headspin | Red Hat Ecosystem Solutions Accelerator

Problem Definition and Impact

Amid the growing pace of digital transformation, buyers are increasingly shopping online and relying on services such as home delivery, curbside pickup, virtual consultations, and chatbots. For retailers to minimize churn and cart abandonment in this new digital era of complex ecosystems and high expectations, delivering seamless and personalized digital shopping experiences — from day one — is paramount.

Poor performers risk losing innovation, market opportunity, customers, and revenue. **75%** of online shoppers would abandon a retailer and shop elsewhere if their mobile website or application was buggy, slow, or prone to crashes, a cart abandonment trend that results in eCommerce brands losing nearly **$18 billion** in sales revenue a year.

Numerous technical factors impact a digital shopper's experience:

- Device resources (memory, battery, CPU)
- Cloud/CDN
- API calls
- 3rd-party SDKs
- Compatibility across a diversity of carriers, operating systems, and devices.

These factors, coupled with variable geographical locations or local factors such as network latency, make perfecting user experience exceedingly difficult. Conventional tools rely on simulations in lieu of real-world conditions and fall short of delivering the visibility required for organizations to pinpoint issues their apps face. To deliver quality customer experiences and drive revenue growth, retailers need a unified, proactive approach to testing and monitoring their user experiences.

DELIVER FLAWLESS DIGITAL SHOPPING EXPERIENCES TO CUSTOMERS ANYWHERE IN THE WORLD

HeadSpin's data science platform offers the global device infrastructure and quality of experience (QoE) insights retail enterprises need to deliver flawless digital experiences. With real devices in 100+ locations around the world and multiple deployment options, HeadSpin enables development, QA, product, and operations teams to collaboratively test, monitor, and analyze any product — whether it's the store mobile app or supply chain software — across devices, locations, and networks.

Global Device Infrastructure

HeadSpin's global device infrastructure consists of real devices in 100+ global locations running on real carrier and WiFi networks. Retailers can test their web or mobile applications on mobile phones, tablets, and media devices placed inside the HeadSpin Appliance — a highly-secure, RF-compliant, temperature-controlled, portable enclosure — that can be deployed on-premise, in-the-cloud, and on-the-go. For testing special audio and video use cases, such as voice assistants or camera apps, HeadSpin offers the Audio-Visual Platform, an appliance that lets you test and record the audio and video output of media devices and analyze the QoE with HeadSpin's AI-based video and audio analysis.

Automation

HeadSpin's powerful and flexible platform supports all testing frameworks (including native Appium and Selenium), custom dashboards, open APIs, and peer benchmarking services. Retailers can automate regression testing across app builds with automated smart alerts and seamless CI/CD integration.

In-Depth Performance Insights

Retailers can monitor and analyze their application's performance across the entire user journey with HeadSpin's performance optimization and user monitoring capabilities. Using 40+ Machine Learning models, the HeadSpin Platform continuously monitors applications for functional and performance issues, and provides AI-powered alerts for issues that arise and easily-actionable recommendations for fixing them.

BENEFITS

Functionality testing	Test the usability of your product to ensure limited interruptions that could affect revenue and supply-chain operations. You can even run multiple tests in parallel or schedule your tests
Regional testing	Meet regional eCommerce regulations and expectations with region-specific testing and analysis on real, SIM-enabled devices in 100+ locations around the world
Barcode/QR code scan testing	Ensure seamless transactions by scanning barcodes, QR codes, and other images from device cameras to test performance
Measure and monitor retail-specific KPIs	Pinpoint the root causes of issues affecting user retention with in-depth QoE and performance data across apps, networks, and devices — no SDK or code changes required
Digital channel assurance	Continuously monitor for and report common experience points, such as Search Execution Time and Time to Checkout, with custom-built dashboards to enhance in-app user engagement
Authentication testing	Mitigate fraud with detailed authentication testing for biometrics and automated scenarios for OTP and 2FA with HeadSpin's Biometrics SDK for Android and iOS apps
Validate PoS and NFC solutions	Increase the efficiency and reliability of your POS and NFC Solutions with interface testing on the device and hardware level (RFID, scanner, wearables)
Supply chain applications and prediction accuracy	Experience validation on in-store devices, such as Zebra handheld devices, and track stock inventory
Measure impact of 3rd-party services	Pinpoint root causes of client-side performance issues, from payment to inventory, pertaining to 3rd-party SDKs. Set smart alerts for critical issues as soon as problem code is introduced
Real-user scenarios	Test real load scenarios with multiple concurrent user sessions on various real, SIM-enabled devices around the world
Team collaboration	Globally-distributed teams can access the HeadSpin platform and devices 24/7 from anywhere around the world to increase collaboration and speed up development time

PROCESS AND TIMELINE

WEEK 1-2

We work with you to identify pain points and challenges and understand how you quantify your user experience-both in-store and while using the appliance-with KPIs relevant to your user journeys.

A customized demo and performance report can be provided.

WEEK 3-4

We offer a trial environment depending on your needs:

- Virtual Private Cloud, On-premise, or Multi-tenant Model on HeadSpin Cloud
- Implement a Proof of Concept (PoC), which starts after manually setting success criteria based on your objectives and establishing the amount of edge infrastructure needed to meet your goals

WEEK 5-6

To understand how the implementation impacted your challenges and goals, we conduct a detailed comparison and ensure you have collected all KPIs. We'll assist in configuring any additional modules you may have considered, fix any remaining issues, start deployment, and go live.

Once deployed, you'll be able to perform end-to-end testing, understand and analyze performance issues of your application, and validate end user QoE with your application.

CUSTOMER STORY

A leading, multi-channel eCommerce retailer in the US utilized HeadSpin to identify issues within its mobile application and improve the performance of its mobile channel. This retailer needed real-world performance data of their mobile application to understand how their application fared on various devices and carrier networks, but didn't have the means/tool that leveraged actual user conditions.

With HeadSpin, they company was able to run multiple tests of their application on real iOS, Android, and Zebra devices running on real networks. Regression testing was done using more than 3,000 test cases on multiple devices. Two-device setup was done to scan barcode/QR code as input to the app, and the HeadSpin Platform identified a number of performance and user experience issues on the back-end, front-end, and web view content of the app.

This retailer has enhanced its in-app user engagement and **improved user retention** by **39% on iOS** and **64% on Android** to further cement its position as one of the top department store chains in the US.

COMPANY INFO & CONTACT INFORMATION

ABOUT HEADSPIN

HeadSpin was founded to address the need for a global testing, performance monitoring, and QoE management platform to help organizations assure optimal digital experiences across mobile, web, audio, and video delivery channels.

The HeadSpin platform is an industry first, providing a powerful, easy-to-use solution that enables development, QA, product, and operations teams to accelerate release cycles, build for complex real-world user environments, and know whenever any component of the system degrades or breaks—whether at the code, device, or network layer—anywhere in the world.

Since inception, the platform's extensive on-prem and cloud-hosted global device infrastructure has been expanded with machine learning-driven performance and quality of experience analytics to proactively test and monitor mobile, web, audio and video applications in real-time.

Solution powered by Red Hat OpenShift

Red Hat OpenShift is the leading enterprise Kubernetes platform; a security-focused, consistent foundation to deliver applications anywhere, in the cloud or in the datacenter. With Red Hat OpenShift, innovators can focus on what matters, stay competitive, and outpace continually rising customer expectations. OpenShift benefits applications with container-based portability and scalability.

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