

Web Performance Today



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Cheat Sheet: Everything you wanted to know about web performance but were afraid to ask

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I don't know about you, but I'm a freak for stats. Up until a couple of years ago, though, my jones for web performance numbers had to go unsatisfied, because the research landscape was pretty barren.

Fortunately, the landscape is looking a lot less bleak these days. Now everyone from Amazon to Google has publicized their findings – alongside research heavy hitters like Forrester and Aberdeen – about how site speed improvements affect user behavior and business metrics such as conversion and revenue.

For obvious reasons, I have a vested interest in collecting all this data. In my line of work, I never know when I'm going to need to pull out a stat on something like, say, how many stock brokers would jump ship on their brokerage as a result of poor mobile web performance. (Answer: 57%) I like to be ready for every question – and if I'm not totally ready, I at least want to have enough information that I can make a decent guess without sounding full of BS.

If you've ever found yourself trying to rationalize performance spending to your boss or co-workers – or if you, like me, have an unhealthy relationship with statistics – here's a cheat sheet of stats and sources you can pull from for your next proposal or awkward elevator conversation.

User behavior and expectations about web performance

In 2006, the average online shopper expected a web page to load in 4 seconds. Today, that same shopper expects your page to load in **2 seconds or less**. [Source: Forrester Consulting]

- Web site performance is second only to security in user expectations.
- **56% of online bankers and brokers expect web pages to load in 2 seconds or less.**
- Poor website performance leads to dissatisfaction more often than any other factor. Sixty-four percent of online US bankers and brokers have had a dissatisfying experience when servicing their accounts. Web performance is far and away the biggest reason for this dissatisfaction.
- As online tasks get more urgent or complex, online users are less likely to try later and more likely to move to more expensive channels to complete the transactions. Fifty-six percent of online bankers would move to offline channels to ask a general account

question; 54% of online brokers would move to offline channels to trade investments if the website was unavailable or slow to respond.

- 48% of online bankers and brokers said that poor performance had an impact or significant impact on their likeliness to recommend a firm's services to a friend or family member. [Source: Forrester Consulting]

Users who experience a 2-second site slowdown make almost **2% fewer queries, click 3.75% less often**, and report being **significantly less satisfied** with their overall experience. [Source: Microsoft and Google]

- 57% of online consumers will abandon a site after waiting 3 seconds for a page to load.
- 8 out of 10 people will not return to a site after a disappointing experience.
- Of these, 3 will go on to tell others about their experience. [Source: PhoCusWright]

A user who has to endure an 8-second download delay spends only **1% of her total viewing time** looking at the featured promotional space on a landing page. In contrast, a user who receives instantaneous page rendering spends **20% of viewing time** within the promotional area. [Source: Jakob Nielsen]

- **Nearly one-third (32 percent) of consumers will start abandoning slow sites between one and five seconds.**
- **39% say speed is more important than functionality** for most websites, while only one in five rank greater site functionality as more important.

Between **37 to 49% of users** who experience performance issues when completing a transaction **will either abandon the site or switch to a competitor**. Of these, 77% will share their experiences with others. [Source: Sean Power, Metrics 101]

Users have faulty perceptions of time. For example, **the average person will perceive the amount of time it takes a page to load as being about 15% slower than the actual load time**. And later, in recalling their memory of how long it took for the page to load, **they will remember it took about 35% longer than it actually did**. [Source: Stoyan Stefanov, Psychology of Performance]

Site speed and its impact on ecommerce metrics: Revenue, conversions, page views and downloads

Issues with application performance are affecting overall business revenues by **up to 9%**. [Source: Aberdeen Group]

A 1-second delay in page load time equals **11% fewer page views**, a **16% decrease in customer satisfaction**, and **7% loss in conversions**. (In dollar terms, this means that if your site typically earns \$100,000 a day, this year you could lose \$2.5 million in sales.) [Source: Aberdeen Group]

- A site that loads in **3 seconds** experiences 22% fewer page views and a 50% higher bounce rate than a site that loads in 1 second. Impact on conversions: -22%.
- A site that loads in **5 seconds** experiences 35% fewer page views and a 105% higher bounce rate. Impact on conversions: -38%.
- A site that loads in **10 seconds** experiences 46% fewer page views and a 135% higher bounce rate. Impact on conversions: -42%. [Source: Strangeloop]

Shopzilla sped up its average page load time from 6 seconds to 1.2 seconds and experienced a **12% increase in revenue** and a **25% increase in page views**. It also doubled the number of sessions from search engine marketing and cut the number of required servers in half. [Source: Shopzilla]

Amazon found that it **increased revenue by 1% for every 100 milliseconds of improvement**. [Source: Amazon]

Mozilla shaved 2.2 seconds off their landing pages, thereby **increasing download conversions by 15.4%**, which they estimate will result in 60 million more Firefox downloads per year. [Source: Mozilla]

Performance optimization **improved conversion rate by 16.07% and cart size by 5.51%**. [Source: Watching Websites]

Yahoo **increased traffic by 9%** for every 400 milliseconds of improvement. [Source: Yahoo]

Visitors in the top ten percentile of site speed **viewed 50% more pages** than visitors in the bottom ten percentile. [Source: AOL]

Speed and the mobile web

“Sixteen percent of consumers have shopped via mobile phones or smartphones, but **27% of them report that it is dissatisfying due to the mobile shopping experience being too slow**. One-third of consumers report wanting to shop via their smartphones in the future, with 5% indicating that this will be an important aspect of their loyalty to online retailers. [Source: Forrester Consulting]

- More than half of mobile device users say that **they expect sites to download as quickly on their mobile devices as they do on their home computers**.
- 60% of mobile web users have had a problem when accessing a website in the past year.
- Slow load time was the number one issue faced by almost three quarters of them.
- Three out of 5 say that poor performance will make them less likely to return to the site.
- 40% said they'd likely visit a competitor's site next.

- The majority of study participants said they expect to be able complete simple transactions like checking their bank balance in a minute or less, or they will abandon the site. [Source: Equation Research]

From Nov. 1-15, the **average response time for 14 industry-leading mobile retail sites was 4.73 seconds**. Amazon led with a response time of 2.85 seconds. [Source: Mobile Commerce Daily]

Interesting side note: “Generation Y” generally gets slapped with the label of being impatient when it comes to page load times, but did you know that mobile web users over the age of 45 are actually the most impatient of all? The folks at Equation Research tell us this is so.

If none of those numbers convince your powers that be, then your organization may have bigger problems than just the speed of your website.

This cheat sheet is a work in progress. I'll be re-posting it any time I make significant updates. And if you come across any new performance studies, fire me an email at joshua@webperformancetoday.com.