

# Beyond web analytics

Understanding the *why* behind the *what* of online customer behavior



## Executive summary

It's easy to get visibility into customer behavior at a physical store.

Imagine this scenario: You're a brick-and-mortar retail store manager and you see customers walking out of your store in frustration, leaving their half-full shopping carts at the door. You quickly notice a major backup in the checkout line. You see that a register is down at one of the checkout counters, causing the backup. You immediately open up a new checkout line and restore service.

You can move quickly and decisively because you have clear visibility into the customer experience and the drivers of that experience. You can see both the *what* and the *why* of customer behavior.

Understanding *why* online customers behave as they do is a challenge.

Now imagine that you're the manager of an online retail site. Here, your visibility is limited. Web analytics can give you an idea of *what* is happening. For example, it can tell you the number of customers who are abandoning their shopping carts and leaving your site. It can also tell you what these customers were doing when they left, such as viewing pages in a product catalog or checking out.

The problem is that Web analytics solutions don't give you visibility into *why* customers are leaving. There could be hundreds of reasons. Maybe they couldn't get a good view of the product they wanted to buy. Maybe their credit card verification was taking too long. Perhaps they got an indecipherable error message. You can only guess at the cause. So your ability to take swift and appropriate action is limited.

Foglight User Experience Management like having a digital video recorder trained on every customer who visits your site. You can replay any customer's experience and determine not only *how* the customer behaved but *why*. With this information, you can rapidly zero in on the causes of problems and respond quickly.

### Foglight User Experience Management delivers visibility into the *why* of customer behavior.

How can you increase your visibility to also understand the *why* of customer behavior? That's where Foglight User Experience Management from Dell comes in. This advanced solution monitors and records every step of every customer's visit to your site —every transaction, every mouse click, every page view, even what the customer is placing in his or her shopping cart.

It's like having a digital video recorder trained on every customer who visits your site. You can get an instant replay of every customer's experience and determine not only *how* customers behaved but *why*. With this information, you can rapidly zero in on the causes of problems, so you can act quickly and decisively. You can also determine the business impact of problems and prioritize your actions for maximum efficiency.

Foglight User Experience Management like having a digital video recorder trained on every customer who visits your site. You can replay any customer's experience and determine not only *how* the customer behaved but *why*. With this information, you can rapidly zero in on the causes of problems and respond quickly.

Foglight User Experience Management also records the performance of all the components of the IT infrastructure that contribute to each user transaction, such as Web servers, application servers, database servers, and network devices. You can see not only the overall transaction times but also the individual times of each component of each transaction. If performance degrades, you can quickly determine the offending component.

### Both line-of-business owners and IT staff benefit from this visibility.

Both line-of-business owners and IT staff benefit from this broad and deep visibility. Line-of-business owners

can keep watch on their sites from their users' perspective, keeping user experience positive to maximize conversion rates. They can also see problems that may otherwise remain hidden and recover revenue that may otherwise be left on the table.

IT staff not only have visibility into exactly what the customer did and saw every step of the way but also can see the system response to every mouse click. That speeds problem resolution.

Because Foglight User Experience Management can be used by both the line-of-business owners and IT, it fosters close collaboration between these two groups, which is essential for business success.

### The first step: customer monitoring

In any retail business, ensuring excellent customer shopping experience every time is critical to sales. That's a lot easier to do in a physical store than at an online store, but it's just as important for an online store. And online retail (e-tail) has become a major source of sales for retail companies. In many companies, it's the only source. As a result, e-tail organizations have to pay close attention to customer experience.

### Customer support lines provide some help but have major drawbacks.

Initially, e-tail companies set up customer support lines with the premise of "We'll know that something is wrong when people call in and tell us, and we can monitor support line call volume to assess the severity of the reported problems." That works to a certain extent and it provides a good last line of defense.

But support lines have major drawbacks. They're expensive and cut into profit margins. They require support reps to question customers in detail to determine the context of problems — a time-consuming, incomplete, and error-prone process. And it's a reactive approach, triggering only after

customers have experienced a problem – after the damage has been done. What’s more, only a small percentage of customers will call in. Others simply abandon their transactions and may jump off to competing sites.

### **Web analytics provide partial visibility into customer experience.**

The next step in the evolution of customer monitoring has been the introduction of Web analytics solutions such as Google Analytics, Omniture, and Coremetrics. The primary purpose of these solutions is to help increase customer conversion rates. E-tailers focus much attention here because even a small increase in conversion rate can result in a large increase in revenue and profit margin.

Web analytics solutions gather a substantial amount of customer data. They indicate what drove customers to the site, such as email campaigns, sponsored links, and online ads. They also monitor the progress of customers through the “conversion funnel.” They monitor overall success – that is, how many users who enter go all the way through the funnel to conversion. They also measure incremental success, or the percentages of users who continue through each step of the funnel, showing where users drop off on their way to conversion.

Web analytics solutions can also analyze customer behavior patterns and determine trends. They can segment data in a variety of ways, such as by geographical area, by customer demographics, and by access device (laptop, tablet, or smartphone).

Because of the data they gather, Web analytics solutions have become an indispensable tool in most e-commerce operations. However, these solutions provide only partial visibility into actual customer experience. They provide visibility into the quantity and attributes of the groups of visitors who are having trouble completing a process, such

as checkout. Attributes might include location, Internet browser, and time of day.

Web analytics solutions have become an indispensable tool in most e-commerce operations. However, these solutions provide only partial visibility into actual customer experience. They can help you determine what is happening at your web site, but they come up short in providing information about *why* it is happening.

### **Example: Web analytics can’t tell you the cause of customer-impacting issues.**

Web analytics solutions do not provide clear visibility into the cause of the trouble. Here’s an example:

A Web analytics solution indicates that the conversion rate is off 3 percent. A segmentation analysis of the data indicates that the biggest drop is coming from customers using Internet Explorer 7 in the billing step of the checkout process. It’s up to you to find the cause of the problem. You attempt to duplicate the problem by accessing the site with an IE7 browser and going through the billing step. Everything looks just fine. So you go into guess/test mode, hoping you can discern the problem cause from the clues provided by the Web analytics solution. This is laborious and time-consuming, and your success depends a great deal on luck.

As can be seen from the example, Web analytics solutions help you determine *what* is happening at your web site, but they come up short in providing information about *why* it is happening.

### **The next step: customer experience monitoring**

#### **Understand the customer’s experience, not just the customer’s actions.**

With Foglight User Experience Management, you gain clear visibility into the fuzzy areas left by Web analytics. You can observe your site and its sales process exactly as your customers experience them.

Web analytics solutions have become an indispensable tool in most e-commerce operations. However, these solutions provide only partial visibility into actual customer experience. They can help you determine *what* is happening at your web site, but they come up short in providing information about *why* it is happening.



Foglight monitors and records every customer action, from the time the customer enters your site to the time he or she leaves. You can play back any customer session you choose, end to end. You can see every transaction, every screen, and every source of frustration the customer experiences in exactly the same way the customer experienced them.

Foglight is an appliance that simply attaches to your network. It's easy to install. It's non-disruptive in that it doesn't impact network traffic. And it's highly scalable. You just plug in additional appliances as needed.

Foglight monitors and records every customer action, from the time the customer enters your site to the time he or she leaves. You can play back any customer session you choose, end to end. You can see every transaction, every screen, and every source of frustration the customer experiences in exactly the same way the customer experienced them.

Foglight monitors and records every customer action, from the time the customer enters your site to the time he or she leaves. You can play back any customer session you choose, end to end. You can see every transaction, every screen, and every source of frustration the customer experiences in exactly the same way the customer experienced them.

#### **Foglight captures detailed data on every user session.**

Foglight captures detailed data on every user session, including:

- **Actual content** delivered to the browser for each page
- **Customer attributes**, such as user ID, geographical area, connection speed, and browser type
- **Hit attributes**, such as date and time of day
- **Segmented response times**, such as client time (in the browser), network time (between the browser and web server), and processing time (time spent in the web server, app, database, and any other involved systems before the first part of the response is received)
- **Content type**, such as .gif and .bmp pictures, and style sheets that give page layout information
- **HTTP response codes**, such as error codes

This detailed data adds considerable clarity to your view of the customer's experience.

#### **Search functionality and a variety of viewing and reporting options offer flexibility.**

You can selectively search the customer session recordings based on a variety of criteria, such as time, location, customer access device, and the step reached in the process, such as checkout.

Foglight consolidates and presents the data it gathers in a variety of real-time dashboards and historical reports. The dashboards provide early warning of potential problems so you can move proactively to head off problems before they result in customer frustration. The information included in reports enables you to identify trends and keep customer experience positive.

#### **The value of increased visibility**

##### **Example: Foglight tells you what web analytics can't.**

The increased visibility you get with Foglight delivers important business benefits. Let's revisit the earlier example of the IE7 browser problem and see how the visibility provided by Foglight helps you quickly zero in on the problem's cause.

Instead of a guess/test approach, you query Foglight for the sessions over the last hour that used an IE7 browser and abandoned on the billing step of checkout. You then replay a random sample of those sessions.

In the first session you replay, everything looks fine. The customer most probably abandoned as some customers normally do in this step. But in the second session you replay, the problem immediately presents itself. You see that the graphic representation of the product category the customer requested is not displaying properly. Much of the key content is pushed "below the fold."

After replaying a few more sessions, you see that the problem occurs only when a customer is viewing a particular product category out of the 20 categories on your site. That's why the first session you replayed looked okay in the "quick test" you did on IE7 after segmenting the problem in

your Web analytics package. In that session, the customer was viewing a different product category.

With this key insight from Foglight, IT easily rectifies the problem by reformatting the display in IE7 for the offending product category.

After the fix is deployed and verified, you replay recent sessions and see that the problem is no longer occurring. Shortly thereafter, you see from your Web analytics solution that the conversion rate is floating back up.

This example shows how Foglight can be used in concert with a Web analytics solution to greatly enhance your ability to maintain excellent customer experience.

Foglight can be used in concert with a Web analytics solution to greatly enhance your ability to maintain excellent customer experience.

#### **Foglight helps business owners increase revenue.**

Foglight delivers significant value to both line-of-business owners and to IT. Line-of-business owners gain detailed visibility into customer experience, so they can see problems that they may not otherwise have detected. Foglight can also help owners discover opportunities to increase revenue. For example, Web analytics tells you that in your new product introduction, you are running at a 20 percent conversion rate. That may be OK, but is it the best you can do? The loss of conversions may be entirely due to business reasons, such as price, or not having the exact product customers need, such as a specific color or size. Or you might be losing customers for causes other than business reasons. With Foglight, you can replay the sessions in which customers abandoned transactions to find out if that is the case, and if so, why.

#### **Example: See why customers are abandoning the site during checkout.**

Here's an actual example from a business owner using Foglight that illustrates the power of session replay:

The business owner played back a random sample of the abandoned sessions and saw that customers were abandoning the checkout process on the shipping page. A significant number of the customers had received a cryptic error message, "Internal Error 4099," when they clicked "Next." After looking closely at three playbacks, the business owner noticed a common thread: all the customers who encountered the problem were entering a full nine-digit zip code instead of the normal five digits.

The business owner reported the problem to IT. Based on the error code and the nine-digit zip code insight provided by Foglight, IT quickly identified the root cause of the problem and implemented a fix. After the problem was remediated, the client used Foglight to verify that it was no longer occurring. Then, using a Web analytics solution, the client saw a five percent increase in conversions, and a corresponding increase in revenue, which would otherwise have been left on the table.

#### **Example: The business can prioritize problems based on transaction value.**

Foglight can also capture custom attributes such as shopping cart value. This information enables you to establish priorities based on business impact. For example, you may see a small number of abandonments in a particular set of customer sessions. When you replay these sessions, however, you observe that they are mostly high-value transactions.

Because of the small number of sessions affected, you might otherwise have overlooked the problem. But because of their high value as indicated by Foglight, the aggregate revenue lost in the abandoned sessions is substantial. So you assign a high priority to determining the cause and fixing the problem.

Foglight can be used in concert with a Web analytics solution to greatly enhance your ability to maintain excellent customer experience.

With Foglight, IT can move proactively to address problems before they result in service degradation.

### Foglight helps IT become proactive.

With Foglight, IT can move proactively to address problems before they result in service degradation.

Foglight is also a valuable resource for IT. It not only gives IT an early warning of problems but also provides greater visibility into the root causes of those problems. With Foglight, IT can move proactively to address problems before they result in service degradation. Here's an example:

A line-of-business owner sees on a Foglight dashboard that more users than normal are abandoning their sessions at checkout. She replays appropriate sessions and sees that there is a long delay in presenting product availability information. She then creates a .zip file of the selected sessions and emails it to IT for investigation and resolution.

IT sees that for the problematic sessions, the response time of the inventory database is outside acceptable limits, even though other queries are running fast and the overall CPU usage on the database server is low. IT determines the cause of the problem is that the inventory database has grown substantially since it was first deployed. To remediate the problem, IT adds some additional indexes to support this particular query more efficiently.

Once the fix is deployed, IT sends a recent customer session playback to the line-of-business owner verifying that the problem has been eliminated.

Because it serves both line-of-business owners and IT staff, Foglight provides a vehicle for close collaboration between these two groups. That fosters closer alignment and better communication between IT and the business.

### Beyond customer experience monitoring

Today's multi-tiered Web applications are extremely complex, with multiple

components that may be scattered across different platforms: Web servers, application servers, databases, network devices, and user access devices. And virtualization has added an unprecedented level of dynamism to the data center.

Keeping your Web applications running at agreed-on service levels in this complex and continuously changing environment presents a major challenge. To meet the challenge, you have to look beyond customer experience monitoring to application performance monitoring.

### Foglight delivers end-to-end application performance monitoring.

Foglight User Experience Management is part of a broader Foglight end-to-end application performance monitoring solution. This solution enables you to monitor and manage both the front end and the back end of your e-tail web applications. The industry leadership of Quest Software (now a part of Dell) in application performance monitoring is validated by Gartner. Gartner places Quest in the leaders' quadrant of the 2012 Gartner Magic Quadrant for Application Performance Monitoring<sup>1</sup>.

Foglight User Experience Management is part of a broader Foglight end-to-end application performance monitoring solution. This solution enables you to monitor and manage both the front end and the back end of your e-tail web applications.

### Foglight components simply plug into the Foglight platform.

Foglight is built on a modular architecture of which Foglight User Experience Management is one component. Other components offer additional functionality, including:

- Application server monitoring and diagnostics
- Database monitoring and management
- Virtual server management

<sup>1</sup>*Magic Quadrant for Application Performance Monitoring*, Jonah Cowall, Will Capelli, Gartner Research G00232180, August 2012.



- Network system management
- Middleware monitoring

All components are built on a single code base so they simply plug into the Foglight platform, integrating easily and seamlessly.

With Foglight, you can go well beyond customer experience monitoring. You can employ Foglight User Experience Management as a first step in application performance monitoring. You can then add complementary Foglight application performance monitoring components to enable IT specialists such as database administrators to look “under the hood” to determine the root causes of problems. That greatly speeds mean time to resolution.

### Conclusion

Web analytics solutions have become a necessary tool for e-tail. They provide valuable data and analytics that enable line-of-business owners to understand what customers are doing on their e-tail sites. The owners can leverage this information to boost conversion rates. But these solutions do not provide sufficient visibility into *why* customers are behaving the way they do.

Foglight User Experience Management provides the visibility you need into the *why* of customer behavior. Both line-of-business owners and the IT staff benefit. Line-of-business owners can leverage the increased visibility to quickly identify sources of customer frustration and work with the IT staff to eliminate them. IT staff can leverage the increased visibility provided by Foglight User Experience Management to gain insight into the root causes of problems, speeding problem diagnosis and repair.

Insight into the *why* behind the *what* of online customer behavior enables line-of-business owners and IT to collaborate more easily and more effectively. That keeps customer experience positive, which translates into increased revenues and higher profitability.

Foglight User Experience Management is part of a broader Foglight end-to-end application performance monitoring solution. This solution enables you to monitor and manage both the front end and the back end of your e-tail web applications.

## For More Information

© 2012 Dell, Inc. ALL RIGHTS RESERVED. This document contains proprietary information protected by copyright. No part of this document may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording for any purpose without the written permission of Dell, Inc. ("Dell").

Dell, Dell Software, the Dell Software logo and products—as identified in this document—are registered trademarks of Dell, Inc. in the U.S.A. and/or other countries. All other trademarks and registered trademarks are property of their respective owners.

The information in this document is provided in connection with Dell products. No license, express or implied, by estoppel or otherwise, to any intellectual property right is granted by this document or in connection with the sale of Dell products. EXCEPT AS SET FORTH IN DELL'S TERMS AND CONDITIONS AS SPECIFIED IN THE LICENSE AGREEMENT FOR THIS PRODUCT,

DELL ASSUMES NO LIABILITY WHATSOEVER AND DISCLAIMS ANY EXPRESS, IMPLIED OR STATUTORY WARRANTY RELATING TO ITS PRODUCTS INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. IN NO EVENT SHALL DELL BE LIABLE FOR ANY DIRECT, INDIRECT, CONSEQUENTIAL, PUNITIVE, SPECIAL OR INCIDENTAL DAMAGES (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF PROFITS, BUSINESS INTERRUPTION OR LOSS OF INFORMATION) ARISING OUT OF THE USE OR INABILITY TO USE THIS DOCUMENT, EVEN IF DELL HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. Dell makes no representations or warranties with respect to the accuracy or completeness of the contents of this document and reserves the right to make changes to specifications and product descriptions at any time without notice. Dell does not make any commitment to update the information contained in this document.

## About Dell

Dell Inc. (NASDAQ: DELL) listens to customers and delivers worldwide innovative technology, business solutions and services they trust and value. For more information, visit [www.dell.com](http://www.dell.com).

If you have any questions regarding your potential use of this material, contact:

## Dell Software

5 Polaris Way  
Aliso Viejo, CA 92656  
[www.dell.com](http://www.dell.com)

Refer to our Web site for regional and international office information.

