SOLARWINDS WHITEPAPER

The ROI of Network Management & Monitoring

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How Do You Measure the ROI of Network Management & Monitoring?

Given the criticality of the IT infrastructure to business critical applications and services such as e-commerce, voice, and business intelligence, the “network”, and its various components, is becoming more and more of a competitive differentiator for businesses of all sizes. Yet, according to a study by Computer Economics, an average of only 1.6% of revenue is spent on IT costs, which is down from previous years. While this value varies wildly across industries, one thing remains the same: IT staffs are being asked to do more with less as well as show a tangible ROI for investments made on IT.

Couple this with various mandatory regulations and protocols, stretched IT staffs, and complex, dynamic, virtualized network environments, and network management and you realize that monitoring software has become an essential business tool that can directly impact the bottom line. Companies of different sizes across all industries are implementing network management and monitoring software and, as a result, experiencing strong ROI, improved data analysis and reporting, and reduced network downtime. Even in an environment of financial prudence, organizations are finding a strong business case for investing in network management and monitoring software today.

Network management and monitoring benefits are typically realized across a number of areas that can be segmented into the following:

Salary/Staff Time Savings

Today’s complex networks require highly trained network professionals to maintain the network, configure new users, respond to support calls, and plan and support network expansions and changes. Automated technology that helps maintain or even reduce headcount offers a directly quantifiable return. In most cases, network management and monitoring solutions free network professionals to work on more strategic projects, which can reduce costs and drive increased revenue.

Reduced Network Downtime

Network downtime can be directly quantified by simply calculating the cost of the time a network professional spends troubleshooting and resolving the cause of the downtime. This cost, however, is simply the tip of the iceberg as far as the total cost of network downtime is concerned. Lost employee productivity, lost revenue, and lost customer goodwill are all examples of costs that are harder to calculate but have a much greater impact.

Reduction in Support Calls

Network management and monitoring solutions alert network management and support teams to potential problems before users start to complain and generate support calls. The cost of support calls can be easily calculated by looking at the number of calls per week, the time to resolve a support call, and the cost per hour of support time. By reducing the number of support calls through proactive monitoring and management of the network, you will be able to directly quantify the cost savings.

Decreased Time-To-Resolution

Time-to-resolution is the amount of time that it takes to resolve an issue once the network professional is notified. Network monitoring and management systems with real-time diagnostic data that is viewable through dynamic network maps can greatly reduce the amount of time required to troubleshoot and pinpoint the source of the issue.

Managing Service Level Agreements

Network operations teams are typically held to or measured against a quantifiable service level agreement (SLA) that is typically a percent of network uptime. This SLA can be an internal SLA or an external SLA with your service provider as an example. If network availability is directly attributable to a company's revenue (i.e. an on-line store), then the cost of downtime can be easily measured based on the average revenue that would have been generated during the downtime.

The Cost of Network Monitoring and Management

The cost of network monitoring and management is comprised of a number of different elements that combine to provide a total cost of ownership (TCO).

License Cost

Network monitoring and management solutions can be licensed perpetually (one time license fee) or on a subscription basis (monthly or annual fee). The number of devices, nodes, interfaces, or elements that are being monitored and managed typically determines licensing costs.

Product Maintenance, Support, and Upgrades

These costs are typically optional but need to be factored into the TCO. What level of customer support is offered? Are product upgrades included or are they separate.

Dedicated Hardware or Software

This is the price of the hardware such as a server or appliance that is required to run the solution. There may also be additional software components such as database software (SQL), virtualization software, or Windows® licenses.

Installation/Implementation/Consulting

In some cases, the cost of installation, implementation, and fine-tuning of the solution can be as high, or higher, than the cost of the up-front license.

Training

Determine if there are any training costs required to implement or operate the solution. Training costs needs to include both the initial training costs as well as any ongoing instruction that will be required as staff is turned over.

Solution Management

The cost of any staff that is dedicated, full or part-time, to the solution needs to be applied to the overall cost.

ROI of Network Management

In its simplest form, ROI is defined as the efficiency of an investment and is calculated by dividing the return, or benefit, of an investment by the cost of the investment.

$$ROI = \frac{(Gain\ from\ Investment - Cost\ of\ Investment)}{Cost\ of\ Investment}$$

The reality, however, is that your CFO is probably going to use the more comprehensive Net Present Value (NPV) and Internal Rate of Return (IRR) measurements to compare the investment in your network management solution against alternative investments that your business can make.

NPV is defined as the sum of the present values (PVs) of a series of cash flows. Cash flows can be either outgoing, such as the expense for your solution, or incoming, such as the savings or cost benefit of your solution. The key to accurately calculating NPV is to know what your businesses weighted average cost of capital (WACC) is. WACC, simply put, is your cost of money or the rate of return that could be earned on an investment in the financial markets.

$$NPV(i,T) = \sum_{i=0}^{T} \frac{C_T}{(1+r)^T}$$

$$NPV = -C_0 + \frac{C_1}{1+r} + \frac{C_2}{(1+r)^2} + \cdots + \frac{C_T}{(1+r)^T}$$

Where

$$-C_0 = Initial\ Investment$$

$$C = Cash\ Flow$$

$$r = Discount\ Rate\ or\ Weighted\ Average\ Cost\ of\ Capital$$

$$T = Time$$

The IRR is the rate of return the makes the NPV of all cash flows equal to zero. In more specific terms, the IRR of an investment is the discount rate at which the NPV of costs (negative cash flows) of the investment equals the value of the benefits (savings or positive cash flows) in the investment.

"We were wasting our resources on reactive problem-resolution when we should have been proactive instead."

Click here to read the case study

To figure out the costs, you would simply need to add up the costs associated with your solution. This would include any initial license or purchase costs, any annual costs for maintenance or support, any costs associated with extra hardware or software (servers, VM licenses, data base licenses, etc…), and any costs for consultants or training.

Calculating your cost savings or benefits becomes a little trickier but can typically be categorized as follows:

$$C_S = (S_{EP} + S_{LR} + S_{IT})$$

Where

$$C_s = Cost\ Savings$$

$$S_{EP} = Savings\ in\ Employee\ Productivity$$

$$S_{LR} = Savings\ in\ Lost\ Revenue$$

$$S_{IT} = Savings\ in\ IT\ Productivity$$

Savings in Employee Productivity

When the network goes down, then it's highly likely that someone is not working and that is costing you money in lost productivity. Unfortunately, it's not so simple to calculate the cost of employee productivity. One-way to do it, however, is to figure out what your company's average annual employee cost per hour ($E_{C/H}$) is. Do this by taking the average annual loaded cost per employee (E_C) and multiplying by the number of employees (E_{Count}) and then divide by the average number of hours worked per year (typically 2080 but may be less if you have many part-time employees).

$$E_{C/H} = \frac{Employee_{Cost}}{Hours\ per\ year}\ x\ Employee_{Count}$$

By taking the Employee Cost per Hour ($E_{C/H}$) and multiplying by the percent of employees affected by system downtime ($E_{Affected}$) and then by the impact of the outage on the employees (E_{Impact}), you can come up with an estimated cost in lost productivity (C_{LP}) per hour of downtime.

$$C_{LP} = E_{C/H}\ x\ E_{Affected}\ x\ E_{Impact}$$

By then multiplying this cost in lost productivity per hour of downtime by the estimated % reduction in network downtime ($DT_{Reduction}$), you get your savings in employee productivity.

$$S_{EP} = C_{LP}\ x\ DT_{Reduction}$$

Savings in Lost Revenue

Perhaps the revenue of your business is heavily reliant on network availability through an e-commerce site or a VoIP network, or some other portion of your network infrastructure. If so, network downtime can directly impact the ability to generate revenue. To calculate

the Savings in Lost Revenue (S_{LR}), you need to look at your Gross Revenue ($Revenue_{Gross}$), the yearly business hours ($Hours_{Business}$) that your network is generating revenue, and the Impact of Network Downtime on Revenue (R_{Impact}) to get to your Cost of Lost Revenue (C_{LR}).

$$C_{LR} = \frac{Revenue_{Gross}}{Hours_{Business}} \; x \; R_{Impact}$$

Again, multiplying the Cost of Lost Revenue by the Percent Reduction in Network Downtime will give you the Savings in Lost Revenue.

$$S_{LR} = C_{LR} \; x \; DT_{Reduction}$$

Savings in IT Productivity

Automating the process of network monitoring and management is going to have a direct impact on the productivity or your IT employees. By reducing the amount of network downtime or improving time to resolution when problems do arise, your IT team will have more time to focus on strategic projects that improve performance and reliability while reducing costs. Your annual Cost of Network Management (C_{NM}) is calculated by again computing the hourly loaded cost per IT employee ($IT_{C/H}$) multiplied by the number of IT employees focused on network management (IT_{count}) multiplied by the percentage of time focused on network management and monitoring (NM_{Focus}).

$$C_{NM} = IT_{C/H} \; x \; IT_{count} \; x \; NM_{Focus}$$

And once again, multiply your Cost of Network Management (C_{NM}) by the Reduction in Network Downtime ($DT_{Reduction}$) and you arrive at your Savings in IT Productivity (S_{IT}).

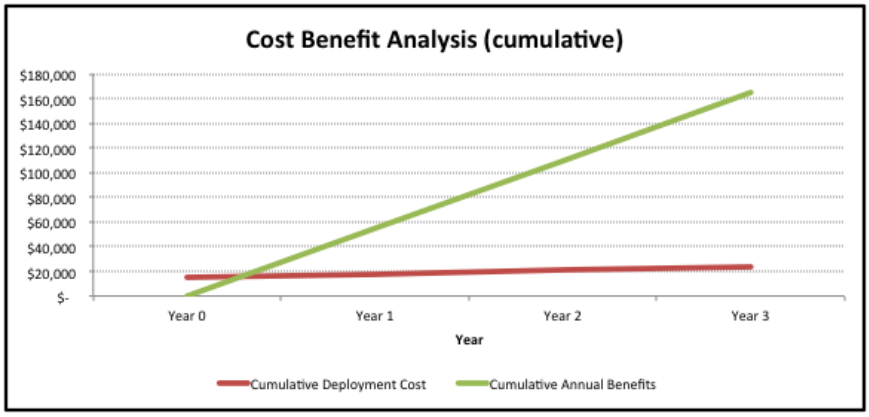
$$S_{IT} = C_{NM} \; x \; DT_{Reduction}$$

A Hypothetical Example

Let's take a look at a hypothetical business with the following characteristics and calculate the NPV and ROI for SolarWinds® Network Performance Monitor (NPM):

- A network infrastructure with approximately 1000 interfaces, 300 nodes, and 130 volumes.
- 3 IT employees focused on network management 100% of their time with an average annual loaded cost of $120K.
- An average monthly downtime of 60 minutes.
- Approximately 440 employees with an average annual loaded cost of $100K.
- 10% of employees affected by system downtime at any given time with a 10% impact of the outage on those affected employees.
- Approximately $305M in annual revenue over 2080 working hours with a 10% impact of network downtime on annual revenue.
- Estimated reduction in network downtime of 10% by deploying SolarWinds NPM
- 17% Weighted Average Cost of Capital, 35% effective tax rate, and a 3-year depreciation for software.

USD	Start Up	Year 1	Year 2	Year 3
SL2000 (up to 2000 elements) + Additional Polling Engine x 0 - License and 1st Year Maintenance	$14,975			
Annual Maintenance		$2,995	$2,995	$2,995
Total Annual Costs	$14,975	$2,995	$2,995	$2,995
Annual Cost Savings (Includes 3 year depreciation@35% tax rate)	$0	$55,014	$55,014	$55,014
Discounted (17% WACC) Net Cost Savings	($14,975)	$44,461	$38,001	$32,479
Discounted (17% WACC) Cumulative Cost Savings	($14,975)	$29,486	$67,486	$99,965
ROI Measures				
Discounted (17% WACC) Cumulative 3 Year Net Cost Savings				$99,965
Net Present Value (17% WACC)				$71,064
Internal Rate of Return (Based on Discounted Benefit Flow)				267.59%
Payback (in years)				0.29



Summary

As you can clearly see in the example above, implementation of a network management solution can have a tremendous financial benefit to your organization if you select a cost effective solution. SolarWinds Network Performance Monitor is a powerful network fault, availability, and performance management software solution that:

- Simplifies detection, diagnosis, & resolution of network issues – before outages occur
- Tracks response time, availability, & uptime of routers, switches, & other SNMP-enabled devices
- Shows performance statistics in real time via dynamic, drillable network maps
- Includes out-of-the-box dashboards, alerts, reports, & expert guidance on what to monitor & how
- Automatically discovers SNMP-enabled network devices & typically deploys in less than an hour

Instead of building a complicated spreadsheet to calculate your ROI, check out SolarWinds Network Management: Return on Investment Calculator and see just how financially beneficial NPM can be in your environment.