# END USER EXPERIENCE MONITORING

A Monitoring and Validation Framework for Continuous Performance Improvement

Swish

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## THE CHALLENGE

The inability to see what users are experiencing as they interact with applications negatively impacts mission attainment for many government agencies. In trying to solve the lack of visibility problem, many agencies find themselves with too many tools and too few solutions. While Network Performance Monitoring (NPM) and Application Performance Monitoring (APM) are mainstays, both approaches leave a visibility gap. Neither address what the end user is truly experiencing. They attempt to address end user monitoring through elimination tactics and third person perspectives but neither provides a first-person view, which is what you get with a true End User Experience Monitoring (EUEM) solution. Using a EUEM solution gives an agency real-time, accurate awareness of performance issues and where they occur. This unlocks additional value in existing NPM and APM solutions. When the time required to identify a problem is reduced effectively to zero, the next evolution in observability and troubleshooting begins.

## WHAT EUEM BRINGS

The Tech Services Industry Association (TSIA) states that when it comes to support metrics, there are 4 categories that matter:

- Volume Staffing
- Employee Productivity
- Customer Experience
- Financial

A properly instrumented EUEM solution addresses all 4 of these categories. Knowing the volume of software and application usage provides valuable information for both staffing and software license counts. Knowing how applications are performing impacts both employee productivity and the customer experience. These metrics help to evaluate the ability of an agency to efficiently delivery on mission attainment, with the resources on hand. End User Experience Monitoring provides actionable insights into the experience of the personnel driving the agency's mission, allowing for instant quantification of problems, which leads to immediate response to performance impeding events. And, EUEM delivers substantial ROI savings.

## AGENCY GOALS

Using Aternity, Swish provides a fully functioning End User Experience Management solution to DHS which enabled immediate validation and insights into what the agency is truly providing to all end users. With each member of the Swish team having more than 15 years of experience in performance engineering, they worked loosely with DHS to install, train, and fully integrate the Aternity EUEM solution, empowering agency personnel to efficiently address all aspects of enterprise end user experience.

The Swish team's specialized engineers engage agency staff and resources in identifying potential visibility gaps and mission critical targets, personnel and applications. Upon identification they collaborated with DHS personnel to devise a plan of action with the following objectives:

- Instrument target applications with Aternity EUEM agents.
- Create custom monitoring for transactional insights into target applications.
- Create dashboards and reports to monitor, analyze, validate and troubleshoot end users, applications and endpoint performance.
- Provide role-based adoption training to maximize the value of the Aternity EUEM olution.
- Devise a plan of action surrounding the long-term integration of Aternity with existing DHS solutions, such as Splunk, ScienceLogic, and ServiceNow.

This engagement resulted in expedited ROI for existing investments, increased staff efficiencies, greater performance transparency, and improved decision-making.

## AGENCY BENEFITS

Swish's implementation of Aternity EUEM provided the following benefits to DHS:

- Reduced Mean Time to Response (MTTR)
- Reduced Mean Time to Identify (MTTI)
- Accurate inventorying of agency-wide software; combatting "shadow IT"
- Validation of SaaS, security, VDI, and other infrastructure changes
- Quantification of cloud and SaaS SLAs; holding vendors accountable for service delivery
- Validation of other tools and software solutions. Aternity is a great tool for use in Proof of Concept evaluations.

Because Aternity accounts for time spent in every application used across the agency, it can be instrumental in determining software usage; potentially reducing investments in software "That are" under-utilized. Using Aternity, many agencies also find that previous estimates on software requirements were high. Lastly Aternity has the added benefit of enhancing the value and ROI of "existing monitoring and troubleshooting solutions.

## SWISH ADDED VALUE

In addition to the above-mentioned benefits, the Swish Center of Excellence (CoE) team provides a direct lifeline to critical support. This team provides architect-level engineering expertise which serves as a guide through the complex challenges in today's technological landscape. This team includes several former Riverbed employees, including Sean Applegate, Riverbed Public Sector CTO, who serves today as Swish's CTO. Sean worked at Riverbed for over nine years, supporting many of the largest deployments in the world. He directly brings extensive real-world experience to insure customers' EUEM success.

## RETURN ON INVESTMENT

Major business analysts unanimously agree that end-to-end observability with proactive problem identification - backed by detailed monitoring, analysis, troubleshooting and validation capabilities - delivers tremendous ROI benefits. A breakout of the formulas and data sources used to determine approximate ROI's are included in the following sections.

### Helpdesk Trouble Tickets

EUEM dramatically reduces MTTR and outages by providing insights into mission critical application performance. EUEM also quantifies and verifies performance after software updates, patches, cloud migration, and other configuration changes. The cascading benefits result in higher productivity from IT and support staff, as well as increased productivity due to the availability and speed at which end users can access mission critical applications. This force multiplier effect results in more productive use of IT staff resources, which in turn enables a combined reduction in service tickets and manpower. The following formulas are used for approximating the ROI for an organization consisting of 15,000 users which is the approximate number of users within DHS.

| | | |
|---|---|---|
| **Average Helpdesk Costs** | Tickets/Month | 17,100 |
| | Cost/Ticket | 15.56 |
| | Total | $266,076 |

*Figure 1 – Average service desk cost per ticket.*[1]

This brings the total annual cost of the organization's help desk to $3,192,912. With Aternity reducing ticket volume by 15%[2] a savings of $478,936 per year can occur. Over 5 years, this accounts for $2,394,684 in savings for help desk tickets alone.

## Software License Consolidation

Another way Aternity can assist in savings is through software license consolidation and validations. Unused software not only causes a larger attack surface for security intrusions, it is also financially inefficient. Figure 2 illustrates that the average waste per user on software licensing in the US and the UK is $247/user.

*Figure 2 - Software waste is defined as any piece of software that has been deployed to a desktop, but is not being run by the user. An application is determined to be "unused" if it has not been run within the last 90 days, and "rarely used" if it has not been run within the past 30 days. "Total Waste" is the combined sum of both.[3]*

| Software License Costs | | |
|---|---|---|
| | Cost/user | $247 |
| | Users | 15,000 |
| | Total | $3,705,000 |

*Figure 3 – Using 15,000 DHS users; software license costs total almost $4M.*

Aternity provides detailed reports of software usage per user. If inventorying does not exist to address software usage, there is potentially up to $4 million in savings that an organization of this size might recognize. If you assume that DHS operations has addressed software waste, the potential savings drops to 5% which is $185,250/year.

Figure 4 shows the composition of a service desk ticket:

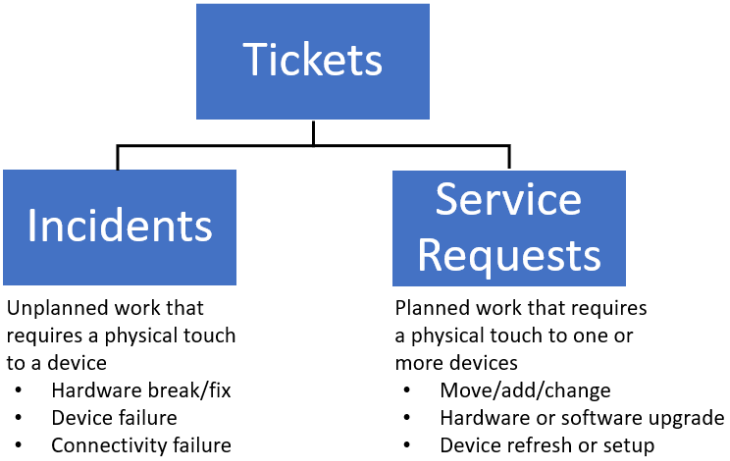


*Figure 4 – Service desk ticket composition*[4]

Figure 5 shows the potential savings as it pertains to EUEM:

| Service Desk Cost Metrics | North American Statistics | | |
|---|---|---|---|
| | Average | Min | Max |
| Cost Per Ticket | $15.56 | $2.93 | $49.69 |
| Cost Per Minute to Handle Time | $1.60 | $0.76 | $2.50 |

*Figure 5 – Service desk average cost per ticket*[5]

| | Statistic | Financial Services | High Tech | Equip Mfg | Telecom | Business Services | Healthcare | Energy Utilities |
|---|---|---|---|---|---|---|---|---|
| Incidents per seat per month | Avg | 0.67 | 0.56 | 0.39 | 0.43 | 0.72 | 0.3 | 0.36 |
| | Min | 0.19 | 0.14 | 0.11 | 0.12 | 0.22 | 0.12 | 0.07 |
| | Max | 1.95 | 1.82 | 1.24 | 1.56 | 2.07 | 0.65 | 1.01 |
| Service requests per seat per month | Avg | 0.32 | 0.42 | 0.22 | 0.31 | 0.42 | 0.11 | 0.2 |
| | Min | 0.1 | 0.29 | 0.14 | 0.13 | 0.14 | 0.05 | 0.1 |
| | Max | 1.2 | 1.41 | 0.62 | 0.94 | 1.44 | 0.36 | 0.59 |
| Total tickets per seat per month | Avg | 0.99 | 0.98 | 0.61 | 0.74 | 1.14 | 0.41 | 0.56 |
| | Min | 0.29 | 0.43 | 0.25 | 0.25 | 0.36 | 0.17 | 0.17 |
| | Max | 3.15 | 3.23 | 1.86 | 2.5 | 3.51 | 1.01 | 1.6 |

*Figure 6 – Average help desk tickets and incidents per month, per industry*[6]

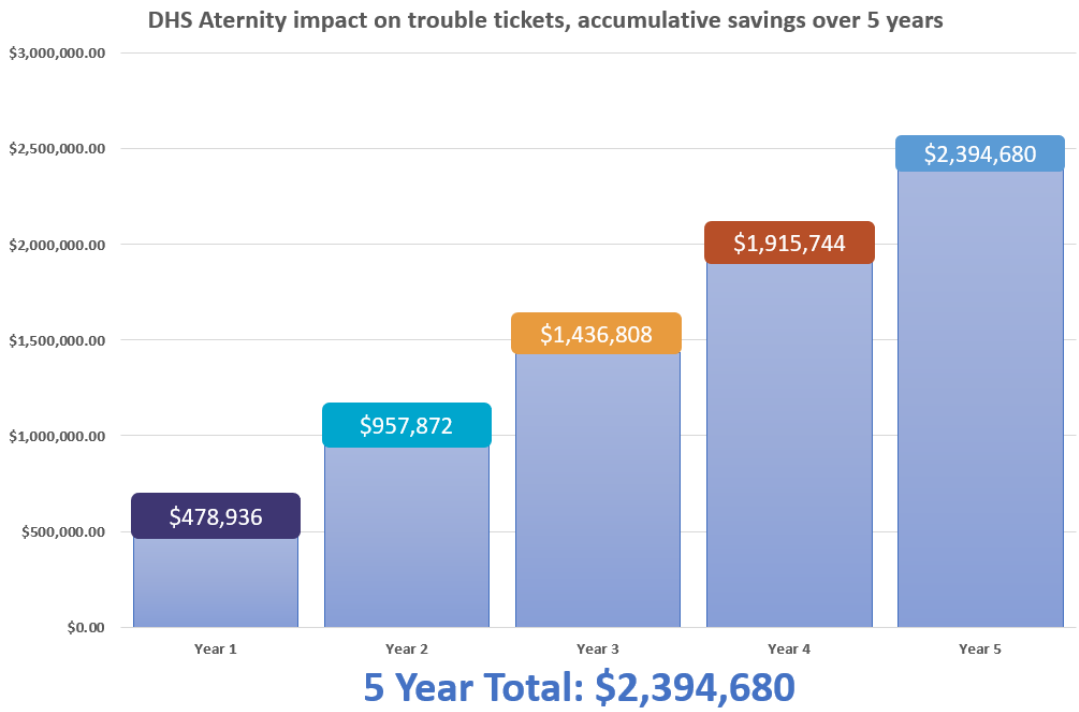


*Figure 7 –ROI impact on trouble tickets with Aternity*

## Software License Savings

Knowing specifically which users are using what software and how often, results in significant savings on hardware and software. While these savings are generally recognized in the first year, additional ongoing savings occur when using Aternity. The market research referenced in Figure 8 provides validation of this savings:

**25-50**% savings

https://www.ivanti.com/blog/it-asset-management-calculator

**30**% savings

http://www.baselinemag.com/c/a/Projects-Enterprise-Planning/8-Secrets-to-Software-Licensing-Management-Savings

**25-75**% savings

https://www.infoworld.com/article/2624496/it-s-biggest-money-wasters.html

*Figure 8 – Market research on hardware and software savings*

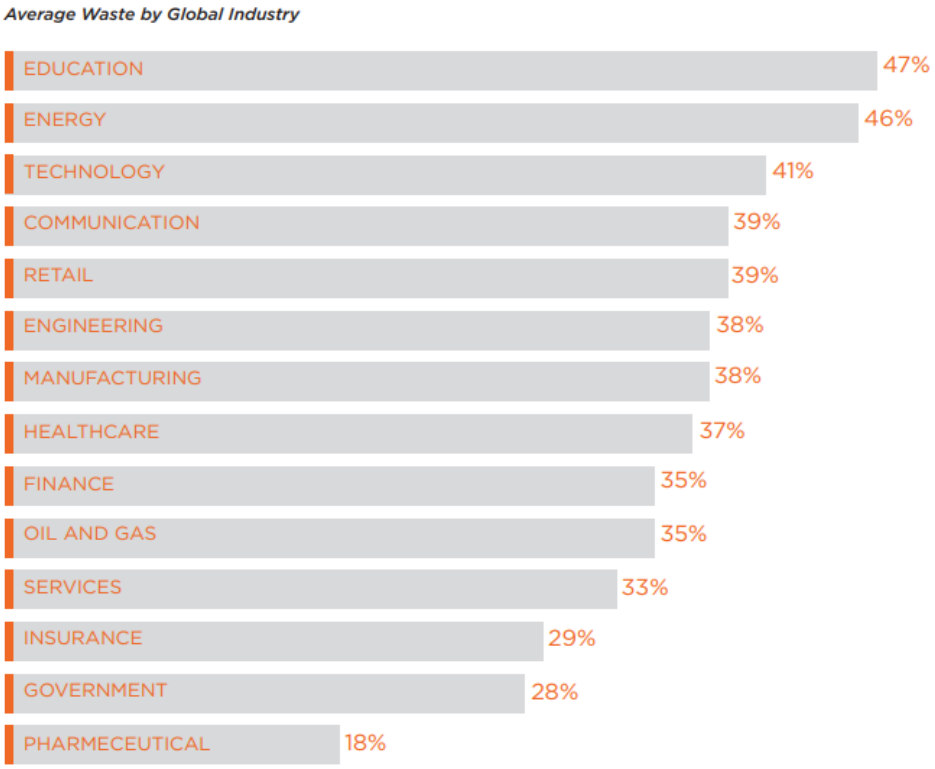


*Figure 9 – Unused software by industry.*[7]

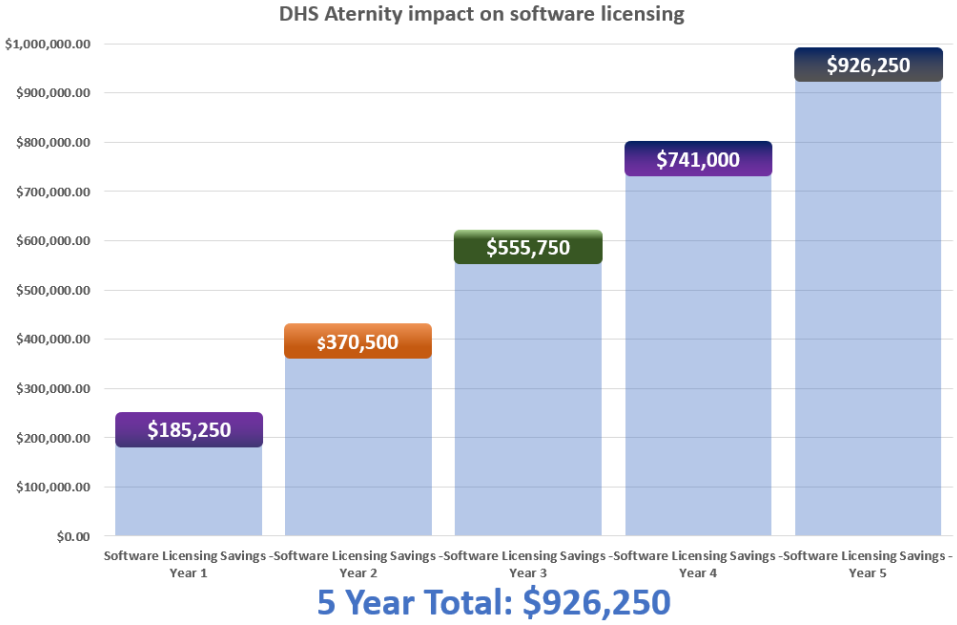


*Figure 10 –ROI impact on software licensing cost per year*

## ROI SUMMARY

The most striking metric regarding Aternity's ROI is perhaps the following:

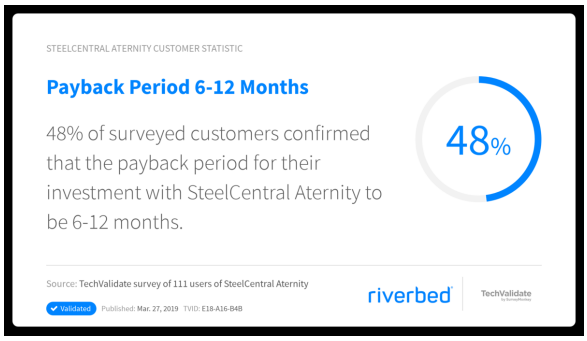


*Figure 11 – Aternity payback period*[8]

Figure 12 below takes into account industry metrics on help desk costs, software costs, MTTR and Aternity's proven impact on the typical deployment. These numbers are generally conservative, considering Swish ensures successful adoption, integration, and training for the solution.

| ROI Breakdown (5 yr) | | |
|---|---|---|
| | Help desk | $2,394,680 |
| | Software | $926,250 |
| | MTTR/Operational Efficiency | $276,412 |
| | **TOTAL** | $3,597,342 |

*Figure 12 – ROI breakdown over a five-year period*

## CONCLUSION

In today's complex IT environments, like that of DHS, it is imperative to have insights and quantifiable and actionable intelligence into the organizational infrastructure at every level. Network Performance Management and Application Performance Management tools are necessary but leave a blind spot. They don't provide insight into what end-users are experiencing. Adding Aternity to an agency's portfolio of monitoring tools greatly enhances the organization's monitoring and validation framework which becomes the foundation for continuous performance improvement.

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Adding the investment in Swish's performance engineering expertise helps agency's recognize 10 to 15 times return on investment. Furthermore, this expertise results in enhanced end-to-end performance capabilities, broader workforce enablement, and optimized performance processes.

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[1] BMC Blog: Service Management – Cost per Ticket; the Ultimate Service Desk Metric https://www.bmc.com/blogs/cost-per-ticket/

[2] TechValidate Digital Experience Management Survey https://www.techvalidate.com/portals/riverbed-digital-experience-management

[3] 1E Report: Software Waste Benchmark Findings https://www.1e.com/news-insights/blogs/us-software-waste-28-billion/

[4] MetricNet – Metric of the Month: Tickets per User per month https://www.thinkhdi.com/~/media/HDICorp/Files/Library-Archive/Insider%20Articles/cost-per-ticket-per-user.pdf

[5] BMC Blog: Service Management – Cost per Ticket; the Ultimate Service Desk Metric https://www.bmc.com/blogs/cost-per-ticket/

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[8] TechValidate Digital Experience Management Survey https://www.techvalidate.com/portals/riverbed-digital-experience-management?collection=aternity-techfacts

## About Swish

Swish is a customer-centric, specialized integrator with an engineering first culture. Swish focuses on IT Modernization, Performance and Cybersecurity solutions. Swish strives to bring value to clients through continuous improvement expertise; robust services, superior engineering and creative solutioning.

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