

Figure 1. Revenue vs. Traffic Growth

Introduction

For Carriers and Operators, it's an ultra-competitive world, even in a strong economy, see Figure 1. How can you contain costs and respond to the rapidly changing business conditions - all whilst maintaining high visibility and compliance in your network? You need to maximize the investments made while providing the ability for the growing network analysis infrastructure to scale with business requirements. The ever increasing subscriber interest in, and revenue dependence on, new mobile services raises concerns about spotty network performance. The increase in the quantity and variety of analyzers needed to attach to network links can drive CAPEX and OPEX out-of-control. At VSS, we see the answer as a layer of intelligence to provide scalable visibility and control of traffic capture. This Network Intelligence Optimization layer reduces both CAPEX and OPEX and provides complete visibility across the network. By proactively copying, forwarding, and redirecting captured traffic in real-time, Network Operators can achieve higher service availability, lower labor costs for network analysis, lower analysis costs overall, and greater subscriber and revenue protection. VSS offers a series of products that optimizes and secures the flow of network analysis to any operations center, on any network, anywhere - helping the Operator fuel a sustainable competitive advantage and guarantee future operating success.

Our sample ROI report, see Figure 2, includes financial analysis and compares the estimated total cost of ownership (TCO) over three years between the current monitoring environment and a proposed Network Intelligence Optimization layer from VSS Monitoring. With this information, the Operator can better understand the potential direct and indirect savings to their organization, including how productivity will be enhanced as subscriber experience, service performance, and network maintainability are all improved. A system wide interconnected approach to deploying a monitoring/analysis measurement system will maximize return on new tool investment, and provide a greater return on existing investment.

	Cost Savings (3 Year TCO)	ROI Improvement
Constant Monitoring Scenarios:		
Benefit of Basic TAPs over No TAPs	\$ 819,800	
Benefit of VSS Unique TAP System over Other Vendors Tap System	\$ 586,977	72%
Periodic Deep Inspection Scenarios:		
Benefit of VSS Unique TAP System over Other Vendors TAP Systems	\$ 1,488,529	182%
COMBINED SUMMARY:		
Benefit of VSS Unique TAP System over Other Vendors TAP Systems	\$ 2,075,506	253%
A potential direct TCO savings of:		
- a direct CAPEX savings of:	\$ 1,120,500	over 3 years.
- a direct OPEX savings of:	\$ 293,112	over 3 years.
- a direct revenue protection impact of:	\$ 74,918	over 3 years.
An indirect TCO savings of:	\$ -	over 3 years.
The complete project is expected to cost:	\$ 1,891,654	to implement over 3 years.
Overall providing a return on investment [ROI] of:	2417%	payback of 2.0 months

The VSS System economic benefit is significant and provides a more compelling ROI over any other TAP vendor in the market. Our simplified ROI analysis of a large deployment example of 10 regional POPs for 4G LTE networking, shows an ROI improvement of 253% over other TAP vendors and an incremental bottom-line savings of \$2 million.

Figure 2. Sample ROI report

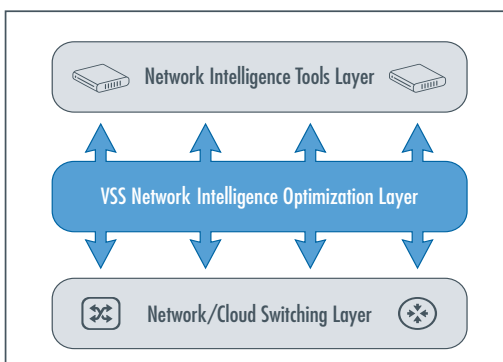


Figure 3. VSS Network Optimization layer

Benefits of the VSS solution approach

A clear alternative which reduces current levels of CapEx and OpEx, is to deploy a Network Optimization layer, thereby extending the life of existing tools even as the network capacity is upgraded, visibility of the network is increased system-wide, future tool expenses can be better managed / predicted and a centralized monitoring system realized. These advantages bring clear benefits to the operator's top and bottom lines.

Limitless Network Visibility

Whether the IT group is centralizing their network intelligence tools or the tools will remain distributed throughout the network - LAN, WAN, or across the Cloud - the network intelligence optimization layer in Figure 3 will provide complete visibility to the tools. Network "blind spots" can be eliminated because there is no more SPAN Port contention as the tools access traffic from the network intelligence optimization layer. Captured and groomed traffic maintains a centralized view of the network, regardless of physical location of the tools.

The immediate impact of the unprecedented network visibility is simplification of the network architecture, and a significant reduction in number of tools and consequently the management overhead. True end-to-end troubleshooting is now possible, resulting in much reduced response time to outage and repair (e.g. MTTR).

Increased Tool ROI

The intelligence of the system filters and grooms traffic to dramatically improve the efficiency of the tools. Many tools are application-specific, which means they are only interested in certain types of IP traffic coming from certain parts of the network. Selective hardware-based filtering, high data burst buffers and session-aware load balancing ensure that tools receive only the specific traffic they need to see (e.g. from specific VLANs), and that no packets are lost due to oversubscription.

Reduced Tool Cost

With a network intelligence optimization system between the tools and the network infrastructure, instead of a 1:1 ratio of tools to network links, network operations can monitor several links or the entire network with a single tool. This dramatically reduces the Capital Expenditure (CAPEX) needed to completely cover the network.

In addition, with the ability for a tool to receive only the traffic of interest, 1G tools can work with 10G network links. They no longer receive all network traffic, they receive only the required traffic at full line rates. The tools therefore can continue to perform effectively and accurately for a higher speed link. This defers or eliminates the need to purchase costly 10G tools.

It is also common that multiple same tools are interested in subsets of the same traffic type. Here, session awareness in the system allows traffic to multiple tools to be load balanced, so that each tool can analyze the entire session or conversation accordingly. The session-aware load balancing of high speed traffic to lower speed tools (e.g. from 10G to 1G) provides better quality data to the tools.

Lowest Cost of Ownership

The network intelligence optimization systems can scale with the evolving network needs simply by adding in more nodes. The overall solution cost of the network intelligence optimization layer is substantially lower than a non-systematic approach to deploying large number of tools. Lower management overhead, shorter time to troubleshoot network anomalies and repair mean further reduction in operating costs, faster ROI, and the ability to meet SLAs.

How can these efficiencies be introduced into your organization?

VSS can help Operators to minimize their current Network Intelligence costs by utilizing a Network Visibility layer. To see how much you can improve the effectiveness of your network, take the VSS ROI challenge by completing the form, see Figure 4.

The screenshot shows the 'VSS ROI Calculator' interface. At the top, there's a navigation bar with six sections: Section 1 (Network Today), Section 2 (Network Tomorrow), Section 3 (Analytics), Section 4 (Operations), Section 5 (Subscribers), and Section 6 (Contact Information). Section 1 is currently active. Below the navigation bar, the 'Network Today' section contains four questions, each with a corresponding input field:

- How many network links will be monitored?
- Are the monitored network links SPAN or inline?
- What is the average capacity (Mb/s) of all links to be monitored?
- What is the average utilization (% of capacity) of all links to be monitored?

At the bottom of the form, it says 'Page 1 of 6' and has a 'Next' button.

Figure 4. VSS ROI Calculator form



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VSS Monitoring is the world leader in Network Intelligence Optimization, providing a visionary, systems-approach for optimizing and scaling the connectivity between network switching and the entire network intelligence ecosystem of analytics, inline security, and WAN acceleration tools.

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