NOT ALL END USER EXPERIENCE MONITORING SOLUTIONS ARE CREATED EQUAL

COMPARING ATERNITY TO FOUR OTHER END USER EXPERIENCE MONITORING APPROACHES
Although traditional APM and device monitoring products provide some aspects of End User Experience Monitoring, enterprise IT Ops teams relying on these solutions can find themselves blind to what their workforce users are actually experiencing.

End User Experience Monitoring goes hand in hand with Application Performance Management (APM). In its Magic Quadrant for Application Performance Monitoring, Gartner considers End User Experience Monitoring the first of the five functional dimensions necessary for enterprises to achieve the objectives of APM. After all, analyzing the performance of an application requires data on how application parameters like availability, latency, response time, and usability appear to the end user. As a result, every leading APM vendor includes End User Experience Monitoring as part of its solution.

Physical and virtual device monitoring products include different aspects of End User Experience Monitoring that are not covered by traditional APM vendors. By monitoring events, processes, resource consumption, memory, and hard drive performance, these products provide IT Ops a view into problem areas that potentially impact the experience of their end users.

Although these products provide some aspects of End User Experience Monitoring, enterprise IT Ops teams relying on these solutions can find themselves blind to what their workforce users are actually experiencing as they use the full range of business critical applications on mobile, virtual, and physical devices. Traditional APM and device monitoring vendors leverage four approaches commonly found in the market to solve some of the problems some of the time, but each has important limitations. Explaining this conflict requires a deeper look at what other vendors classify as End User Experience Monitoring.

### 1. Synthetic Monitoring

Synthetic monitoring is an approach in which a script is executed that emulates users interacting with applications. The scripts are run at periodic intervals to proactively identify application availability and execution issues before End User Experience is impacted. This approach is useful in determining application availability and establishing general performance baselines, especially for applications that are not accessed by real users 24 hours a day, 7 days a week. Synthetic Monitoring is also valuable for applications that rely on APIs to access third party services. However, this solution knows nothing of an organization’s end users and their actual experience. If an end user were to call the service desk with a problem, this solution would tell them nothing about what the end user was actually doing or experiencing. In addition, it can be time-consuming to create and maintain the scripts on which this approach relies.

### 2. Network-Based Packet Capture

These solutions gather network-based response time and error metrics from the network, browser, or application that impact End User Experience, such as HTTP/HTTPS or other network transactions on the wire, such as TCP. This approach requires close coordination with network engineers to identify the optimum points in the network to place the specialized networking equipment required to aggregate and filter traffic for analysis. Although packet aggregation and brokering gear can also be used for security and network management, it becomes exponentially more expensive as network speeds increase. Network-based packet capture solutions do not provide visibility into the actual screen render time within the browser or application, resulting in cases of dubious End User Experience reports. Web and network requests or responses can go over the wire sub-second, but if there is heavy client-side processing or a lot of data, the screen within the browser or application can take 10 seconds or more to render. Apps delivered via cloud or virtualization also present challenges to this approach. This approach cannot monitor the wide variety of enterprise applications that are not web-based or application activities that don’t generate network traffic, such as opening a cached email in MS Outlook. Finally, these solutions provide no data about what is happening on the user’s device, which often correlates to user experience.
### 3. JavaScript Injection

This solution injects JavaScript code into a web application in order to get timings of what is occurring within a user’s browser. This approach can include calls to 3rd party apps, so it gets closer to the actual user’s experience, but works only for web applications and hybrid mobile apps.

JavaScript injection cannot provide any correlating metrics about what’s happening on the user’s device. Monitoring applications that are hosted outside of the control of the enterprise, such as SaaS based applications, requires JavaScript injection using proxy servers or load balancers, which adds complexity, expense, and implementation challenges for fragmented network topologies.

### 4. Physical and Virtual Device Monitoring

In today’s converged, next generation end user computing environment, the workforce navigates seamlessly between physical, virtual, and mobile devices as they conduct business using a broad portfolio of apps. Device monitoring solutions monitor operating system metrics like resource utilization (CPU, memory, etc.) and health (application crashes, blue screens, etc.), which are certainly important factors that can impact user experience. Device monitoring has also become popular in the VDI space for physical to virtual assessments and for monitoring the virtual desktop infrastructure.

Device monitoring does not provide any insight into how end users are actually experiencing the applications they use. When users call to complain that the application in their VDI environment is running slowly, they are not complaining about device metrics like CPU or memory. They are complaining about their ability to execute a business activity, like look up patient, process an insurance claim, or search a customer record.
By effectively transforming every device — mobile, physical, or virtual — into a self-monitoring platform that is user experience aware, enterprises can measure, manage, and improve workforce productivity for the full range of applications in the enterprise portfolio delivered on any device.

A different approach is required to close the visibility gap between your workforce’s real user experience and what application-centric APM tools or device monitoring tools provide. The problem is that you can’t accurately measure End User Experience by starting at the data center and looking out. You have to start from the perspective of the end user looking in.

Aternity monitors any application on any physical, virtual, or mobile device, providing a user-centric vantage point that closes the visibility gap existing with traditional APM and device monitoring tools. This approach uniquely provides a complete view of End User Experience and device metrics correlated to that experience, for the full range of applications and devices that the enterprise workforce relies on in today’s converged cloud, mobile, and virtual environments.

Track workforce productivity across the full portfolio of apps used on all devices
As enterprises adopt the constant stream of new business-critical applications delivered via cloud or on premise, running on physical, virtual, and mobile devices, IT must keep pace to ensure quality of service and workforce productivity. The following table illustrates a side-by-side comparison of the approaches to End User Experience Monitoring for seven common real world scenarios encountered by the enterprise workforce. The table illustrates the advantages of Aternity. Instrumenting physical or virtual devices with agents, or mobile apps with an SDK, uniquely provides a complete view of End User Experience and device metrics correlated to that experience, for the full range of applications and devices that the enterprise workforce relies on in today’s converged cloud, mobile, and virtual environments.

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- **Synthetic Monitoring**
  - No user activity
  - No device metrics

- **Network-Based Packet Capture**
  - No user activity
  - No device metrics

- **JavaScript Injection**
  - No user activity
  - TCP packets for the activity, no device metrics

- **Device Monitoring**
  - No user activity
  - Device resource metrics, not correlated to user activity

- **Agent On End User Device**
  - Time for transaction content to render on user’s screen, compared to baselines
  - Device metrics correlated to user activity
ENTERPRISES USE ATERNITY SIDE BY SIDE WITH TRADITIONAL APM PRODUCTS TO DRIVE BUSINESS RESULTS ACROSS THE FULL PORTFOLIO OF ENTERPRISE APPLICATIONS

Enterprises use Aternity to ensure quality of service for the full portfolio of business critical applications delivered over mobile, web, virtual, cloud, or physical environments, side by side with traditional APM products. Aternity’s unique approach to End User Experience Management complements traditional APM products that address other dimensions of APM, such as application topology discovery, application component deep dive, and IT Operations Analytics (ITOA) for certain classes of applications like web and mobile. Together, Aternity and traditional APM products deliver extensive benefits to enterprise application developers, IT Ops, and the line of business.

IT Ops Expands Support to the Entire App Portfolio

**IT Ops** leverages End User Experience Management of workforce applications such as productivity applications, public-cloud based applications, Thick Client applications, and applications delivered via Citrix and other virtual desktop technologies, to extend their service assurance capabilities beyond custom-developed, consumer-facing web, and mobile applications to the complete enterprise portfolio.

The Line of Business Gains Insight into Workforce Productivity

**The line of business** gains complete insight into the impact of the performance of the full enterprise application portfolio on the productivity of their tech-dependent workforce, in addition to the impact of the performance of consumer-facing web applications on revenue and customer satisfaction. Aternity’s expanded view of the enterprise end user is what enables enterprises to measure, manage, and improve workforce productivity.

- Rather than the anonymous consumer executing transactions on a web application, the enterprise end user has a meaningful identity consisting of not just a name, but a role, department, and office location within the organization.

- Rather than the individual, ad-hoc transactions executed by consumers, the enterprise end user conducts a range of business activities throughout the day, on multiple devices - physical, virtual, and mobile — from a variety of locations.

- Rather than the simple transactions which consumers execute on web applications, the applications used by the workforce may be part of a complex user workflow, consisting of a sequence of business activities, often spanning multiple applications.
Empowered by these capabilities, the enterprise line of business can address the following key use cases.

- **Determining whether or not SLAs are being met**, by analyzing business activity performance by geography, department, and device type
- **Validating expected gains in productivity** by comparing business activities over time, by department, and across mobile and wired devices
- Verifying application performance is maintained after migrating to a centralized virtual infrastructure, by **comparing performance** on virtual and physical devices
- **Holding cloud providers and outsourcers accountable** to SLA targets, by measuring End User Experience across geographies and business locations
- **Cost justifying the investment** to upgrade to the data center or desktops, by reporting the financial impact of lost productivity
CONCLUSION

**Aternity — Comprehensive End User Experience Monitoring Optimizes Productivity of the Tech-dependent Workforce**

As enterprises develop and roll out ever more applications to drive their businesses, IT Ops must keep pace with the complexity of assuring their reliability and developing insights into the impact of application performance on the business. The line of business needs assurance that strategic initiatives like mobility, cloud, and virtualization deliver the expected benefits to the business. Only Aternity, with its comprehensive approach to End User Experience Management across any application delivered on any device, enables IT Ops and the line of business to measure, manage, and improve workforce productivity.

**Implement as SaaS or On-premise**

Aternity provides a SaaS or on-premise platform for ensuring the reliability of any business-critical application running on mobile, virtual, and physical devices. Request a free product evaluation: [www.aternity.com/products/free-trial/](http://www.aternity.com/products/free-trial/)

**About Aternity**

For nine years, Aternity has helped enterprises see the entire workforce experience on any application running on any device, providing a user-centric vantage point that closes the visibility gap existing with network- and server-centric application performance management tools. By effectively transforming every device — physical, virtual, and mobile — into a self-monitoring platform that is user experience aware, enterprises are empowered with user-centric, proactive IT management capabilities that dramatically reduce business disruptions and increase workforce productivity.