Doyle Research

By: Lee Doyle, Principal Analyst at Doyle Research

Intelligent WAN Market Analysis

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Summary

Leading IT organizations are frustrated by their inability to rapidly adapt their WAN to the significant changes in traffic patterns brought by increased adoption of cloud computing (SaaS) and mobile. Branch office employees need access to public and private cloud-hosted applications over fast, secure, low latency WAN links. The Intelligent WAN is undergoing a fundamental change, thanks to new networking solutions entering the market that enable WAN access choice, provide for rapid provisioning, and reduce management challenges.

Driven by new software-based technology (e.g. SDN and NFV), the Intelligent WAN provides low latency, high reliability, traffic prioritization as well as flexible management, centralized orchestration, and security. There are significant new opportunities to deliver Intelligent WAN appliances and software, as well as to provide as a Service offerings.

Doyle Research forecasts the market for the Intelligent WAN will double from $1.6B in 2014 to $3.2B by 2018, representing a compound annual growth rate of 19%.

Market Definition: Intelligent WAN

The Intelligent WAN sits at the intersection of a number of (currently) discrete technologies, including WAN Optimization, branch/edge routers, perimeter security (VPNs and firewalls), and the ability to manage and monitor WAN connectivity - see Figure 1. This technical convergence is being enhanced by innovative network software developments related to Software Defined Networks (SDN) and Network Functions Virtualization (NFV). The Intelligent WAN has the following characteristics:

- Support for Internet access options (with multiple carriers) at the branch
- Automated provisioning of new sites and new connections
- The ability turn capacity up and down as necessary
- Ability to dynamically prioritize traffic types (QoS)
- Improved security – including flexible VPN access
- Centralize operations, control and policy for all branch office connections
- Ability to rapidly resolve traffic issues with real time monitoring

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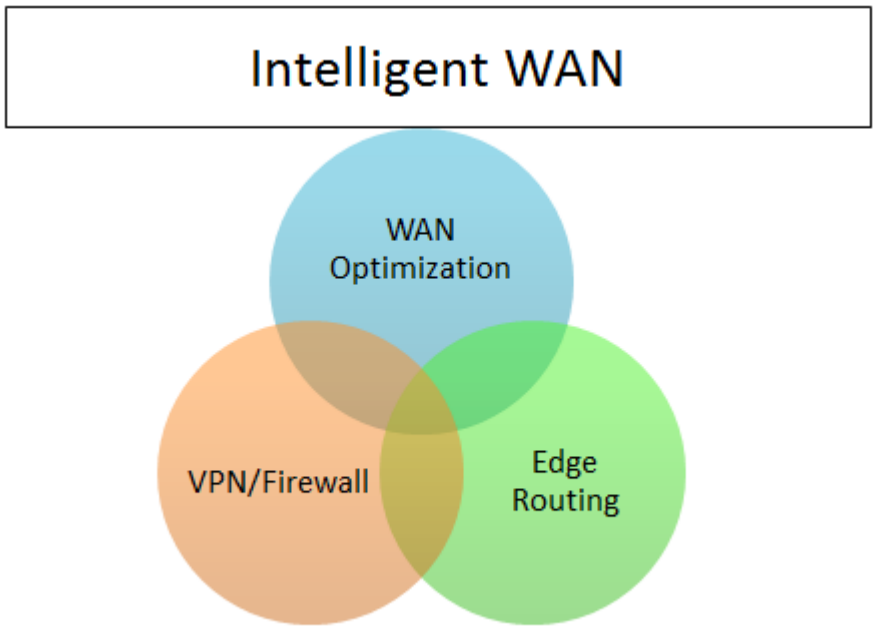
Figure 1



Methodology

This report utilizes publicly available information and discussions with industry influencers for its forecasts and conclusions, including:

- Consensus market forecasts for WAN Optimization, Edge Routing, VPN, Firewall, and Network Management/Monitoring
- SDN/NFV Forecasts from Doyle Research
- Discussions/Interviews with 25+ WAN market influencers, including suppliers, service providers, large end-users, financial analysts, and industry analysts.

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Intelligent WAN Trends

The following five trends are key drivers of new requirements for the Intelligent WAN market.

SaaS and Public Cloud

SaaS and public cloud computing continues to grow strongly, with most organizations utilizing SaaS applications, including Microsoft's Office 365, Salesforce.com, Workday, and DropBox, as well as cloud infrastructure services like Amazon Web Services (AWS). IDC forecasts that worldwide spending on public IT cloud services will grow from $47.4 billion in 2013 to $107 billion in 2017.

Over the next five years, even as cloud computing's popularity continues to grow, many enterprises will not be comfortable having all of their workloads in the public cloud, so they will retain some on-premise applications. The challenge for IT managers will be interconnecting hybrid public and private cloud resources in a manageable, secure network.

Mobility

Increasingly, employees in geographically distributed locations are requiring access to VPNs, applications, and data on an anywhere, any time basis. IT organizations are being asked to support a wide range of corporate devices, including PCs, tablets, and smart phones. According to IDC, by 2017, 87% of all smart connected devices (worldwide) will be tablets and smartphones.

The combination of increased mobility (remote offices, home offices, on the road) and the diversity of devices (i.e. BYOD) challenges IT to deliver a secure, responsive application experience. The WAN must provide a low latency, secure environment for remote connectivity.

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Internet Bandwidth Costs

MPLS provides secure, low latency bandwidth for most organizations with large branch networks. However, MPLS is expensive, relatively low speed, and only provides connections between the branch and a central (data center) location. Internet connectivity is increasingly required at the branch for its high speed, low cost, and ability to connect remote users directly to any SaaS application. MPLS use will continue, but will become a distinct minority of WAN traffic.

Software Driven WAN functionality

The functionality of WAN optimization, edge routing, edge security, and remote management are intersecting as software-based functionality (based on SDN/NFV) becomes widely available. This functionality is often referred to as Software Defined WAN, or SD-WAN. Increases in hardware (server) and software efficiency means that IT organizations are no longer required to deploy dedicated devices (WAN optimization, routers, firewalls) to achieve desired performance and functionality. Software-based networking functions will enable delivery and market growth of WAN as a Service offerings. At a recent Open Networking User Group (ONUG) event in New York City, SD-WAN was named the most important Open Networking use case.

Management and Monitoring

Managing the WAN is one the leading pain points for IT organization. The cost and complexity of the network makes it difficult, time consuming, and costly to fix WAN problems, including performance and security issues. The Intelligent WAN must be easy to install (especially at remote locations), easy to operate, integrate well with routers/ network security, and provide rich centralized management capabilities. The IT organization from a centralized location must be able to rapidly resolve any WAN performance or security issues, change existing application priorities, and flexibility monitor and control WAN bandwidth.

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Forecast Assumptions: Intelligent WAN Market

The Intelligent WAN forecast in this report relies on the following forecast assumptions. Any changes to the forecast assumptions may result in significant changes to the overall forecast.

- The WAN edge will see growing intersection and overlap between the traditional markets of WAN optimization, edge routers, and perimeter security (VPNs and firewalls).
- Growing adoption of SDN and NFV technologies will enable broad Intelligent WAN functionality on flexible software modules that can be run at the customer premise on standard servers and WAN appliances, or delivered as a cloud-based service.
- Enterprise IT will continue a strong migration to SaaS applications and public/hybrid cloud.
- Intelligent WAN capabilities offered as Service (and delivered in the cloud) will see increased adoption over the next five years by traditional telecom providers, cloud providers, and other independent suppliers.
- Enterprise IT will reduce its dependence on high priced MPLS circuits in favor of Internet-based connectivity.

Forecasting the Intelligent WAN Market

The Intelligent WAN market includes the traditional WAN optimization market as well as an increasing percentage of the adjacent market opportunities of edge routing, perimeter network security (VPN, firewalls), and branch network management/monitoring. The growing adoption of SaaS and cloud-based services require organizations to take a new approach to WAN connectivity options, including an increased reliance on high speed, lower cost Internet connectivity. Software-based network technology (including SD-WAN) and WAN as Service delivery will enable

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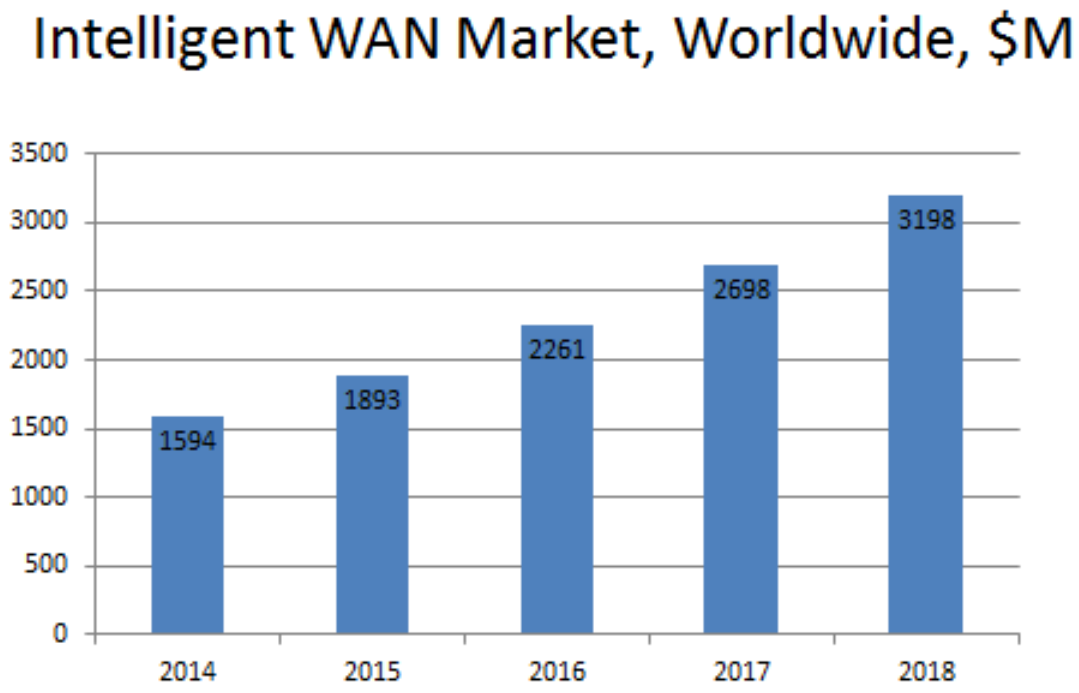
new customers (those outside the Fortune 1000) to consume Intelligent WAN functionality. These new IT mandates combined with technological innovation spurred by SDN/NFV will create new opportunities for Intelligent WAN suppliers.

Doyle Research forecasts that the worldwide Intelligent WAN market will grow from $1.6 billion in 2014 to $3.2 billion in 2018 – see Figure 2. The forecast includes sales of hardware (appliances), software, and Intelligent WAN as Service. The market value is based on the price paid by the end-customer.

Figure 2



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Conclusions

Managing a large number branch operations over the WAN has long been a challenging and expensive proposition. Organizations with branch offices require reliable, fast, secure connectivity to the WAN, internet, cloud-based applications, and the enterprise data center. A new class of Intelligent WAN products and services, driven by SDN/NFV technologies, are beginning to change the options for IT organizations. Customer requirements for Intelligent WAN functionality combined with software-based networking options and cloud-based delivery models will significantly change the WAN market over the next five years. Doyle Research forecasts that Intelligent WAN market will experience strong growth doubling from $1.6 billion in 2014 to $3.2 billion in 2018.

Meet the Author

Lee Doyle is Principal Analyst at Doyle Research, *providing client focused targeted analysis on the Evolution of Intelligent Networks. He has over 25 years' experience analyzing the IT, network, and telecom markets. During his 25+ years in the industry, Lee has written extensively on such topics as SDN, NFV, enterprise adoption of networking technologies, and IT-Telecom convergence. Before founding Doyle Research, Lee was Group VP for Network, Telecom, and Security research at IDC. Lee contributes to such industry periodicals as Network World, Light Reading, and Tech Target. Lee holds a B.A. in Economics from Williams College.*

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