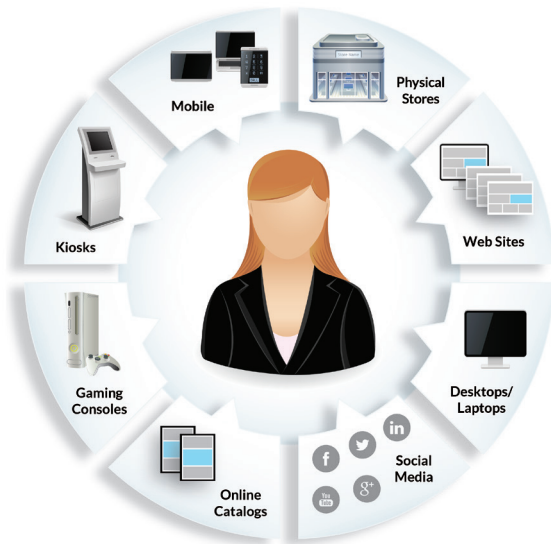


Optimizing Omnichannel Retail through **End User Experience Management**

Strategies & Real-World Case Studies For
Driving Excellent End User Experience with
Aternity Workforce APM

White Paper

OMNI-CHANNEL RETAILING REQUIRES A SEAMLESS CUSTOMER EXPERIENCE THROUGHOUT THE ENTIRE BUYING CYCLE



Omni-channel retailing seeks to seamlessly integrate all available shopping channels, from catalogs, TV, radio, and brick and mortar stores to contact centers, the internet, mobile, and social media. This integration supports customers as they move through the buying cycle, from discovery to trial, purchase, pick-up, and, in some cases, returns. The idea isn't new of course. Omni-channel retailing got its start years ago, as consumers became comfortable with using smartphones and tablets to research and purchase products.

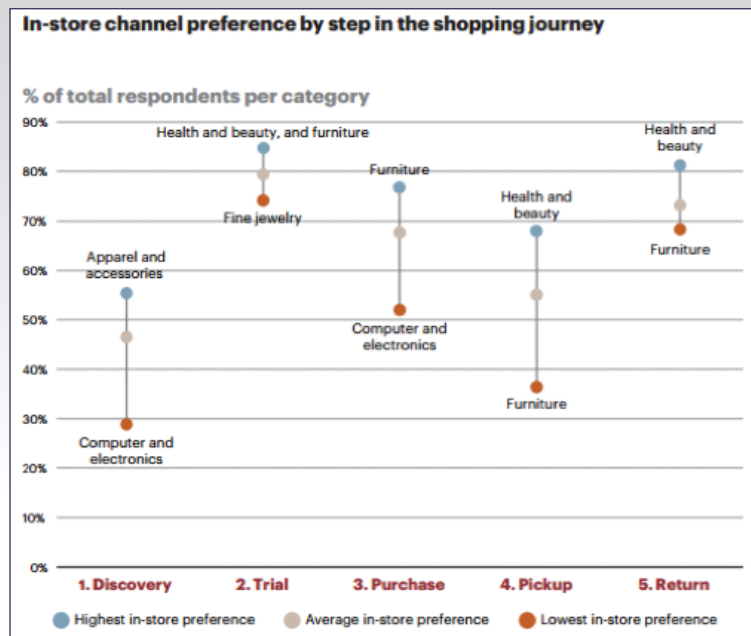
Of the phases of the buying cycle, purchasing gets the most attention, even though it is just one aspect. 2014 holiday shopping results show that customers rely on brick and mortar retail stores for the majority of their holiday shopping, even as on-line purchases continue to grow. As digital measurement and analytics firm [comScore](#) reported, e-Commerce retail set records in

2014 for both Thanksgiving Day (\$1.01B) and Black Friday (\$1.51B), up 32% and 26%, respectively, from 2013 levels. Cyber-Monday's on-line sales were even higher— \$2.04B, up 17% from 2013. Total on-line sales for the period between Thanksgiving and Cyber-Monday were \$6.56B, up 24% from 2013.

As strong as these e-Commerce results are, they are dwarfed by the total shopping numbers for the same period. According to the [National Retail Federation](#), total spending for the 2014 holiday weekend was \$50.9B. In-store shopping still makes up 87% of holiday purchases.

In omni-channel retailing, what counts is providing a seamless experience to the customer as they engage with various media channels throughout the buying cycle.

The breakdown between purchases made in stores vs. on-line is less relevant in an omni-channel retailing world. As A.T. Kearney reports in its [Omni-channel Shopping Preferences study](#), retailers recognize the difference between where value is captured (where the purchase is made) and where value is created (where brand building and awareness educate customers). Research and purchasing go together, and in the omni-channel retailing world, customers can use any channel for either. What counts is providing a seamless experience to the customer as they engage with various media channels throughout the buying cycle.



NOTE: For survey question, "Do you prefer to [INSERT STAGE] [INSERT CATEGORY] online or in a physical store?" n=2,504 respondents and r=8,518 journeys

Source: [A.T. Kearney](#), Omni-channel Shopping Preferences study, 2014

The importance of physical stores varies throughout the buying cycle, depending on the product category

A SEAMLESS CUSTOMER SHOPPING EXPERIENCE REQUIRES ENSURING END USER EXPERIENCE ACROSS MOBILE, VIRTUAL, AND PHYSICAL

Just as the customer is at the center of omni-channel retailing, the end user must be at the center of the performance monitoring strategy.

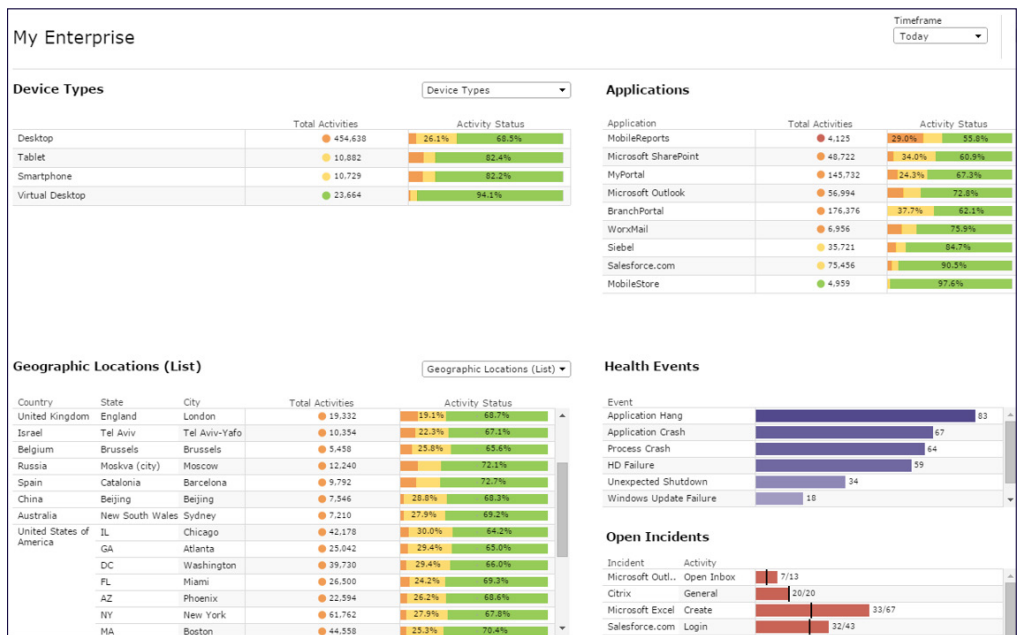
To facilitate this type of seamless customer experience, IT must take a user-centric approach to end user experience management. Just as the customer is at the center of omni-channel retailing, the end user must be at the center of the performance monitoring strategy. This requires the ability to ensure excellent end user experience for all of the applications and any of the devices on which a customer relies throughout the buying cycle. Web and mobile are just a start. For contact center staff to deliver excellent customer service, the apps and devices on which they rely must deliver excellent end user experience. End user experience monitoring must also extend to the Point of Sale (POS) applications at kiosks and at registers in the stores.



ATERNITY ENABLES RETAIL IT TO DELIVER A SEAMLESS OMNI-CHANNEL CUSTOMER EXPERIENCE

By effectively transforming every device—mobile, virtual, or physical — into a self-monitoring platform that is user experience aware, retail IT guarantees an excellent omni-channel shopping experience with user-centric, proactive IT management capabilities that dramatically reduce business disruptions and increase staff productivity.

Leading retailers use Aternity Workforce APM to assure the reliability and quality of the entire range of applications relied upon customers and retail staff across any shopping channel. Aternity Workforce APM monitors any application on any physical, virtual, or mobile 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—mobile, virtual, or physical — into a self-monitoring platform that is user experience aware, retail IT guarantees an excellent omni-channel shopping experience with user-centric, proactive IT management capabilities that dramatically reduce business disruptions and increase staff productivity



Aternity provides an enterprise-wide view of end user experience across all applications, delivered on mobile, virtual, and physical devices

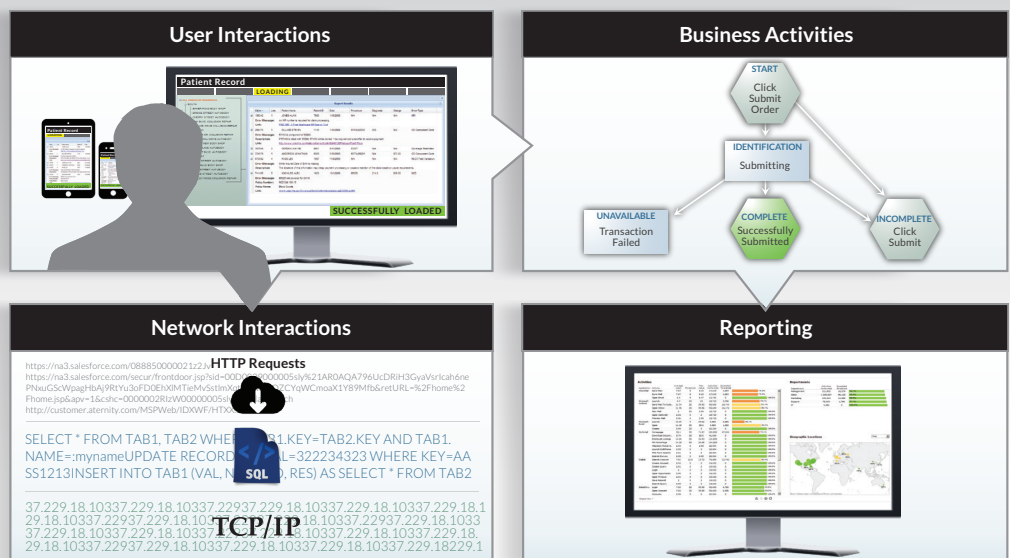
BUSINESS ACTIVITY ANALYTICS ACROSS THE BUYING CYCLE – BEYOND SIMPLE TRANSACTION MONITORING

Aternity enables retail IT to define user interactions with applications in the context of a business workflow, to measure, manage, and improve workforce productivity.

As discussed above, omni-channel retailing is not just about the purchase. It's about providing a seamless experience across all of the business activities that span the buying cycle. Therefore, IT needs to extend end user experience management beyond basic transactions like adding products to the shopping cart and checking out. Applications must be instrumented to capture other activities that the business deems relevant. For example, gaps in the pricing system are indicated by "item not found" when a product is scanned. Problems in the inventory management system are shown by "product not in stock" after an inventory query.

At leading omni-channel retailers, IT and the business collaborate to define the relevant user interactions with applications that support customers throughout the purchase cycle. POS, CRM, and inventory management applications may be part of a single step activity, such as “look up customer account,” or part of a more complex workflow, consisting of a sequence of activities, such as “process a return.”

Unlike APM products which require tagging to instrument applications, or that primarily report application diagnostic data like SQL and code level execution times, URL response and page load times, or HTTP and TCP errors, Aternity enables retail IT to define user interactions with applications in the context of a business workflow, to measure, manage, and improve workforce productivity. Monitoring and reporting on business activities, not just application diagnostic data, will indicate the success of an application enhancing the customer experience throughout the buying cycle.



Retail IT can define user interactions with applications in the context of a business workflow

ENSURING EXCELLENT END USER EXPERIENCE ON MOBILE, VIRTUAL, AND PHYSICAL — THREE REAL WORLD CASE STUDIES

Some of the world's largest retailers rely on Aternity to ensure excellent end user experience, for their customers and for their workforce, across all of the devices involved in omni-channel retail. The following case studies illustrate the advantages of Aternity Workforce APM in mobile, virtual, and physical environments.

1. Mobile End User Experience Management Enables New Retail Experiences

As the comScore and A.T. Kearney numbers show, in store customer experience remains important, even as consumers rely on other channels throughout the buying cycle. As retailers adopt mobile as a key enabler of their business strategy, they have recognized the need to monitor mobile apps to ensure customer satisfaction and workforce productivity. Mobile APM (mAPM) vendors have responded accordingly, with products that provide mobile app developers with capabilities like crash analytics, app error reporting, service performance metrics, and data consumption tracking.

As important as these mAPM capabilities are, they primarily solve problems for consumer-facing apps, because they lack visibility into important aspects of the enterprise end user – their identity, role, and business function, the full range of apps and devices they use, and the business activities for which employees are responsible.

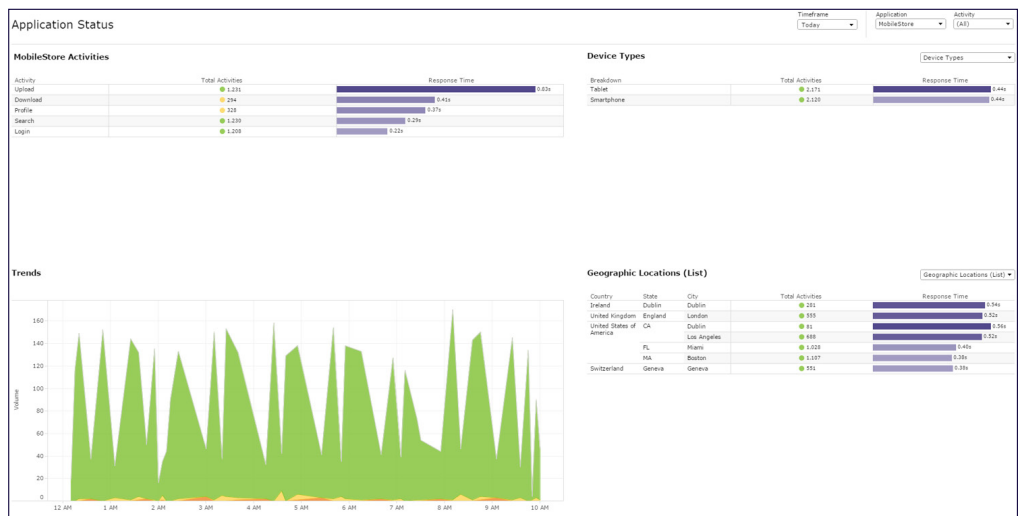
Innovative retailers, from AT&T to Tesla, are leveraging mobile in their stores to emulate the "Apple Store" shopping experience. For retailers like these, IT must ensure excellent mobile end user experience for the workforce using tablets and smartphones to interact with customers. Workforce mobile apps, such as POS and CRM, require capabilities beyond those which existing mAPM products provide to app developers. For IT Ops to prioritize their response to an incident, they need to understand the business impact, the functional organization and business locations of the impacted users, and whether desktop users are also impacted.



Aternity mAPM for Enterprise Apps picks up where existing mAPM vendors leave off by addressing the full range of mAPM use cases for developers of mobile enterprise apps, IT Ops who support them, and the line of business who rely on them to grow and transform the business.

For the line of business to determine whether or not mobile is improving workforce productivity, they need capabilities more meaningful than crash analysis, stack trace, breadcrumbs, and handled exceptions. They need metrics and analysis in terms that are relevant to the business, such as the length of time to look up a customer, process a return, or the number of orders executed, or not completed, by employees in a retail store

Aternity mAPM for Enterprise Apps picks up where existing mAPM vendors leave off by addressing the full range of mAPM use cases for developers of mobile enterprise apps, IT Ops who support them, and the line of business who rely on them to grow and transform the business.



Verify excellent end user experience of critical business activities, by device type or geographic locations

One of Aternity's customers was migrating their retail store POS app from desktops to tablets, with the goals of personalizing service, reducing wait-time, and improving customer satisfaction. They needed to verify excellent end user experience of the critical business activities performed on the POS app in order to justify a wider tablet roll-out beyond a modest number of trial stores. They used Aternity to verify the quality of service of the POS app, to optimize device and network settings, and to properly locate their mobile hotspots to deliver adequate signal strength throughout the stores.

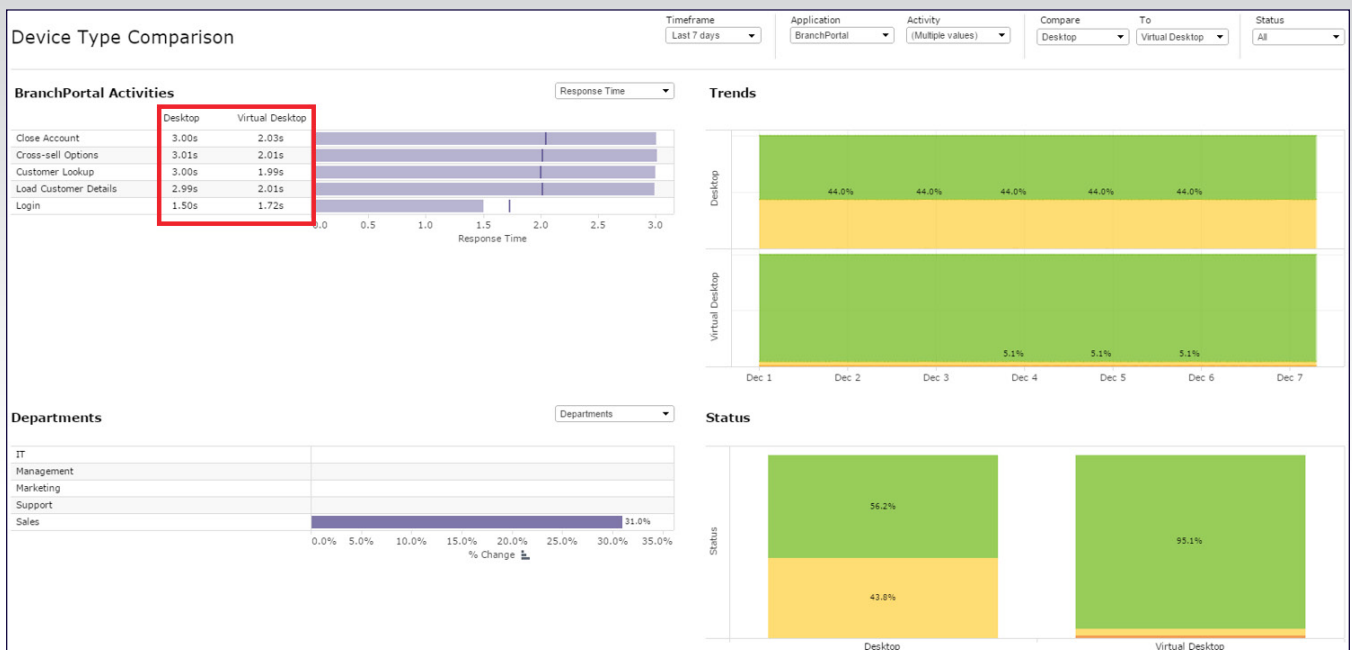
By monitoring the performance of any business transaction within any packaged or custom application, and correlating it with the key performance indicators of the underlying desktop virtualization, Aternity Virtual Desktop Monitoring and XenApp Monitoring empower retailers to achieve successful VDI outcomes.

2. Virtualized Apps Must Deliver Excellent Quality of Service to Globally Dispersed Contact Center Staff

Retailers with globally dispersed contact center staff frequently rely on VDI and virtualized apps to reduce operational costs, centralize control, and improve flexibility. Running these apps centrally in a virtualized environment enables IT to efficiently provide secure access to seasonal contact center staff who augment the regular workforce in order to handle the holiday load.

For a virtualization project to be successful, IT must ensure that applications run as well or better on virtual desktops as they do on physical machines. Verifying the quality of service of applications running in virtualized environments is challenging, since virtualization disrupts the traditional relationship between applications, physical hardware, operating systems, and presentation layers.

By monitoring the performance of any business transaction within any packaged or custom application, and correlating it with the key performance indicators of the underlying desktop virtualization, [Aternity Virtual Desktop Monitoring](#) and [Citrix XenApp Monitoring](#) empower retailers to achieve successful VDI outcomes.



Aternity enables a side by side comparison of critical business activities run on physical and virtual devices

A global operator of mid to upscale department stores identified their data mart as the source of slow response for the "Place Order" business activity in their POS app, which ran on a centralized virtual infrastructure. Using Aternity, IT was able to gain visibility into all tiers of the virtual infrastructure and resolve the problem in time to support a ten-fold increase in orders during the holiday shopping season.

Aternity Desktop Monitoring inventories the hardware and software of your POS devices, including pin pad, printer, bill and coin dispenser, and scanner. Aternity also monitors the key operating system and device health metrics that impact application performance and workforce productivity.

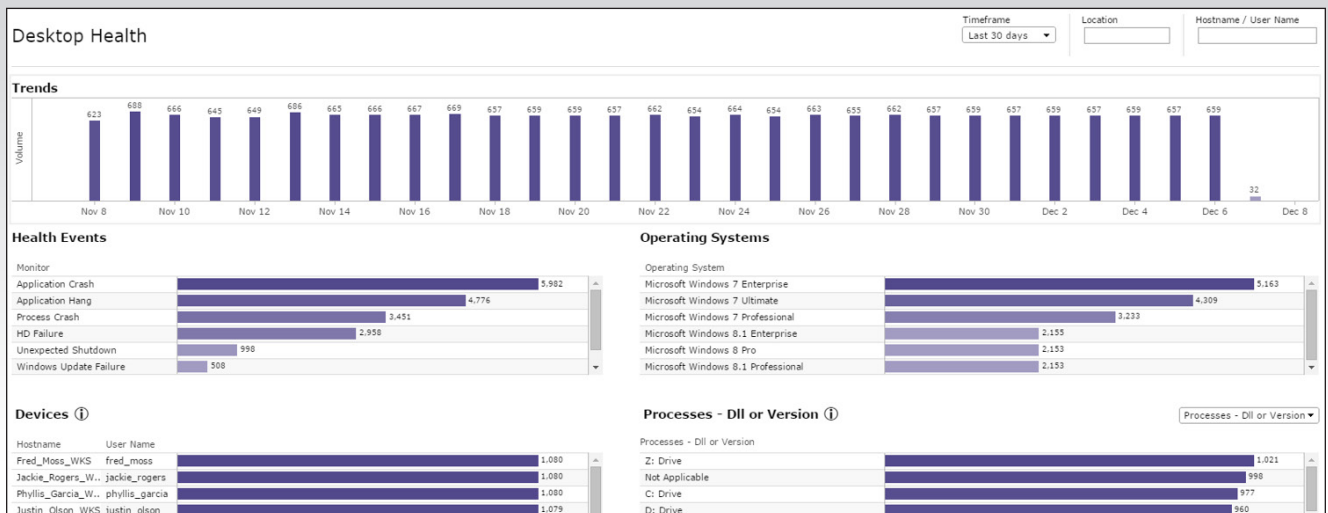
3. A Check-Up at Check-Out — Verifying the Health of Physical POS and Register Devices

Imagine this scenario. It's Black Friday, the busiest shopping day of the year, and you're the manager of a consumer electronics store. Lines of shoppers with overloaded carts snake up and down the aisles, as your cashiers speedily ring them up. Sounds good so far, right? Well, what happens if one cashier's register "freezes up" and needs to be re-booted? Or, the inventory system comes back with "item not found" when a product is scanned? What if these problems impact more than one cashier? Or, multiple cashiers in multiple stores? The happy holiday shopping scene can quickly turn into a nightmare.

To avoid problems like this, IT must maintain close watch on the health of the physical devices on which your cashiers rely. The same problems that can impact desktop performance can slow down your cashiers and negatively impact customer service. Many retailers lack adequate visibility into the performance of their POS and register devices.

[Aternity Desktop Monitoring](#) inventories the hardware and software of your POS devices, including pin pad, printer, bill and coin dispenser, and scanner. Aternity also monitors the key operating system and device health metrics that impact application performance and workforce productivity. These include:

- Event log monitoring such as hard drive errors and unexpected shutdowns
- Process monitoring including hung processes
- Application crashes and Blue Screens of Death
- Network read and write monitoring
- Boot and logon profiling
- Real-time application profiling



Aternity monitors the key operating system and device health metrics that impact application performance and workforce productivity

A global retailer used Aternity to avoid the “Black Friday” problem scenario just described. Prior to the peak holiday shopping period, they used Aternity Workforce APM to monitor POS operation throughout their network of stores to identify POS device, application, and workforce training issues that could lead to excessive checkout lines and poor customer satisfaction. With Aternity, they found ten times the expected volume of “item not found” issues when items were scanned, illuminating problems in their supply chain management and inventory processes. They also identified that 10% of their POS registers experience five times the average number of unexpected shutdowns, which could impact customer wait time and the productivity of POS check-out staff.



CONCLUSION

Aternity Workforce APM – Unified End User Experience Management to Support Seamless Customer Experience

These examples show how Aternity Workforce APM support omni-channel retailers as they provide a seamless customer buying experience. By providing unified End User Experience Management for any application, delivered on any device— mobile, virtual, or physical— Aternity Workforce APM helps leading retailers proactively assure excellent end user experience, which enables their staff to provide excellent customer service. After all, that is what drives the business, in any channel. If you're interested in learning more, [register for a 30 day evaluation](#).

Implement as SaaS or On-premise

Aternity Workforce APM 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/

Zensar End User Experience Management Service

Zensar understands that end users want to work in the most efficient way possible. An anywhere, anytime and any device work culture is redefining how the end user works and connects to enterprise infrastructure. This paradigm shift is forcing enterprises to view IT infrastructure availability through end user's real time experience. While traditional monitoring services enable enterprises to see availability of infrastructure in the data center, Zensar's End User Experience Management services enable them to manage end user experience through the eyes of their end users by providing a 360 degree view of IT service availability, usage and satisfaction on any device at any time. Zensar provides a full range of 24x7 monitoring, analytics and end to end support solutions to enable enterprises to transform user experience on any device any application from any location. This unique solution offer enterprises proactive monitoring and provides in depth analytics to identify critical issues and proactively communicate them to the IT support team, business stakeholders and senior management. Zensar's EUEM solution combined with data center monitoring services bridge the visibility gap between traditional infrastructure monitoring in the data center and provides visibility of both end user and backend IT infrastructure. Managed EUEM Services enable enterprises to maximize their Aternity platform as well as access to industry best practices for monitoring and analytics and strong integration capabilities with data center and application monitoring technologies. For more information please call (508) 621-4508 or visit our www.zensar.com.

ABOUT ATERNITY & ZENSAR

Aternity monitors any application on any physical, virtual, or mobile 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. Visit www.aternity.com to register for a free product evaluation today.

Zensar's Infrastructure Management services enable leading companies worldwide to optimize, secure, manage and support their mission-critical infrastructure. Zensar partners with clients to align IT programs and goals with enterprise strategy to deliver solutions that drive business process and improve the availability, reliability and performance of data center, end user computing, security and compliance infrastructure. The company has industry expertise that spans Manufacturing, Retail, Insurance, Healthcare, Utilities, and Banking Financial Services. An RPG Group company, Zensar has 8000+ employees with sales and operations presence across US, UK, Europe, Middle East, South Africa, Singapore and Australia. For more information visit www.zensar.com.





We conceptualize, build, and manage digital products through experience design, data engineering, and advanced analytics for over 200 leading companies. Our solutions leverage industry-leading platforms, and help clients be competitive, agile, and disruptive as they navigate transformational changes with velocity.

With headquarters in Pune, India, our 10,000+ associates work across 33 locations, including San Jose, Seattle, Princeton, Cape Town, London, Singapore, and Mexico City.

For more information please contact: marketing@zensar.com | www.zensar.com