PAESSLER
THE NETWORK MONITORING COMPANY

WHITE PAPER

ROI Calculation for Network Monitoring Software

White Paper

PRTG NETWORK MONITOR

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Introduction

ROI is the magic abbreviation for any manager: „Return on Investment“ is intended to provide a simple calculation that determines the period during which an acquisition is amortized. Of course, when evaluating monitoring software, it would be interesting to know how long it would take until the purchase price of the software is regained by the various benefits of the software. However, so many incalculable factors come in to play that a precise ROI is impossible to calculate. It still doesn’t hurt to take as many numbers as possible into account when evaluating a monitoring solution, and to consider these for the decision.

The Impossibility of Quantification

The cost side of introducing of a monitoring solution can be put into numbers rather easily and reliably: license and hardware costs, implementation investment and service costs can usually be calculated precisely. The difficulty lies in quantifying the benefits of a monitoring solution. After all, monitoring does not initially generate revenue, but instead obviates losses by preventing failures. But what damage actually occurs if a mail server crashes? How much do two hours of downtime of the entire IT cost? How high are the losses if a website is offline for a day? And above all: which failures will the monitoring software actually prevent?

Another aspect of implementing a monitoring solution is long-term data collection, on the basis of which optimization measures are planned and executed: hardware and bandwidth can be acquired and distributed to meet exact requirements or avoid excess costs accrued by unused resources and failures through long-term optimization. This poses the question when calculating the ROI: how do you know in advance how much you might save through long-term optimization – especially while searching for the tool that should identify this saving potential for you?

How, then, should you orient yourself and how can you decide whether the purchase of a monitoring solution will ultimately be profitable? First, you should determine all the figures you can. Even if you don't end up with an exact ROI, every number helps. In the following pages, we have gathered various average values and example numbers that can – if used with caution – help you estimate the cost and value of network monitoring solutions.

Statistical Costs for IT Failures

In 2012, American analyst Michael Krigsman calculated the global costs generated by IT failures to be 3 trillion USD per year[1]. With this estimate, Krigsman puts the results of a study by the British Computer Society into perspective, which estimated the costs to be above 6 trillion USD in 2009. Another study by software manufacturer CA Technologies claims IT failures, on average, cost small companies 55,000 USD, mid-sized companies 91,000 USD and large companies and corporations 1,000,000 USD[2]. Gartner estimated the average costs for network downtime in 2014 to be 5,600 USD per minute of downtime, which equates to 300,000 USD per hour[3].

The collaboration specialist Avaya calculated a similar value in a survey[4] of European companies. 81% of the surveyed companies suffered network failures in 2013, which resulted in average costs of approximately 68,000 EUR for 77% of the companies. One in five of the affected companies let the responsible IT staff go as a result. In Germany, it was one in four.

The German research company Techconsult performed a study in 2013 that examined the cost of IT failures in German mid-sized companies[5]. 300 companies with 200 to 5,000 staff were surveyed. This study revealed considerable yearly losses as well: 380,000 EUR per year, per company. One hour of downtime for the IT systems is estimated to cost between 20,000 EUR and 40,000 EUR and the participating companies had on average four failures per year and recorded the restoration duration to be 3.8 hours per failure.

The Bern University of Applied Sciences had a very different, theoretical projection[6]. In 2009, the costs for IT outages in smaller companies were classified according to various factors and then simulated using a fictitious company with 50 staff and yearly revenue of roughly 4 million USD. The result was 10,000 EUR per outage and around 5,000 EUR per hour of network downtime. This study is somewhat older, but remains of interest because it takes smaller companies into consideration, which are seldom included in such analyses. Analysts like Gartner and companies like CA and Avaya have a clear focus on large companies. What they consider to be 'small' companies are often much larger than the fictitious company in Bern University's study.

[1] Michael Krigsman on ZDNet:
www.zdnet.com/article/worldwide-cost-of-it-failure-revisited-3-trillion

[2] Article about CA Technologies' study on InformationWeek:
www.informationweek.com/it-downtime-costs-$265-billion-in-lost-revenue/d/d-id/1097919

[3] Gartner-Blog:
http://blogs.gartner.com/andrew-lerner/2014/07/16/the-cost-of-downtime

[4] Results of the Avaya study on manage it:
http://ap-verlag.de/komplexe-netzwerke-und-ausfaelle-kosten-unternehmen-umsatz-und-arbeitsplaetze/6266/

[5] Evaluation of study in CIO magazine
www.cio.de/a/it-ausfall-kostet-bis-zu-41-000-euro-pro-stunde,2918599

[6] Study as Whitepaper from Bern University of Applied Sciences:
www.taf-consulting.com/wp-content/uploads/2010/04/Meyer-2009-Was-kosten-IT-Pannen.pdf

Regardless of their accuracy and relevance for individual companies, these numbers show that IT outages cause substantial financial damage and everything that can help to avoid them and/or quickly resolve them is generally worthwhile and justifies a certain (financial) investment. But in order to create a sound foundation for your decision, you need more: various factors must be considered.

Numbers and Factors for ROI Estimation

Some factors are relatively easy to quantify and should be familiar to you.
Here are some examples:

- Costs = salary and benefits for IT staff
- Average time required to restore failures and network downtimes
- Number and duration of network downtimes that affect productivity of staff, individually or collectively within a specific time frame (the past year, five years, …)
- Average revenue via web shop
- Contractually arranged compensation for nonadherence to SLAs by service providers

Other factors are much more difficult (or impossible) to quantify, such as the following:

- Unavailability of customer support
- Unavailability of the website as an image or marketing instrument
- Failure of individual systems while others are still functioning

It becomes even more difficult in cases where there is no total outage, only performance setbacks, such as slow website response times, or delayed emails:

- How many clients make purchases in a slow web shop and how many give up if the page loads too slowly?
- What are the effects if internal systems work painfully slowly, but staff is still able to complete their tasks?
- What damage occurs if emails are delayed?

Although they are relatively easy to substantiate, these inconspicuous costs are often underestimated because they are easy to ignore in day-to-day routine. One example of this is the additional workload that accumulates if you are constantly, laboriously searching for the source of smaller outages. If you invest an average of four hours per week in this task, that amounts to 10 % of your work time – with a yearly salary of 75,000 USD, that's already 7,500 USD per year. That's more than enough to purchase some monitoring solutions, which would take over this workload for you. Of course, that amount does not include other costs generated by these outages, like the important tasks that get left by the wayside or detraction from general productivity.

Incalculable Dreams of the Future

So far, one of the integral factors of ROI calculations has been mentioned only briefly: comprehensive monitoring solutions do not only provide short-term error recognition and alerting, but also offer the opportunity to optimize the entire IT based on intelligent evaluation of data gathered over time. If, for example, parts of the infrastructure are virtualized, precise knowledge of the bandwidth and memory requirements of the affected applications is essential. Long-term data is needed to ensure that even temporary peak demands are included. A classic example is accounting software that regularly produces network loads at the end of each quarter, but runs idle the rest of the time. It becomes even more interesting when monitoring solutions support trending and can independently evaluate data so as to predict forthcoming developments. In its simplest form, this could be continuous monitoring of a hard drive that precisely predicts when the capacity of the drive will be used up. But in some cases, even data flow developments or impending bottlenecks and outages can be predicted.

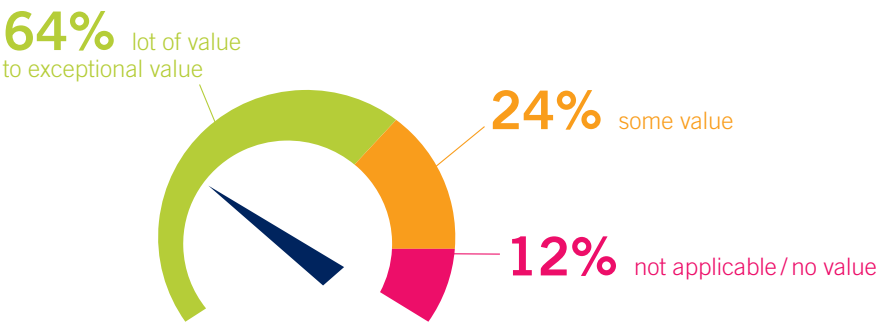
Can the potential benefits of a monitoring solution as a foundation for long-term network optimization be translated into concrete numbers? No! Is this optimization a deciding factor in evaluating the right tool? Yes! This optimization is an abstract factor beyond concrete numbers that you will have to judge according to your experience and take into consideration for the decision. Other companies' experience might be helpful in evaluating the value of the optimization.

Real-Life Numbers

For years, Paessler AG has been running continuous customer surveys. Clients are asked, among other things, about savings through PRTG Network Monitor. One analysis of answers from 648 clients in 2015 shows the potential that implementing a suitable network monitoring solution can bring.

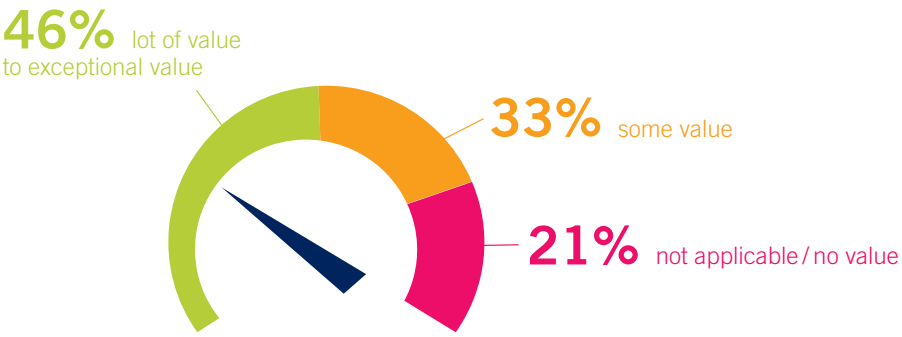
TIME SAVING IN NETWORK MANAGEMENT

154 of 648 clients (24%) report saving some work time with PRTG, while 415 clients (64%) save a lot of time to an exceptional amount of time.



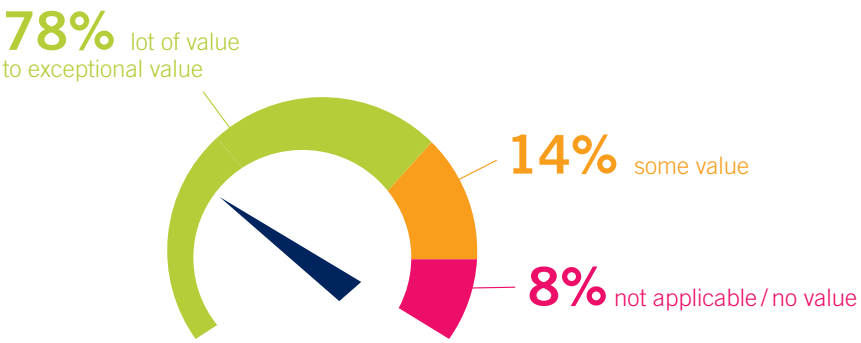
COST SAVING IN NETWORK MANAGEMENT

The question regarding network management costs returns similar values. 46% (301 clients) save a lot of value to exceptional value and 33 % (213 clients) indicate saving some value.



IMPROVEMENT IN RELIABILITY

An impressive 78% (504 clients) confirm that PRTG has considerably increased the general reliability of their IT.



Hidden Costs in Monitoring Solutions

Above, we described the cost side of monitoring solutions as being relatively easy to calculate. This is generally correct, but there are other factors here that must be considered as well.

1. MODULES AND ADD-ONS

Many solutions are like big building sets, containing a lot of different tools, add-ons and modules. What seems reasonable at first – you just buy what you need – often turns out to be a complicated money pit. It can be extremely difficult to assess which modules will be needed in advance and to include these in the calculation. Once you've implemented the solution, you will most likely prefer to bite the bullet and purchase missing modules instead of going through the effort to replace the solution right after purchasing it.

2. OPEN SOURCE VS. LICENSE COSTS

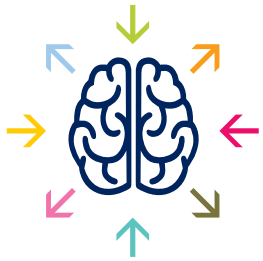
Open source solutions seem to offer huge saving potential at first – after all, you save the (sometimes formidable) license costs of commercial software. However, these solutions usually require high investment for implementation and maintenance. With the help of a neutral Nagios expert, monitoring provider Paessler created an example calculation of the costs for licensing, implementation, customization and one year of operation for a Nagios installation and a PRTG Network Monitoring installation: while implementation of PRTG came to a total of 5,412.50 EUR including license costs, the Nagios experts estimated their costs to be over 10,000 EUR[7].

[7] www.paessler.com/nagios-alternative

Of course, this doesn't take into consideration that you and your Linux experts undoubtedly have enough other tasks to worry about without investing huge effort in implementing and maintaining a monitoring system.

Conclusion: Realistic Estimation Instead of Blind Faith in Numbers

First of all: the available ROI calculators often are not really constructive. The human brain is still much more powerful than any computer, where intuition, abstraction and transfer of learning are concerned. Of course, these calculators can be used for interest's sake – taken with a grain of salt, the numbers can be helpful – but be prepared for endless contact requests from Xing and LinkedIn, if you have to enter your contact data to view the results.



It's better to trust in your healthy common sense and to collect, evaluate and compare available numbers. These can be costs calculated by analysts for IT outages, examples from client case studies, average values for outage times of IT components, etc. However, concrete costs also play an important role, including salaries for responsible staff, daily revenue from the web shop or the number of employees in the company. You also need to keep company-specific costs in mind, as the prices you see on the manufacturer's page do not necessarily reflect the end cost of the monitoring solution – implementation, consequential costs for upgrades and modules and maintenance costs must be included in the calculation as well.

Above and beyond all number games, you should factor in your own experience with outages that could have been prevented by efficient monitoring. This isn't about formulas and calculations, but about developing a sense of the costs that could be – or may have already been – incurred through disturbances in your IT systems. And don't forget the potential added value that a monitoring solution can provide through long-term IT (cost) optimization. Here's a brief overview of the most important factors:

Costs

- License costs
- Implementation effort
- Upgrades und modules
- Service fees
- Maintenance effort

Benefits

- Damage prevention
  - Concrete damage caused by outages and interference
  - Damage to company image due to down times in the website or customer support
- Reduced workload for IT personnel
- Long term IT optimization

Of course, these are not all possible factors that must be taken into consideration. Much depends on your company's business model: is your website purely a marketing instrument, or does a web shop generate most of your revenue? Can your clients demand higher compensation if you violate the arranged SLAs? Is your team consistently understaffed and thankful for anything that reduces their daily workload? You know your company, your numbers – trust your intuition and think outside the box.

ABOUT PAESSLER AG

Paessler AG's award winning PRTG Network Monitor is a powerful, affordable and easy-to-use Unified Monitoring solution. It is a highly flexible and generic software for monitoring IT infrastructure, already in use at enterprises and organizations of all sizes and industries. Over 150,000 IT administrators in more than 170 countries rely on PRTG and gain peace of mind, confidence and convenience. Founded in 1997 and based in Nuremberg, Germany, Paessler AG remains a privately held company that is recognized as both a member of the Cisco Solution Partner Program and a VMware Technology Alliance Partner.

Freeware and Free Trial versions of all products can be downloaded from www.paessler.com/prtg/download.

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