CarRentals.com Drives Operational Excellence Through Continuous Measurement Using New Relic

At its core, CarRentals.com is a technology brand within the Expedia Group. And it definitely takes a considerable amount of technological prowess to deliver the services that this online car rental booking company promises to customers and partners, features such as 60-second bookings and constantly updated inventory and pricing.

To provide this consistently high level of service and innovation, CarRentals.com relies on Amazon Web Services (AWS) to deliver its modernized cloud-based IT infrastructure, and on New Relic monitoring to achieve the full-stack visibility it needs to support scalable, reliable application delivery on top of that infrastructure.

Cultivating a culture of measurement

One way that CarRentals.com's IT organization has helped the company succeed in its goals has been by making operational excellence a part of its charter. Explains Craig Vandeputte, CarRentals.com's director of DevOps, "To achieve operational excellence, we measure everything. Only in that way can we manage and improve everything."

This kind of measurement is necessary to answer important questions about the effectiveness of its DevOps approach: Should there be a problem with an application, is the company the first to know about an issue rather than being alerted to it by customers? How quick is the team to fix those problems, and how fast can CarRentals.com get value to its customers?

And while measuring everything is one thing, realizing the full value of all that measurement is quite another. With disparate monitoring tools, the organization lacked a unified way to visualize the performance of all its applications and infrastructure, limiting the IT team at CarRentals.com in extracting the full value of its software.

Like the Expedia Group overall, CarRentals.com has grown through acquisition. As a result, the company today supports two brands in addition to the flagship CarRentals.com: CarDelMar in Germany and the Netherlands, and Autoescape in France. Until recently, each brand was running a different monitoring solution.

CarRentals.com
an expedia group company

INDUSTRY
Travel

LOCATION
Bellevue, Wash.

USE CASE
System-wide monitoring of application and infrastructure performance, with analysis of long- and short-term trends

PRODUCTS USED
New Relic APM, New Relic Infrastructure, New Relic Synthetics, New Relic Browser, New Relic Insights

WHY NEW RELIC
Provides full-stack monitoring combined with powerful UI, visualization, and integration capabilities

HIGHLIGHTS
- Achieved major savings by lowering costs associated with managing multiple monitoring tools
- Freed up three to four full-time employees to focus on strategic tasks
- Improved customer satisfaction and minimized revenue lost through customer abandonment

Each brand also had its own user interface (UI) supported by a common PHP-based monolithic backend. Recently, however, CarRentals.com started breaking up that backend into a set of microservices and moving those separate UIs to a common codebase. As the company began to consolidate its codebases, it also began looking to consolidate its monitoring tools with a solution that could be used across all three brands, and hook into Expedia Group's Event Management Framework for incident management.

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>
> **Garrett Vargas**
> CTO of CarRentals.com

A single tool for system-wide monitoring

CarRentals.com found its solution in the New Relic platform. With CarDelMar already employing New Relic, the CarRentals.com IT team took a closer look at the monitoring solution and realized it provided precisely what the company needed. Says CarRentals.com brand CTO Garrett Vargas, "When we considered New Relic's ability to surface problems not just at the UI layer but throughout our entire technology stack—as well as its tight integration with many of our development tools—it didn't take long for us to agree on it as our one-stack solution."

Vandeputte joined the CarRentals.com team shortly after New Relic had been deployed, and he was pleasantly surprised by what he found. "In previous roles I've used a variety of home-grown, open-source solutions for monitoring," he says. "When I was introduced to New Relic, I thought, holy cow, you have everything you need in one solution: synthetics to simulate user flows and behaviors, a beautiful UI, visualization mechanisms that are far more mature than anything I'd seen, and more."

The key to DevOps success

By transitioning to microservices and delivering its IT infrastructure using AWS, CarRentals.com had already accelerated application development and gained the ability to scale globally. The addition of New Relic across all its brands has enabled CarRentals.com to raise the bar even higher.

For the DevOps team, this has meant working with engineers from the company's other three IT teams to identify key performance indicators (such as transactions per second, error rate, error count, success rate, and latencies) for each feature or update they're working on.

"Once the team has established what to measure and when to send out alerts, New Relic does the rest," says Vandeputte. "As soon as an incident occurs—or an established threshold has been violated—an alert is sent to Expedia Group's Event Management Framework, which escalates it to the correct team."

New Relic.

Not surprisingly, this is invaluable to the DevOps team, which is able to deploy more quickly—and more confidently—as a result.

Case in point: When a code change to the "Expedia Suggests Service" (which tries to resolve a user's destination as they are typing it in) unintentionally transformed an optional field into a required one on the CarRentals.com site, New Relic sent out an alert, and within 20 minutes the Hamburg team had pushed out two releases and fixed the problem.

It's this kind of capability that helps CarRentals.com address those key performance questions mentioned earlier. In this instance, the company was the first to know there was an issue before its customers ever discovered it. Not only was the team able to fix the problem quickly, they now have the confidence to experiment with new features more often because they know they can spot and resolve issues immediately should they occur.

Instant insight into wide-ranging performance data

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> Director of Devops, CarRentals.com

While CTO Vargas appreciates the enormous value of this type of quick issue identification and resolution, what he likes best about having a unified monitoring platform is the New Relic Insights-created dashboards that enable him to analyze long- and short-term trends to his heart's content.

"Whether I want to look at site speed, purchase success rates, or any other metric we've deemed important, I can look at a dashboard that shows me day-by-day or hour-by-hour if performance is improving or degrading," Vargas says. "This is hugely helpful."

Easing management, lowering costs, and delighting customers

By deploying a suite of New Relic SaaS-based monitoring tools (including New Relic APM, New Relic Infrastructure, New Relic Synthetics, New Relic Browser, and New Relic Insights), CarRentals.com has not only gained a system-wide view of application and infrastructure performance, it has also achieved significant savings by lowering management costs. Vandeputte estimates that New Relic has enabled CarRentals.com to free up three to four full-time employees to focus on more strategic tasks.

"In the past, I've seen teams spend 25% of their time either maintaining our monitoring solutions or developing new tools to monitor different areas," Vandeputte says. "That work alone involved myriad subject matter experts working on a variety of platforms, which was hugely distracting and very expensive. With New Relic's SaaS approach, we're able to offload all of that burden."

New Relic.

And it's not just the IT team at CarRentals.com that's benefiting from New Relic monitoring. Explains Vargas, "Even though we're still in the early stages of integrating our New Relic dashboards into the Expedia Group network operations center, we've spent a considerable amount of time going over how we can better visualize the state of health across all of Expedia Group using New Relic. So far, people are very excited about what they're seeing. New Relic dashboards are a welcome addition to our monitoring wall because they're easier to read, everything is on one page, and they're just a lot more mature than what is currently being used."

Most important, CarRentals.com is now able to constantly improve the digital customer experience. Says Vargas, "When customers aren't able to retrieve or complete a booking, for example, we hear about it. So the faster we're able to resolve an incident—or avoid an incident completely—the better feedback we get from customers."

Thus, with incidents being resolved significantly faster due to increased application health visibility, and error rates on the decline, customers are happier and the revenue lost through customer abandonment has dropped sharply.

"With New Relic, we're now able to dig deeper, so that when an incident does occur, we can usually pinpoint something that's either not being measured or that needs better measurement, or identify new dependencies," says Vargas. "As a result, we're able to achieve our goal of being first to know of a problem, quick to fix it, and always improving—and that adds up to operational excellence."