# SD-WAN: Simplified

## There is a hot new topic that is creating a real buzz in the IT world: SD-WAN.

The emerging technology has garnered much praise and many are claiming it is the holy grail of networking. Others are a bit more cautious, warning that SD-WAN is not a cure-all solution. So what is SD-WAN and how can it benefit your company? Most businesses are familiar with WANs and what they do – connect the company's offices, headquarters, off-site locations, servers and more. WANs allow the company to share resources and applications without requiring users to be geographically close.

SD-WAN (Software Defined Wide Area Network) takes WAN a step further. It is very flexible and can be significantly less expensive than legacy WAN technologies, such as MPLS. SD-WAN moves the "brains" of the network's hardware to a software level. This provides powerful, centralized control of many different hardware functions and capabilities.

SD-WAN can be enabled to function in four primary areas: broadband aggregation, application prioritization, dynamic bandwidth, and Network Firewall Virtualization (NFV).

**Broadband Aggregation**

Broadband aggregation via SD-WAN is simply combining both private and public connections. This retains the benefits of MPLS having a private IP while adding the benefits of broadband speeds. It can also make use of failover connections, which not only add value to the failover solution, but also increases your network's efficiency. While network failures can be costly, some companies cannot justify the cost of a failover solution that is only used a few times a year or less. SD-WAN gives those companies the best of both worlds by turning the failover into an additional bandwidth that is ready to use whether the primary connection is working or not.

**Application Prioritization**

SD-WAN allows you to divert and allocate resources to higher priority applications. This is helps ensure that critical applications are getting the bandwidth they need to function before others that are less important. For example, bandwidth could be diverted to Outlook instead of AutoCAD, if that is the highest priority.

**Dynamic Bandwidth**

Networks are ever-changing and usage isn't as predictable as it used to be. Larger files are becoming more prevalent, upstream bandwidth is becoming just as important as downstream bandwidth, and usage in general is becoming more dynamic. SD-WAN allows the network to automatically accommodate changes in usage and

GRUDI ASSOCIATES
Innovative Solutions
Simplified Telecommunications

1044 East Main Street, P.O. Box 626,Palmyra, PA 17078 ▪ Office: 717.838.5022 ▪ Fax: 717.838.5086
www.grudiassociates.com

conditions, such as usage spikes, peak-time demand and other activities.

**Network Firewall Virtualization (NFV)**

SD-WAN can enable a network to more easily navigate difficult and complex firewalls. This allows the network to directly access the Internet instead of bottlenecking at the central firewall before proceeding to its destination.

## Benefits of SD-WAN

SD-WAN optimizes the benefit of the connections you already have.

The benefits of SD-WAN are extensive, from greater manageability, better network optimization and improved security, to enhanced compliance, easier international accessibility, faster "go-live" time and expanded scalability.

**Optimized ISP Manageability**

SD-WAN makes changing last-mile access simpler and easier to manage. Think of SD-WAN as a universal adapter – able to handle most carriers and their handoff in one place. The benefit is that the public IP scheme resides with one provider, even though there may be multiple circuits from a variety of carriers at one site. Avoiding the need to reprogram IPs every time ISP providers change often makes it possible to obtain and keep the best available pricing.

**Optimized Network**

SD-WAN can identify traffic on all links, making it easier and more efficient for network devices to make decisions on a local level. Directing traffic more intelligently can save cost by optimizing the network and decreasing reliance on hardware.

**Optimized Security**

SD-WAN monitors data in real-time for better routing. Tracking this data also makes it easier to inspect and tag suspect data as malicious. In addition, SD WAN uses VPNs (Virtual Private Networks) between devices, which acts as a secure tunnel between devices for encrypted data. SD-WAN provides security for both the end points and in-transit data.

**Helps Achieve Uptime and Compliance**

A network outage can be extremely costly for a company. For a mega-Internet retailer, even one minute of downtime could be disastrous. For example, a company making over $1,000 per second in sales would experience a potential loss of over $100,000 per minute of downtime. Meeting network compliance has also become a critical concern for many industries and businesses. SD-WAN offers the redundancy and reliability needed to achieve 100% uptime and satisfy the compliance requirements of HIPAA, PCI and others.

**Optimized International Accessibility**

Companies that have multiple international locations can optimize their data speeds in countries that have strict firewalls. A managed SD-WAN provider can address this issue with a private backhaul (network links) between local ISP POPs (points of presence).

**Optimized "Go Live" Time**

Adding other network solutions to new business locations may take up to 60 days or longer, not including delivery and set-up. This can cost valuable time and money. SD-WAN can significantly reduce the time it takes to get a new site up and running. Even if the required hardware isn't onsite, most vendors are able to ship it in less than a week. The only other requirement is an appropriate Internet connection at the site. In many cases, SD-WAN set-up can be accomplished in as little as 24 hours.

## Important Considerations

**"SD-WAN will not make a DSL/Cable modem faster"**

Having SD WAN cannot improve the physical limitations of a network. Dedicated and "best-effort" connections will still utilize the same last mile. Additionally, SD WAN cannot change what "best-effort" speed is provided by the ISP.

**"SD-WAN is not always less expensive"**

While the access components of a SD-WAN network are typically less expensive than MPLS, the cost will depend on a variety of factors. Savings will be impacted by the SD-WAN functionality and capabilities that have been enabled.

**"SD-WAN requires special expertise"**

Careful design and implementation of the SD-WAN by a network expert is highly recommended to achieve both performance and cost objectives.

## Conclusion

SD-WAN is a powerful tool that is providing many businesses with a more efficient, effective and often economical way to manage growing corporate WAN traffic. The experts at Grudi Associates are the right team to meet your network needs.

For more information, please call us toll free 1-877-787-7100



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