COLUMNS

New direction needed for mobile Web site performance

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It is certainly no secret that the rise in consumers' mobile device usage is steadily transforming the online shopping experience.

However, time and time again, figures show a massive divide between adoption rates and conversion rates on mobile devices. It would seem that conversion rates on mobile devices should approximate those of desktop PCs, but they do not yet come close. This means online retailers have yet to maximize mobile as a sales channel.

Below are some interesting observations from our recent analysis of online retailers' mobile site performance. Based on these insights, we have also included some tips for organizations to turn mobile into a stronger sales driver this year.

Observation #1: Mobile performance – the speed and reliability of mobile sites and mobile Web applications – continues to lag behind. Organizations are currently behind the curve when it comes to managing and understanding mobile performance.

However, they need to understand that performance is one of the most important differentiators when it comes to mobile adoption, use and customer satisfaction.

Too many companies fail to deliver the mobile experience that users are demanding.

This applies to mobile Web sites as well as native mobile applications, which are also increasingly viewed by consumers as yet another company touch point, and especially hybrid mobile applications where Web browsers are embedded in the actual application.

Truly, the bar for mobile site and mobile app performance is being set by those developing traditional Web sites, and it is a high one.

For example, a consumer survey conducted by Harris Interactive revealed that 37 percent of smartphone and tablet users will go to a competitor if the response time is more than three seconds. And, yet, during one particularly important sales period, our data found that many mobile site download times exceeded 10 seconds.

Additionally, response times averaged more than 18 seconds to complete a multiple-step transaction that included accessing the homepage, conducting a search, viewing a product description, adding items to the shopping cart and reviewing the order.

Observation #2: Performance optimization is key to success. As part of our analysis, we also looked at how much content online retailers were delivering –number of bytes – on the mobile site, the complexity of the site – number of objects – and how many third-parties were contributing to the site, which is the number of hosts.

All too often, we found that critical pages were overloaded, made too many roundtrips to the server backend to complete each page and relied on too many external third-party services, which made them less responsive on mobile devices.

Clearly, the mobile sites that perform poorly are trying to do too much.

Many organizations are trying to deliver the same level of feature-richness on their mobile sites as their traditional Web sites. This results in exceedingly heavy pages — two megabytes or more — and some with more than 100 objects and more than two dozen third-party services.

This is not a recipe for success in the mobile realm, since highly optimized pages win out when it comes to performance.

Observation #3: Slower equals higher rates of abandonment. Numerous internal analyses have supported a direct correlation between slower page load times and higher rates of abandonment, leading to lost revenue opportunities.

During peak periods, one would think that areas of the country experiencing the highest levels of mobile traffic would have exhibited slower mobile site performance, since mobile network resources came under strain.

However, our analysis shows that this is not always the case, indicating that heavy traffic is not necessarily to blame for poor performance. Rather, the more likely culprit is lack of mobile optimization.

So what are some key lessons and takeaways? Here are some recommendations:

Tip 1: Mobile sites must minimize the number of downloads from third-party domains.

During our analysis, we found one mobile site in particular that required the end user to download an astonishing 87 resources — images, as well as JavaScript, CSS and HTML files — from 25 different domains on its shopping cart page.

Most of these downloads came from third-party content domains, which are notorious for causing entire pages to slow down.

The fact is, downloading content from 25 different domains is a bad practice, and mobile sites must be optimized to open as few connections as possible.

Stronger performing mobile sites typically download resources from a much smaller number of different domains, which greatly improves overall mobile site load times.

Tip 2: Mobile sites must reduce the number of server roundtrips. We found that slow pages were not just guilty of downloading many more items.

Additionally, on slow sites, many of the JavaScript and CSS files were being redirected from the mobile domain to the regular Web site domain. On one mobile shopping cart page, in particular, we found a total of 28 roundtrips which were not necessary for the end user to complete a transaction.

This is a huge problem on mobile devices because the latency of mobile networks is already high.

Unnecessary redirects just lead to even more time wasted on the network.

Besides the redirects, many of the JavaScript and CSS files could be merged to reduce the number of roundtrips even further. This is a general Web performance best practice that applies to both traditional Web sites as well as mobile sites.

Tip 3: Critical pages in the conversion funnel are too heavy and need to be lightened. There is no question that average bandwidth and speed of mobile connections have improved over the years. But it is still a good practice to keep mobile site content as slim and optimized as possible.

If end users do not have a mobile plan that includes unlimited data or if a mobile site is serving shoppers that are roaming, it is important to make sure their mobile shopping experience will not leave them with a bad aftertaste when they get their monthly statements.

As an example, during our analysis we found one shopping cart page that had a total of 2.447KB in page size, with one JavaScript file alone being 1MB in size. That was quite astonishing to us.

A closer look at this JavaScript file revealed that the site owner seemed to just pack every possible bit of code into that file. When analyzing the actual executed JavaScript, it seems that only a very small percentage of that code was actually used.

In this case, it would have been good practice to split the JavaScript into smaller pieces and only download the part that was really necessary for the mobile site.

So, organizations must avoid delivering heavy mobile sites with mainly unused content.

Keeping pages lighter – and limiting content to only that which is frequently used – is critical for delivering faster, more streamlined mobile experiences.

ALTHOUGH MOBILE commerce made significant strides over the past year, both in terms of traffic and sales volumes, the full sales potential of mobile devices is still waiting to be realized.

So the question now becomes how online retailers can exploit this mobile migration in the upcoming year.

For online retailers to truly capitalize on the growing potential that mobile shoppers represent, they need to recognize that mobile performance is quickly emerging as a great competitive differentiator.

We live in a multi-screen world, where consumers are increasingly moving between devices as they conduct research and shop.

The line between phone, tablet and laptop is only going to get blurrier and it is up to online retailers to ensure that their mobile shopping experiences keep up with end-user expectations.

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