much of a game changer SDN is. This technology has the ability to convert networks from static, rigidly structured processes, to free flowing and dynamic platforms that respond to the needs of any user, service or data packet. With SDN, networks become more like programmable applications. And, while only the future knows exactly how SDN will change the impact of networks on business (and many believe it will completely change the entire definition of networks) we already know that it can provide significant benefits in improved portability and flexibility of virtualization and cloud computing, increased network performance and reliability, and enhanced abilities to deploy the exact network that is needed for specific use cases. With these changes, organizations will be able to get more out of their network and data center resources, while boosting overall business productivity.

And SDN isn't the only technology altering networks. For example, the rise of virtual LANs is doing for networks what traditional virtualization did for servers. Just as virtualization made it possible for organizations to quickly and easily spin up a virtual server to meet any application or service need, virtual

---

#### State of Software Defined Networking (SDN) adoption:

---

- 43% – Early adoption / pilot
- 38% – Research only
- 14% – Test implementation

# 4

LANs make it possible to quickly create and deploy custom networks to meet any business or user need. Our data shows that virtual LAN implementation is already widespread, with:

- ➔ 53% of all organizations already deploying virtual LANs
- ➔ 13% planning to do so in the next year

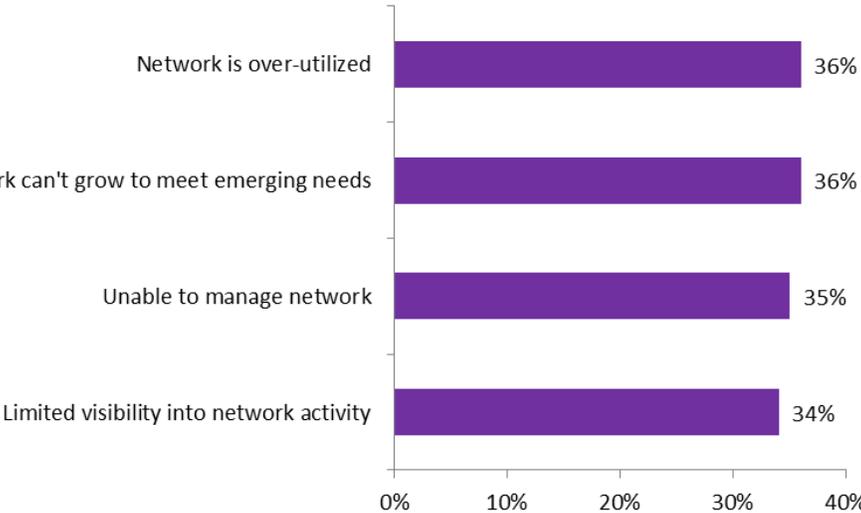
With this data, we see that many businesses are leveraging the capabilities that virtual LANs bring for improved security, more flexible access controls and increased business agility. Also, with other new IT technologies rising in prominence, from cloud computing to social collaboration to the Internet of Things to increased reliance on mobile devices, the network of the future is taking a distinct turn away from its predecessors.

However, as these new and disruptive technologies are adopted by businesses, they add to the complexity of managing company networks, putting increased strain on network resources and stretching old school networks beyond their capabilities.

### Top Technology Challenges Facing Businesses

- 50% Increased use of cloud
- 38% Demand for collaboration and social communications
- 33% Need to utilize big data analytics
- 29% Increasing mobile demand

Figure 1: Top Networking Hurdles



Percentage of respondents, n=81 Source: Aberdeen Group December 2014

## 5

As seen in Figure 1 above, organizations are finding that their old school network infrastructure is increasingly unable to stand up to the needs of the modern business. The top four hurdles listed by businesses (out of a much longer list) include over utilized networks, infrastructures that can't grow to meet emerging needs, and limited visibility into networks and the inevitable difficulty in management that this leads to.

Of course, these kinds of hurdles should be expected. Just as it would be impossible to run a business today using PCs from the 1990s, organizations can't expect to meet the increasing challenges of the modern IT infrastructure using network capabilities that are from the past. However, our research has shown that leading businesses are effectively adopting new technologies and strategies that make it possible for them to face these modern challenges and take advantage of new technologies in order to gain an advantage over competitors.

### Surfing to a Successful Network Infrastructure

How do businesses succeed at building and managing high performing and reliable network infrastructures? What are the key strategies and processes that are leveraged by these successful networking organizations?

Looking into how leading organizations are able to build and maintain high performing and reliable networks, which can not only survive in this era of rapid change but also thrive, we saw that they were able to get away from old school approaches to networks and bring their network management strategies into the modern age with new technologies and processes.

They were also able to more effectively utilize traditional network monitoring and management strategies in a way that is updated to meet the challenges of today.

### Fast Facts

- 43% of businesses have seen an increase in Total Cost of Ownership for networking solutions over last year
- 51% of companies expect to see an increase in their network performance budget in the next year
- 33% of businesses said that application downtime or sluggishness decreases employee productivity
- Respondents are seeing a 32% average increase in network traffic

## 6

Aberdeen's research uses key performance criteria to compare Leaders (top 40%) and Followers (bottom 60%).

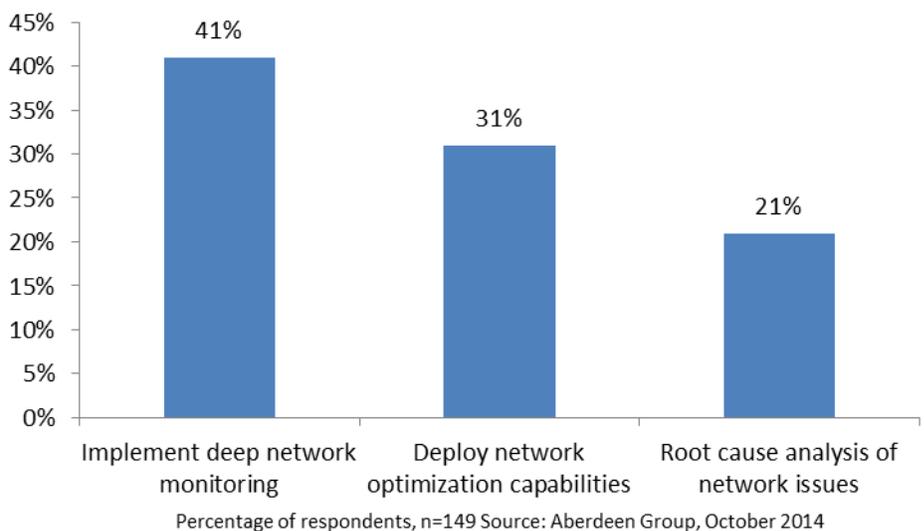
We examined how preparedness for emerging network technology trends helped Leaders see performance improvements along several dimensions:

- Leaders have a high (91% or better) rate of error free transactions, with 68% reaching this level versus 52% of Followers
- Transaction completion rates of 91% and higher are achieved by 64% of Leaders compared to only 32% of Followers
- Leaders saw a 1.5 greater decrease in user complaints about performance

Key to this success was how these businesses ensured that they had deep visibility into their network activity and that the right configurations were put in place for high performance and reliability.

With this deep visibility, these companies can deploy effective reporting capabilities that can be shared with all business stakeholders and answer any questions about the network. Also, with extensive monitoring and improved management capabilities, these organizations can find any potential issues before they impact the business.

**Figure 2: How the Leaders Manage Networks**



In Figure 2 above, we see that organizations that are Leaders in network performance and reliability (see sidebar for how Aberdeen defines networking leaders) implement deep, end-to-end network monitoring at a 41% rate. With this visibility, these businesses can see all activity on their network, identify areas that need improvement and understand issues that might impact end-user satisfaction. We also see that 31% of the Leaders deploy optimization features that automate their

## 7

network infrastructure and enable it to adjust to different levels of demand and activity, helping the network avoid performance or reliability problems before they impact end-users. With these capabilities in place, leading networking organizations are able to ensure that applications have high availability and that end-users are very or extremely happy.

In fact, Aberdeen research has shown that these top performing companies have an average of 32% of their end-users being very or extremely satisfied, compared to only 14% of other organizations. And when we asked businesses if their network performance was optimal, adequate or not optimal, leading organizations were twice as likely as others to report that their network performance was optimal.

**Table 1: Gaining the Benefits of a Top Performing Network**

Key Performance Metric	Performance Leaders	Performance Followers
90% or better percentage of error-free transactions	28%	11%
50% or more decrease in Mean Time To Repair (MTTR) of application issues	17%	6%
90% or better transaction completion rate	58%	40%
End-users extremely or very satisfied with network performance	32%	14%

Source: Aberdeen Group, December 2014

Looking at Table 1, we see that Leaders in enterprise network performance and reliability achieve a number of key benefits through their improved network visibility, monitoring and management capabilities. These organizations have boosted network performance and reliability through the adoption of newer technologies and strategies. And these Leaders in networking are more likely to have error-free transactions and to significantly reduce Mean Time to Repair (MTTR) for networking

## 8

---

“Our internal networking staff is not sufficiently trained in up-and-coming technologies.”

~ IT manager, US-based manufacturing firm

---

issues. Also, the top level organizations build high-performance network capabilities that result in very or extremely satisfied network users, with Leaders listing 32% of end-users as very or extremely satisfied, compared to only 14% of end-users satisfied for other businesses. By having deep visibility into their network and being able to find and fix network problems before they impact users, these organizations can overcome the complexity that comes with modern networks, improve performance and enable themselves to leverage new technologies to gain a competitive advantage.

As we've seen from this report, having the right strategies, capabilities and processes in place provides a number of key benefits to those organizations that build high-performance and flexible networks with deep visibility into network usage. This isn't simply a matter of technology for technology's sake. By gaining deep knowledge into their network activity, implementing automated and dynamic management systems, and upgrading network infrastructure to meet the demand of new technologies, leading businesses not only increase performance, reliability and user satisfaction, but they also reduce costs and see a return on these investments. Aberdeen research has shown that businesses that are leaders in IT infrastructure are three times more likely than other organizations to reduce overall IT costs. In this context, the case for preparing your network for the future is clear.

### Key Takeaways

Networking technology is changing rapidly, and these disruptive and emerging technologies are bringing both opportunities and increased challenges. Trends like SDN and virtualization will change not only how networks are deployed and managed, but also how business is done. But sticking your head in the sand and ignoring these disruptive trends isn't in the best interest of

# 9

any organization. Businesses that are Leaders in networking are able to learn about these new technologies and find out how they will benefit their organization. To leverage this next wave of networking technology and ride it into the future, businesses should:

- **Learn about new technologies and how they will impact your IT infrastructure.** Technologies like SDN and virtualization can often be hard to understand and even more difficult to learn how to leverage. Smart organizations work to gain an understanding of these and other emerging trends in order to figure out how they could impact their business and then work to streamline deployment when the decision is made to implement. Aberdeen research shows that knowledge of emerging technology leads to performance gains and Leader status for organizations.
- **Find out how new products are evolving to leverage new networking technologies.** Much of the hardware and software that runs, monitors, and manages your network is already in the process of integrating these new technologies. Find out how far along those who provide your networking infrastructure are in implementing these emerging technologies and plan on how to best deploy these systems to upgrade your networking infrastructure.
- **Implement end-to-end monitoring and visibility into your network.** Extensive knowledge of network performance and activity, especially when it comes to how end-users experience the network and the services that run on it, is key to becoming a networking Leader who can leverage the latest technologies.

---

“Technology platforms keep evolving too fast for our monitoring tools to be able to manage them all.”

~ Consultant, North American Technology Hardware vendor

---

## 10

→ **Don't wipe out with an old networking infrastructure.**

Our research consistently shows that leading businesses have a major edge in adopting new technologies when compared to other businesses. These successful networking companies understand that new products and technologies can boost productivity and improve revenues so it's no surprise that they take advantage of the competitive advantage of these technologies.

For more information on this or other research topics, please visit [www.aberdeen.com](http://www.aberdeen.com).

#### Related Research

*[Visibility, Automation and Analysis: A Winning Combo for Reliable Networks](#)*; November 2014  
*[Getting Network Auditing and Configuration Figured Out](#)*; November 2014

*[Big Data in Network and Application Monitoring: The All-Knowing Approach to IT Management](#)*; May 2014  
*[SDN: Do Believe the Hype](#)*; April 2014

Author: Jim Rapoza, Senior Research Analyst & Editorial Director, Information Technology  
[jim.rapoza@aberdeen.com](mailto:jim.rapoza@aberdeen.com)

#### About Aberdeen Group

Since 1988, Aberdeen Group has published research that helps businesses worldwide improve their performance. Our analysts derive fact-based, vendor-agnostic insights from a proprietary analytical framework, which identifies Best-in-Class organizations from primary research conducted with industry practitioners. The resulting research content is used by hundreds of thousands of business professionals to drive smarter decision-making and improve business strategy. Aberdeen Group is headquartered in Boston, MA.

This document is the result of primary research performed by Aberdeen Group and represents the best analysis available at the time of publication. Unless otherwise noted, the entire contents of this publication are copyrighted by Aberdeen Group and may not be reproduced, distributed, archived, or transmitted in any form or by any means without prior written consent by Aberdeen Group.