

 eBook

Add to Basket

How One Simple Purchase
Led to Four Unique Stories
of E-Commerce Success



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Introduction

On a spring day in May 1984, Jane Snowball, a 72-year-old grandmother living in Gateshead, England, went about her typical weekly errands, buying groceries from her local Tesco supermarket. Unlike the rest of the world, however, Mrs. Snowball didn't travel to the store and make the purchase in person; she did it from home using a modified domestic television connected by a phone line to the Tesco store. This experiment—conducted in partnership between the city's Social Services department, Tesco and Rediffusion Computers—was the first recorded online shopping transaction, and it led the way for companies like Amazon and eBay that spearheaded the industry a decade later.

Fast-forward to today, and you'll find an estimated 162,884 e-commerce companies¹ selling goods online every day. In 2014, global e-commerce sales eclipsed \$1.3 trillion, with predictions for that number to surpass \$22 trillion.² The European e-commerce market is expected to grow 18.4% in 2015, with the Centre for Retail Research predicting web shoppers in Europe will spend €185.39 billion by the end of 2015.³

With numbers like these, it's safe to say the e-commerce industry is alive and flourishing. But that's not to say the business doesn't come with its challenges. Performance bottlenecks, unplanned outages, and massive traffic spikes can all cause downtime, not to mention the

additional fallout that ensues: lengthy and expensive maintenance, faulty checkouts, poor user experiences, time lost working on strategic objectives. And it's not just the smaller companies that are suffering; these issues are impacting the e-commerce giants as well.

In fact, a March 2013 report found that the world's top e-commerce sites to be 22% slower than they were the previous year.⁴ To make matters worse, the three most widely used browsers—Firefox, Chrome and Internet Explorer—all showed slower load times as well. In the face of all this, users are becoming increasingly impatient, with research suggesting that the average Internet user has a wait time threshold of three seconds or less.

In an industry where the name of the game is speed, the way you manage and monitor your e-commerce site can potentially make or break you. Some of the most common application management and monitoring challenges that e-commerce teams are facing include:

- **Lack of deep visibility.** Many e-commerce teams may feel they have sufficient visibility, but without a deep-rooted view into the health of their applications, they never reach their potential in terms of speed and responsiveness. This also means they lack valuable insights that can help remove performance bottlenecks and improve user experiences.

¹ <http://clients1.ibisworld.com/reports/us/industry/ata glance.aspx?entid=1930>

² <http://www.emarketer.com/Article/Retail-Sales-Worldwide-Will-Top-22-Trillion-This-Year/1011765>

³ <http://www.retailresearch.org/onlineretailing.php>

⁴ <http://www.webperformancetoday.com/2013/03/27/top-e-commerce-sites-are-slower-than-they-were-last-year/>



- **Disparate and disconnected tools.** You may have one tool that tells you the network is down. Another tool that tells you the site is slow. And yet another tool that tells you how your servers are doing. Having to manage and monitor all these separate tools can make performance monitoring much more time-consuming and inefficient than it needs to be.
- **Lack of foresight.** It's common for e-commerce teams to be stuck in constant reactive mode—often learning about an outage or problem through customers—as opposed to proactively fixing problems before they happen. This is because they're not getting a true understanding of site performance in real time, which in turn, limits their predictive analysis.
- **Limited deployment time.** This is likely true across all IT functions, and it makes it all the more difficult to purchase traditional on-premise solutions, which not only carry a hefty price tag, but are also prohibitive when it comes to staffing. Add to that the complexity and set-up time of traditional tools, and you've got an e-commerce team desperately looking for an alternative solution.

The good news is you don't need to have the budget of an Amazon or eBay to solve these common challenges. Software-as-a-Service (SaaS)-based software analytics tools can help make it possible for a company of nearly any size—and with almost any budget—to improve

application performance, and in turn, customer satisfaction. A software analytics platform can make it possible to monitor every detail of your e-commerce application—from the end user experience, through servers, down to the line of code—all through a single user interface. And because a SaaS-based platform is designed to provide added freedom, flexibility and control, the excessive costs and obstacles of traditional on-premise options can be significantly reduced.

Thousands of companies are using SaaS-based software analytics every day, from thetrainline.com and Boozt to Zalando and Skullcandy. That's because a software analytics platform gives them:

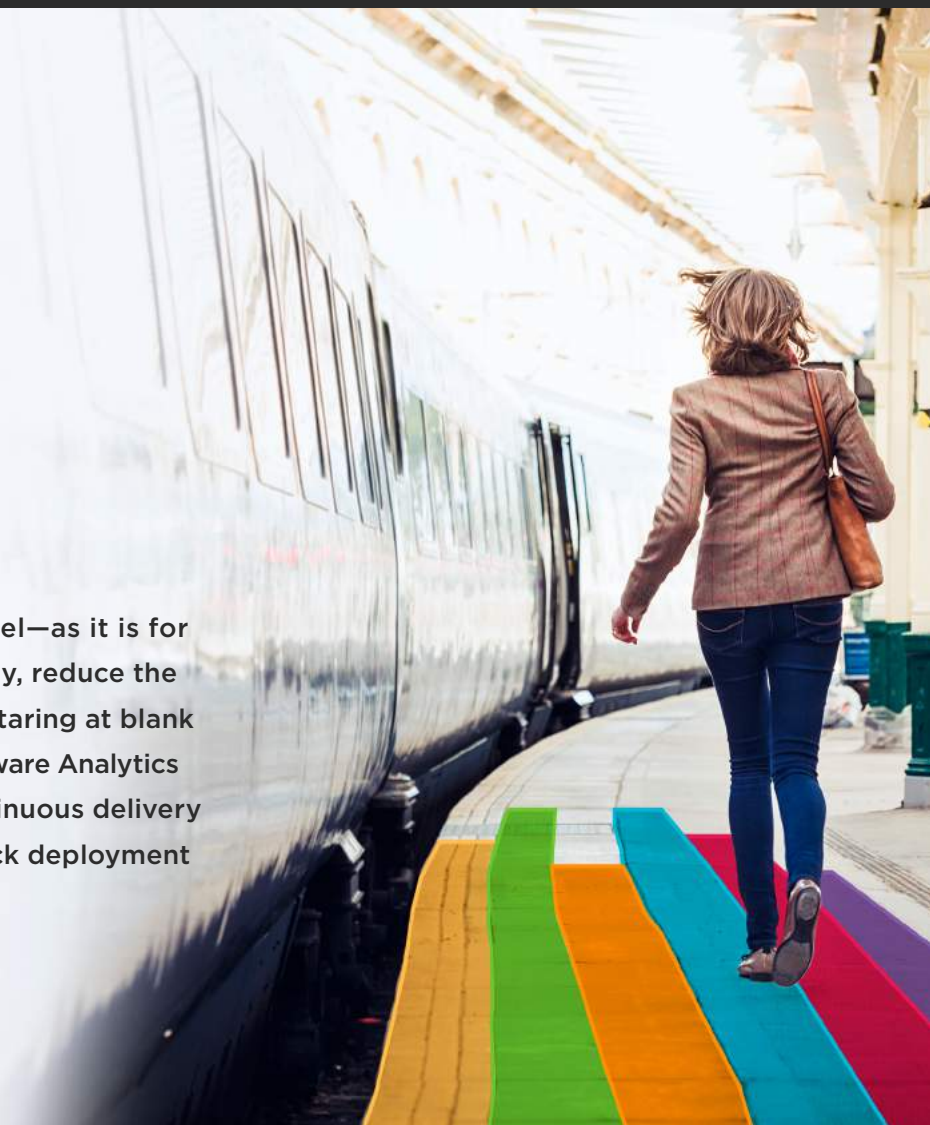
- Accelerated problem resolution
- Anytime, anywhere app management
- Enhanced user satisfaction
- Reduced infrastructure and maintenance costs

In this e-book, you'll learn how e-commerce companies of all shapes and sizes are tackling application performance challenges and staying ahead of the competition. Read on to explore four unique stories of e-commerce success that resulted from one simple purchase: a SaaS-based software analytics platform.

CHAPTER 1

A Data-Driven Approach to Problem Solving

When your goal is to be the best place for planning and purchasing rail travel—as it is for thetrainline.com—you need to be able to respond to customer feedback quickly, reduce the number of error pages those customers see, and make sure your users aren't staring at blank screens while they wait for applications to load. By deploying the New Relic Software Analytics Platform, the [trainline.com](http://thetrainline.com) was able to achieve those goals—employing a continuous delivery cycle and a performance monitoring solution that allowed the company to track deployment times and make more informed product decisions.

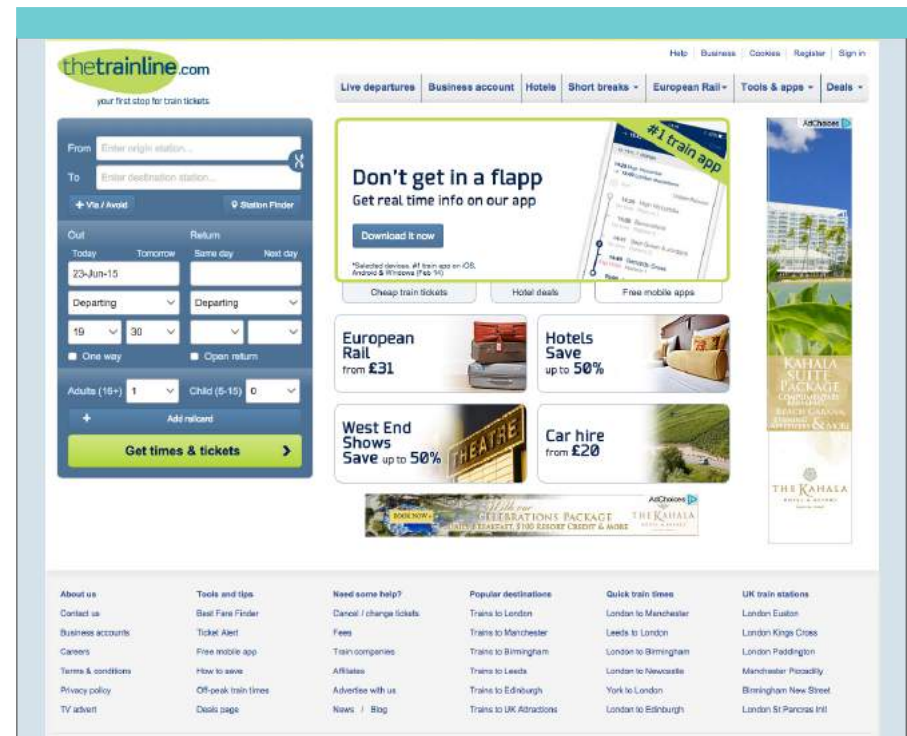


How thetrainline.com Accelerated Release Cycles and Slashed Error Rates by 95%

Established in 1997 with a mission of helping save money, time and hassle for rail passengers, thetrainline.com is now the largest online booking platform for train tickets in the UK. In 2014, the company's consumer website and mobile app received an average of more than 20 million visits per month, and in January 2015, thetrainline.com's mobile app ranked No. 1 in both the Travel and Transportation categories in iOS and Android stores.

To meet its goal of being the best place to plan and purchase rail travel online, thetrainline.com's e-commerce website must be fast and responsive—delivering a user experience that's continually improving and evolving based on customer feedback. To that end, the company hired Development Manager Darren Parsons in 2013 to lead the process of re-engineering its consumer website front end.

“We quickly realised that we needed to accelerate the feedback cycle in our release strategy and ship much more frequently”, says Parsons. “And to do that, we needed to implement continuous delivery”. This could only be effective, though, if Parsons and team were able to see the impact of their deployments on the user experience. In particular, they wanted a performance monitoring solution that would let them track deployment times and help them make more informed product decisions.



What Parsons and team did not want was a solution that required any capital expenditure. As one of the few SaaS APM tools on the market at the time, the New Relic platform quickly rose to the top. “We did a very quick installation of the platform”, says Parsons, “and within two to three hours, we were already seeing meaningful numbers coming back to us”.

It didn't take long for thetrainline.com Chief Technology Officer Mark Holt to take notice. "With New Relic, we were able to monitor end-user behaviour that tied all the way through server performance and down into individual calls", he says. "We could find the line of code that was causing a performance problem and fix it immediately. This was something we had never been able to do before".

Soon, the organisation was using New Relic for everything from application, server, browser and mobile monitoring to real-time business analysis with the New Relic Software Analytics Platform. "Now, we can actually see how responsive various aspects of the site are and what the conversion funnel looks like", says Parsons. "That in turn means we're prioritising our backlog based on data rather than supposition".

This data-driven approach to problem solving has resulted in some major wins for thetrainline.com—including a 95% reduction in customer-facing error pages within two months of New Relic's deployment and a significant improvement in the experience offered by the company's mobile app. Explains Holt, "Thanks to New Relic, we noticed that there was a misconfiguration in the mobile application stack. Once we tweaked that setting, the data transfer rate immediately dropped by 87%".

New Relic has also helped thetrainline.com achieve a more agile development cycle. "With the continuous delivery model facilitated by New Relic, we've been able to decrease release cycles from weeks to hours", say Parsons. "Rather than wait 12 weeks to release one small improvement, we can now roll out around 50 releases within the same time".

Mapping the Customer Journey

Mark Holt, thetrainline.com's chief technology officer, admits it: He's obsessed with tracking individual webpages so that he can see exactly where customers are dropping out—and then fix the problems. Real-time analytics platform New Relic Insights allows him to do just.

"From being able to track individual pages to creating funnels to show where customers are dropping out, there's a lot of great functionality in the Insights product", says Holt. "Every morning, the first thing I do is pick up my phone and check each site's overnight performance and review where we are in real time. Slightly embarrassingly, it's also the last thing I do at night. "

The end goal of all of this, of course, is to create a better experience for customers, and thetrainline.com has been able to deliver that in spades. "New Relic enables our developers to see and feel the pain of customers who are dealing with problems on our site", Holt says. "It connects our team to the people using our product, and that's incredibly powerful stuff".



Learn more about how thetrainline.com used the New Relic platform to improve its customers' experiences: <http://newrelic.com/case-studies/thetrainline>

CHAPTER 2

Better Insight for Better Customer Experiences

Boozt Fashion has been on a roll. With more than 30 million page-views per month at its online fashion store (Boozt.com), the e-retailer is one of the fastest growing e-commerce companies in Scandinavia. Great as this kind of explosive growth may be, it also presents problems—namely in testing and deploying the applications that need to be continuously rolled out to keep shoppers happy. Luckily for Boozt, it found a solution in New Relic. Today, it uses New Relic's SaaS-based software analytics platform to determine how every aspect of its operations are performing—and how that performance can be translated into a better experience for customers.



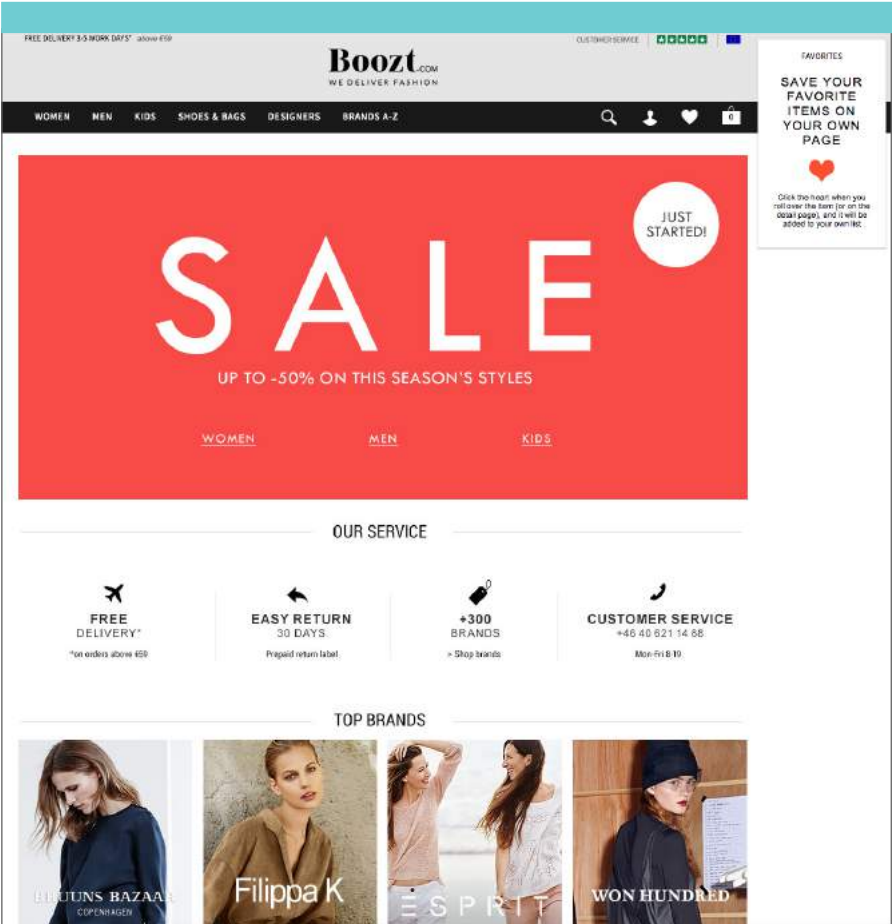
How Boozt Fashion Boosted E-Commerce Site Performance by 30%

Founded in 2009 and based in Malmö, Sweden, online retailer Boozt Fashion employs a unique business model that encompasses not only its own multi-brand online store (Boozt.com) but also the mono-brand online stores it operates in partnership with large fashion brands. Already one of the fastest growing e-commerce companies in the Scandinavian fashion sector, Boozt aims to become the No. 1 online fashion retailer in Scandinavia.

To achieve this goal, Boozt must deliver the best customer service, selection and price. And to do that, the company’s website and mobile apps team must constantly roll out new capabilities to improve customer experience. But with the site averaging 30 million page-views per month (and traffic volume constantly on the rise), it had become difficult to properly test and predict how the websites and mobile applications would perform live.

“We needed better insight into the actual customer experience, especially during peak events such as Black Friday and seasonal sales promotions”, says Boozt Web Development Manager Aurelijus Valeiša. “We also needed better visibility into our hybrid cloud environment. We knew that if we could gain an understanding of our websites’ performance during peak traffic volumes, we could make more efficient use of our public cloud resources”.

Boozt gained that insight by deploying a SaaS-based APM solution from New Relic. Today, the company uses the New Relic Software Analytics Platform for everything from analysing the customer



experience (using the reports in New Relic APM) to monitoring the performance of third-party services (through session traces) and testing advanced features (using New Relic Synthetics). Boozt is even able to evaluate the quality and performance of mobile apps from a third-party developer—despite a limited knowledge of that mobile environment—by taking advantage of New Relic Mobile.

The result of all of this insight has been a steadily improved customer experience. For instance, after Boozt used data gleaned from New Relic to re-factor the frontend of the listing page on its e-commerce website, performance improved by 30%. “New Relic gives us the data we need to make better decisions about how to achieve the best performance for our customers”, says Valeiša. “The speed of our website impacts both conversion rates and our Net Promoter Score, which improved after the refactoring”.

Boozt has also been able to boost productivity and cut costs by using New Relic to monitor its internal systems—immediately identifying bottlenecks in the custom, in-house warehouse system, for example. Explains Tobias Sjölin, principal project manager at Boozt Fashion, “With the help of New Relic, we began optimising the warehouse system one area at a time. By improving the processes for packing orders, we reduced the time from 1.5 seconds to 0.5 seconds. In all, we saved the equivalent of the cost and effort of one fulltime employee”.

The online retailer also used data from New Relic to determine that it could postpone an investment in new servers (without sacrificing performance)—saving not only the cost of the physical servers but also the extra complexity that comes with monitoring and managing them.

For Valeiša, the benefits of using a SaaS-based software analytics platform are clear: “Only New Relic can give us the level of visibility we need to continuously increase our site’s speed and improve the customer experience”.

Identifying the Impacts of Change

Boozt Fashion understands that every area of the business helps shape customer experience—and that to improve that experience, it must track them all. New Relic helps Boozt do just that. “With New Relic, we can see the immediate impact of new deployments on the performance and quality of the customer experience”, says Boozt Web Development Manager Aurelijus Valeiša. “Before, we had to check everything manually, which made it difficult to catch specific edge cases where only 1% or less of users might experience an issue”.

Not so today. Using the New Relic platform, Boozt monitors the performance and customer experience provided by its online storefronts, mobile apps and internal systems. As a result, it’s able to provide the continuously improved experience its customers demand.



Learn more about Boozt Fashion’s story:

<http://newrelic.com/case-studies/boozt>

CHAPTER 3

From Reactive to Proactive

For busy e-commerce sites, performance is everything. Error messages, slow load times and random site problems can lead to abandoned shopping baskets and disgruntled customers. For a company like Zalando—whose mandate is to delight and inspire shoppers—poor performance was simply not an option. That's why it turned to New Relic. Today, Zalando is employing the company's software analytics platform to provide the application and performance monitoring required to drive its business.



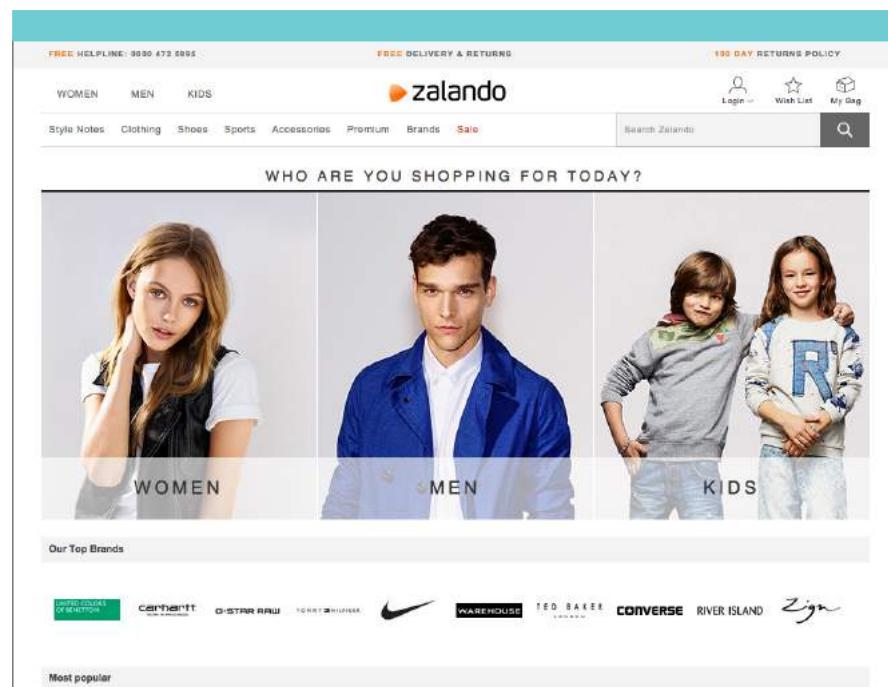
How Zalando Improved Application Performance and User Experiences

In 2008, two people in a shared apartment in Berlin's Torstrasse District launched the e-commerce site Zalando as a simple and convenient way to buy shoes online. They believed that an online shoe store could deliver something no brick-and-mortar retailer could—an absolutely up-to-the minute assortment of all the relevant brands and an almost unlimited selection of styles, colours and sizes. They were right.

Today, Zalando is a multinational e-commerce company that encompasses clothing, shoes, and a variety of other fashion and lifestyle products. And while its headquarters are still in Berlin, that team of two has grown into a staff of thousands and a tech team numbering more than 700 employees.

That tech team is a driving force in the company—making the technology decisions that keep Zalando innovating and maintaining the proprietary platform that drives everything from store operations to fulfilment and purchasing. With the company growing by leaps and bounds, and its technology platform keeping pace, the tech team knew they needed a better way to monitor business data and application performance.

Up until then, Zalando had been getting by with only the most rudimentary application monitoring, such as crash reporting. For a data-driven company, this was clearly not enough. It needed a deeper vision into the causes of those crashes, not just a report of their occurrence. And so the tech team began looking for a SaaS-based APM solution that could provide that insight—taking the site from reactive to proactive mode.



It didn't take long for the team to choose the New Relic Software Analytics platform. "As a team, we chose New Relic because it provided us with an easy means to monitor application data, and a powerful and fast way of extracting meaning from the gathered data", says Dennis Blessing, a Java engineer at Zalando.

Zalando uses New Relic to meet their business challenges head on, and the team couldn't be more pleased with the results. Says Jan Gorman, Zalando's delivery lead for iOS and Android, about New Relic Mobile, "Crash reporting in New Relic is better than other solutions we've tried because we get the entire navigation history prior to each crash".

In addition, he says, New Relic Mobile's "HTTP monitoring uncovered some errors that we were previously unaware of. Even though those errors had not resulted in an app crash, they were having a negative impact on customer experience".

This HTTP monitoring also allowed Zalando to track the performance of its third-party APIs—something the company had come to realise was desperately needed. "Unfortunately", says Gorman, "failures at those ends previously went unnoticed for quite some time".

As Zalando continues to expand its use of the New Relic platform, the tech team is convinced the products will help fuel the company's future growth. "Our team is shifting toward a micro-services architecture to help us to move faster and keep code complexity low as our team grows", says Alexander Kops, Zalando's delivery lead for Brand Solutions. "Extensive monitoring will become even more crucial as our work evolves in this direction".



Learn more about Zalando's success:
<https://blog.newrelic.com/2015/04/27/ecommerce-zalando-berlin/>



CHAPTER 4

Up and Running in No Time

By now, most e-commerce companies have likely benefitted in one way or another from using a SaaS-based solution. These products are affordable and they're quick to deploy, making them perfect for e-commerce environments that need APM—especially when they need the service up and running immediately. Skullcandy saw the time and cost savings that would come from using SaaS-based APM compared to a traditional on-premise solution. And thanks to its decision to go with the New Relic Software Analytics Platform, the e-commerce team is seeing measurable improvements.



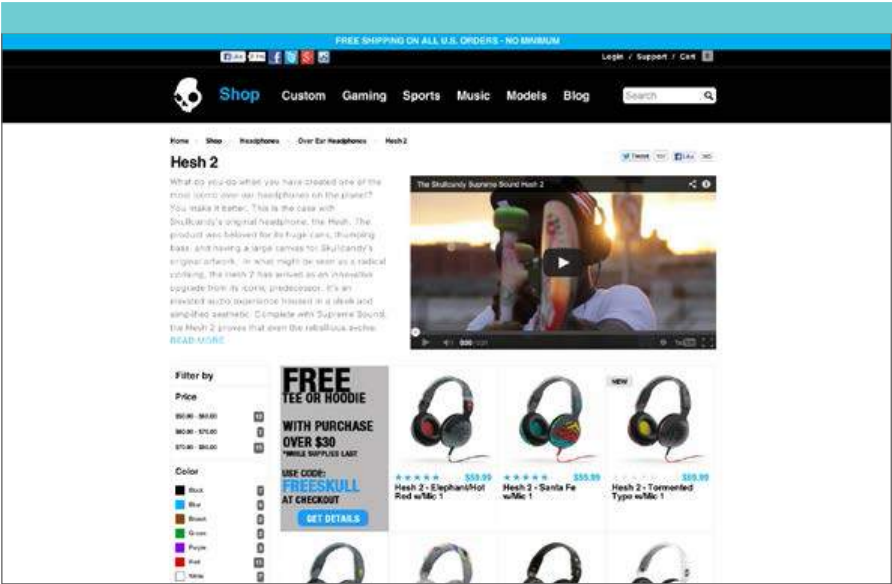
How Skullcandy Successfully Launched a Brand New E-Commerce Site

Skullcandy became one of the world’s most distinct audio brands by bringing colour, character and performance to an otherwise monochromatic space and helped revolutionise the audio arena by introducing headphones, earbuds and other audio and wireless lifestyle products that possess unmistakable style and exceptional performance.

When the company launched its e-commerce site in 2008, it took off immediately. Built on the Magento e-commerce platform with PHP and Linux, the online channel’s sales growth has challenged the interactive team to keep up with accelerating demands. And eventually, the site’s growing pains got worse with a number of performance issues.

Unplanned outages were on the rise, usually occurring more than once a week and often for significant duration. Since outages equate to lost revenue, and potentially, even to lost customers, Skullcandy’s interactive team immediately sought to identify the solution and fix it. Although a new script fixed a memory leak that was causing the problem, Skullcandy still lacked proactive real-time performance monitoring and management tools, which made it difficult to see what was going on in real time.

Based on a recommendation, the Skullcandy team decided to give New Relic a try. They were immediately delighted by the ease of implementation. And even more delighted with how fast they had actionable data and information. Andrew Spencer, Skullcandy’s Director of Interactive Technology, attributes much of that success to the fact that New Relic is a SaaS-based solution.



“It only takes about five minutes to install the agent”, he says. “And once we added it to our provisioning, all our servers get New Relic automatically with no additional configuration required. Compared to that, the enterprise products I’ve used in the past took at least 30 days to configure before you’d have any data that was usable. With New Relic, we get everything we need from a single service—alerts, error monitoring, transaction traces, application statistics, etc., and best of all, we got immediate results and insights that we just had not seen before”.

Skullcandy has achieved some notable results using New Relic, including a mean time to resolution improvement of 300%. It's also made staff's lives easier by reducing the number of emergencies and fire drills that would otherwise make them frazzled.

When the company released its new e-commerce site, Skullcandy 2.0, in 2011, having SaaS-based APM especially came in handy. To get ready for the launch, the team used New Relic to monitor the application, which helped boost their confidence level significantly. "Once we started using New Relic, we had immediate insight into the application, how it was performing, where issues were", says Spencer. "We had the confidence we needed to move forward even knowing that late in the year is not the best time to launch a new online site".

The second the site launched, Spencer and his team saw a significant performance problem that was not revealed by prior tests. But within minutes, New Relic pinpointed the problem, highlighting both slow queries and the database level as well as specific PHP bottlenecks.

It took less than 30 minutes to see and fully diagnose the problem. The team had fixes in place just 15 minutes later. The whole process took less than an hour, and after that, the site just hummed.

Says Spencer, "Had we not been able to discover, identify, fix, release and monitor those issues that quickly, we would have had to roll back and wait until Q1 of the next year to implement the new site. Thanks to New Relic, Skullcandy 2.0 went live on time. Our internal customers were pleased and so were we".

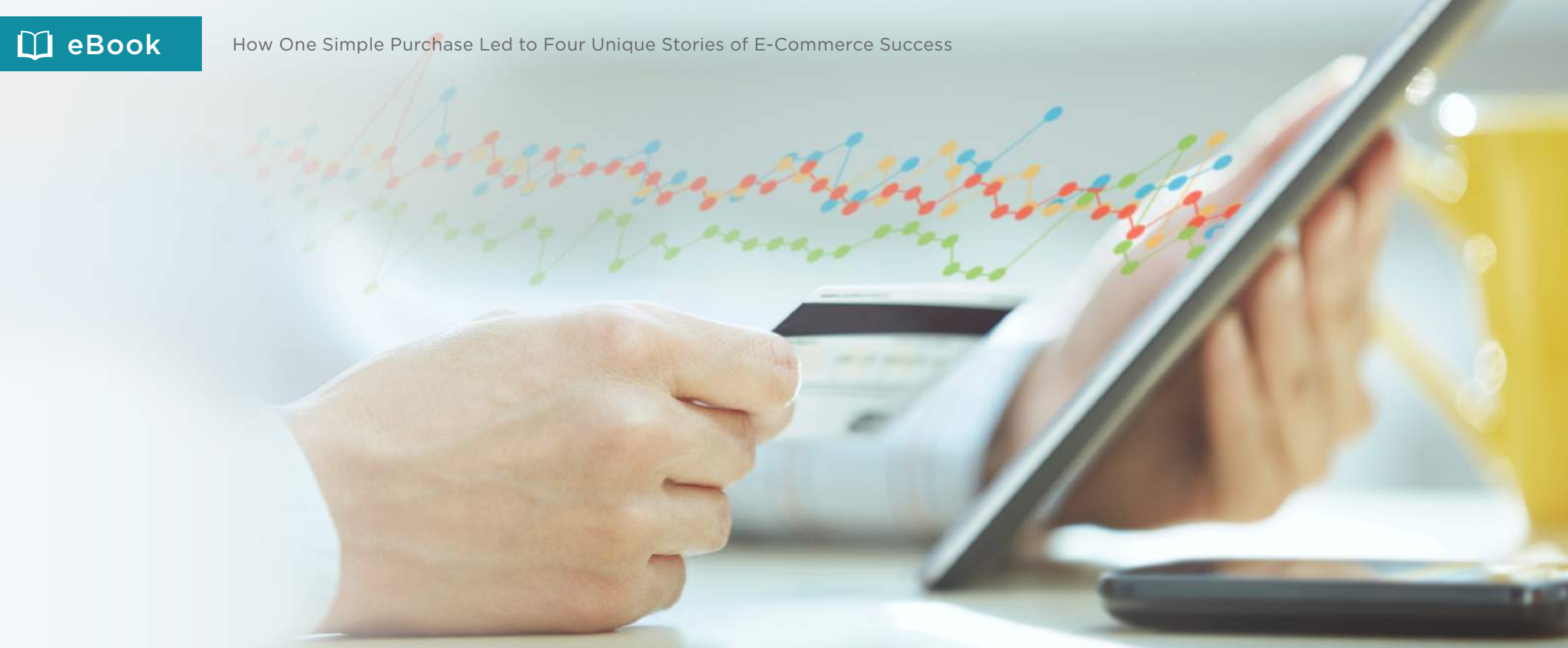
Navigating the App Map

An Application Topology map (App Map) illustrates your app and its related services as an architectural map. It also shows performance problems in your app's end-user experience, your app itself, and any of the internal or external services backing your app.

Skullcandy's use of the App Map feature is interesting. The team wrote their own internal services to replace parts of Magneto's system, as well as Magneto extension. The first was the coupon system that they rewrote as an external service. When the system makes an HTTP call to the external service, New Relic monitors that performance via the App Map. This new process helped the e-commerce site's performance improve by 25%.



Get the full scoop on the launch of Skullcandy 2.0: <http://newrelic.com/case-studies/skullcandy>



Conclusion

In today's highly competitive e-commerce landscape, the success of your company directly correlates with how quickly you're able to pinpoint and solve performance issues. After all, poor website performance translates into lost revenue, brand damage and additional support costs for your company. And when it's peak shopping season, the pressure can be especially overwhelming.

To help them ensure a positive shopping experience for customers, e-commerce companies just like yours are turning to a SaaS-based software analytics platform to improve performance and ease application management and monitoring. With these cloud-driven capabilities, we think you'll be empowered with the tools for you to be able to increase revenue and drive business growth.

About New Relic

New Relic is a software analytics company that makes sense of billions of data points about millions of applications in real time. New Relic’s comprehensive SaaS-based solution provides one powerful interface for web and native mobile applications and consolidates the performance monitoring data for any chosen technology in your environment. Hundreds and thousands of users trust New Relic to tap into the billions of real-time metrics from inside their production software—and provide answers to their important business questions. When your brand and customer experience depend on the performance of modern software, New Relic provides insight into your overall environment. Learn more at newrelic.com.

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