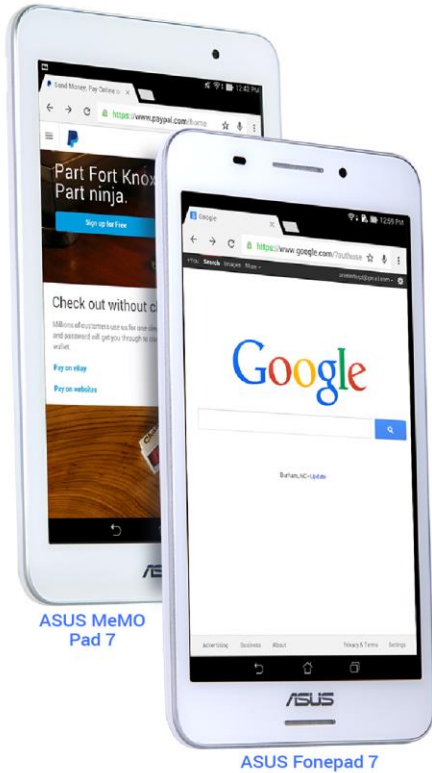


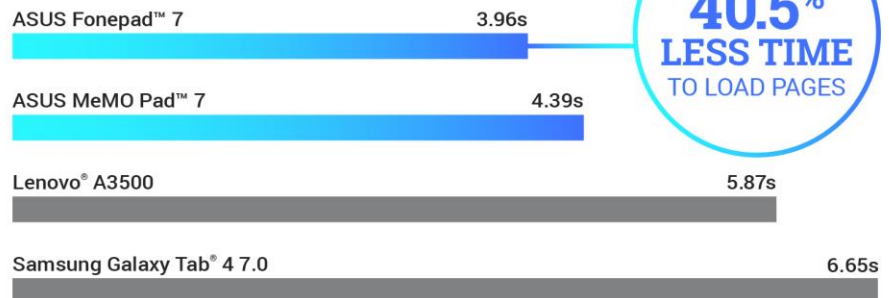
# EXPERIENCING THE INTERNET WITH THE ASUS FONEPAD 7 & THE ASUS MEMO PAD 7



## A smoother browsing experience with tablets powered by Intel®

ASUS® tablets powered by Intel loaded Web pages faster and with fewer issues than their ARM®-based competitors.

MEDIAN PAGE LOAD TIME FOR 100 WEB SITES:



Mobile devices running Android operating systems (OS) continue to grow in popularity. As more Android devices appear for consumers, it becomes harder to determine what hardware provides fast and reliable Web performance. Better processors in devices translate to better user experience in the form of Web-based advantages such as loading sites in shorter amounts of time and handling processor-hungry elements in today's Web sites. Android tablets powered by Intel processors, such as the ASUS Fonepad 7 and MeMO Pad 7, can offer these benefits.

In our hands-on testing at Principled Technologies, we wanted to see how Intel and ARM processor-based seven-inch Android tablets delivered Web experiences. We looked at how quickly the different tablets could load Web pages by browsing the top 100 Web sites from Alexa's Top Sites list in Google Chrome 37. We found that the Intel processor-powered ASUS tablets offered the shortest median times to load the pages. In addition, the Intel processor-powered ASUS tablets loaded 95 percent of the Web sites faster than the ARM-based Lenovo and Samsung tablets we tested.

After loading the Web pages, we checked to see if there were any responsiveness issues as we navigated the Web sites. We did not experience any sluggish Web elements with the ASUS tablets but did encounter issues with the ARM-based Lenovo and Samsung tablets.

If Android is your chosen mobile device platform, Intel processor-powered ASUS tablets can load your favorite Web sites without delay and provide a user experience with noticeably less hassle.



## A BETTER ANDROID WEB EXPERIENCE WITH ASUS & INTEL

Android tablets can be great devices for browsing the Web, but not all of them deliver the same experience. Users often don't have time to wait for a Web site to load, and sluggish Web sites can be a source of frustration. Whether for work or play, users need reliable hardware to deliver Web content when they want it. We set out to see if and how processors in tablets affect a user's Web experience.

We decided to use the top 100 Web sites from Alexa's Top Sites due to their popularity and range of content and topics. For Web browsers, we used Google Chrome 37, the latest version of the popular browser available for all the tested tablets. Figure 1 shows the devices we tested, our purchase price, the processor for each tablet, and the OS.

Device	Price (USD)	Processor	OS
ASUS Fonepad 7	\$229.00	Intel Atom Z3560	Android 4.4.2
ASUS MeMO Pad 7	\$134.10	Intel Atom Z3745	Android 4.4.2
Lenovo Tab A3500	\$199.68	MediaTek MTK8121 ARM Cortex A7	Android 4.2.2
Samsung Galaxy Tab 4 7.0	\$179.00	Marvell PXA1L88 ARM Cortex A7	Android 4.4.2

Figure 1: Tested devices with operating system info.

See [Appendix A](#) for more information about the ASUS tablets. For detailed configuration information on the tested devices, see [Appendix B](#). For details on how we tested, see [Appendix C](#), and for detailed results, see [Appendix D](#) and [Appendix E](#).

## WHAT WE FOUND

We had a better Web-browsing experience with the Intel-based ASUS tablets than with the ARM-based tablets, the Lenovo A3500 or the Samsung Galaxy Tab 4 7.0. On average, the ASUS tablets loaded pages faster than the Lenovo A3500 and the Galaxy Tab 4 7.0. The ASUS Fonepad 7 in particular loaded most of the Web sites in less time compared to the Lenovo A3500, and loaded all of the Web sites in less time compared to the Samsung Galaxy Tab 4 7.0.

After our tested Web sites loaded, we experienced no sluggish or inhibiting behavior with either Intel-based ASUS tablet. However, we did experience sluggish behavior on the ARM-based tablets.

### Loading Web sites

We found that the ASUS Fonepad 7 had a median Web site load time of 3.96 seconds, and the ASUS MeMO Pad 7 had a median Web site load time of 4.39 seconds. Both median times were less than the median load times of the Lenovo Tab A3500 (5.87 seconds) and the Samsung Galaxy Tab 4 7.0 (6.65 seconds). Figure 2 shows the median times for each tablet.

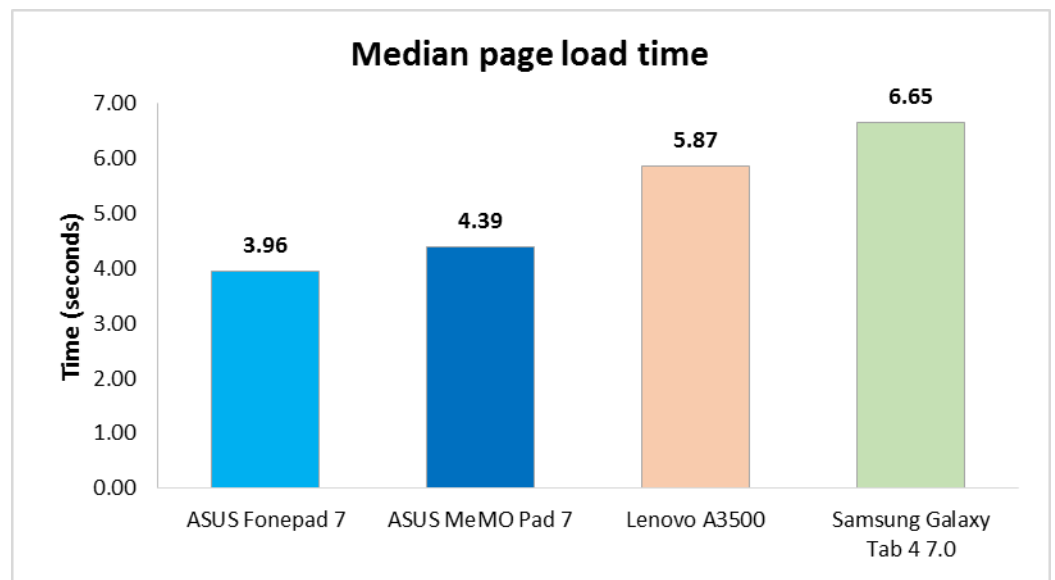


Figure 2: The median times in seconds for each device to load the tested sites. Lower numbers are better.

### Problematic behavior

After the pages loaded, some sites presented issues on the ARM-based tablets that didn't necessarily hinder the functionality of the site, but could distract or frustrate the user—issues such as choppy animations, sluggish scrolling, or re-rendering visual content after scrolling. The following examples represent problems we encountered with the ARM-based tablets:

- On the Samsung Galaxy Tab 4 7.0, the CNET Web site suffered from sluggish menu animations.
- The visual content on the Huffington Post main page re-rendered whenever we scrolled on the page with the Samsung Galaxy Tab 4 7.0.
- With the Lenovo A3500 and the Samsung Galaxy Tab 4 7.0, the AT&T Web site experienced sluggish slideshow transitions.

Some Web sites, such as AOL.com, presented more than one issue on one or both of the ARM-based tablets. See [Appendix D](#) for a complete list of the issues we encountered at each site we visited. Figure 3 shows our findings regarding problems after the test Web sites loaded.

	ASUS Fonepad 7	ASUS MeMO Pad 7	Lenovo A3500	Samsung Galaxy Tab 4 7.0
Web sites visited with issues (percent)	0	0	6	41
Number of issues experienced	0	0	6	49

Figure 3: The number of Web sites with problems and number of issues we found after loading the Web sites.

## CONCLUSION

On the go or at home, using an Android tablet for Web browsing should be an easy experience free from frustration. Whether you're reading articles or buying products online, the time to load a Web page and its responsiveness once loaded can dramatically affect your Web experience. If you use an Intel processor-powered ASUS Fonepad 7 or MeMO Pad 7 as your chosen Android device, you can get the Web content you want in less time and with smoother browsing overall than on the ARM-based Lenovo A3500 and Samsung Galaxy Tab 4 7.0 tablets.

## APPENDIX A – ABOUT THE COMPONENTS

### About the ASUS Fonepad 7

According to ASUS, the Fonepad 7 was designed to combine “the best of the smartphone experience with powerful tablet ability.” Powered by the 1.6GHz Intel Atom Z2560 processor, the Fonepad 7 has 1GB RAM, is 10.5mm thick, and weighs 340g. The device has rear and front-facing cameras, and a 1,280 × 800-pixel display screen. For accessing the Internet on the go, the Fonepad 7 has cellular 3G data capability. For more information, visit [www.asus.com/Tablets\\_Mobile/ASUS\\_Fonepad\\_7\\_ME372CG/](http://www.asus.com/Tablets_Mobile/ASUS_Fonepad_7_ME372CG/).

### About the ASUS MeMO Pad 7

According to ASUS, the seven-inch MeMO Pad “was created for those looking for a value tablet.” Powered by the 1.86 GHz Intel Atom Z3745 quad-core processor, the MeMO Pad 7 has 1GB RAM, is 9.6mm thick, and weighs 295g. The device has rear and front-facing cameras, and a 1,280 × 800-pixel display screen. For more information, visit [www.asus.com/Tablets/ASUS\\_MeMO\\_Pad\\_7\\_ME176C/specifications/](http://www.asus.com/Tablets/ASUS_MeMO_Pad_7_ME176C/specifications/).

## APPENDIX B – SYSTEM CONFIGURATION INFORMATION

Figure 4 provides detailed configuration information for the test systems.

System	ASUS Fonepad 7 (FE375CG)	ASUS MeMO Pad 7 (ME176CX)	Lenovo A7-50 A3500	Samsung Galaxy Tab 4 7.0
Price (USD)	\$229.00	\$134.10	\$199.68	\$179.00
Processor	Intel Atom™ Z3560	Intel Atom Z3745	MediaTek MTK8121 ARM Cortex A7	Marvell PXA1L88 ARM Cortex A7
Processor (GHz)	1.8	1.86	1.3	1.2
Processor cores	4	4	4	4
Memory	1GB LPDDR3 RAM	1GB LPDDR3 RAM	1GB LPDDR2 RAM	1.5GB LPDDR2 RAM
Storage	8GB eMMC	16GB eMMC	16GB eMMC	8GB eMMC
Battery capacity (Wh)	15	15	14.5	15.2
Display	7" (1280 × 800)	7" (1280 × 800)	7" (1280 × 800)	7" (1280 × 800)
Wireless	802.11 b/g/n	802.11 b/g/n	802.11 b/g/n	802.11 a/b/g/n
Bluetooth®	Bluetooth 4.0	Bluetooth 4.0	Bluetooth 4.0	Bluetooth 4.0
System weight (lbs.)	.66	.65	.70	.61
Front Camera (MP)	2.0	0.3	2.0	1.3
Rear Camera (MP)	5.0	2.0	5.0	3.0
OS	Android 4.4.2	Android 4.4.2	Android 4.2.2	Android 4.4.2

Figure 4: Detailed configuration information for the tested tablets.

## APPENDIX C – HOW WE TESTED

### Web Browsing Qualitative

On September 4<sup>th</sup>, 2014, we took the list of the top 500 viewed Web sites in the United States from Alexa.com ([www.alexa.com/topsites/countries/US](http://www.alexa.com/topsites/countries/US)) and excluded questionable sites (pornography, phishing, torrents, etc.), sites without any viewable content (googleusercontent.com is an example), and non-English language Web sites until we ended up with a list of 100 Web sites.

Once we had created our list, we visited each of the 100 sites on each of the four tablets using Google Chrome 37, looking for any elements of the Web site that did not perform correctly or were missing. We specifically looked at videos, special functions, moving parts, and general site behavior during zooming or scrolling. We noted any issues we found, excluded any that appeared on all of the devices, and calculated a percentage failed by comparing the total sites tested to the number of sites with issues on that device.

### Web Browsing Quantitative

In addition to looking at how Web sites functioned once loaded, we timed how long it took for each tablet to fully render each page. Between each page's launch and timing, we cleared the browser cache to ensure that the site's content loaded from the Internet rather than the tablet's local cache. Starting from the tablet's home screen:

1. Navigate to Settings. (Then select General on the Samsung tablet.)
2. Select Apps. (Select Application Manager on the Samsung tablet.)
3. Select Chrome.
4. Select Clear cache. This ensures the site is loaded from the Internet, and not from local cache.
5. Press the Android Home button to return to the home screen.
6. Press the Android Recents button, and clear all running tasks.
7. Press the Android Home button to return to the home screen.
8. Launch Google Chrome.
9. Type the URL of the Web site to be timed into the address bar.
10. Simultaneously press Go and start the timer.
11. Stop the timer when the Web page is fully rendered, the Chrome loading indicator stops spinning, and the page's favicon loads in the tab. Record the result.
12. Repeat steps 1-11 for each page load time to be collected.

## APPENDIX D – WEB SITES AND FINDINGS

Figure 5 lists the Web sites we visited and our detailed findings.

Site Name	Domain	Date Accessed	Problem	Problem Category	Did the tablet experience the listed problem?			
					ASUS Fonepad 7	ASUS MeMO Pad 7	Lenovo A3500	Samsung Galaxy Tab 4 7.0
ABC News	<a href="http://abcnews.go.com">abcnews.go.com</a>	9/23/2014	Sluggish scrolling	Visual/Presentation	No	No	No	Yes
About	<a href="http://about.com">about.com</a>	9/23/2014	Sluggish scrolling	Visual/Presentation	No	No	No	Yes
Adobe	<a href="http://adobe.com">adobe.com</a>	9/23/2014	Sluggish scrolling	Visual/Presentation	No	No	No	Yes
Amazon	<a href="http://amazon.com">amazon.com</a>	9/23/2014	None	None	No	No	No	No
Amazon AWS	<a href="http://amazonaws.com">amazonaws.com</a>	9/23/2014	Sluggish slideshow transitions	Visual/Presentation	No	No	Yes	Yes
American Express	<a href="http://americanexpress.com">americanexpress.com</a>	9/23/2014	None	None	No	No	No	No
Answers	<a href="http://answers.com">answers.com</a>	9/23/2014	Sluggish menu animation	Visual/Presentation	No	No	Yes	Yes
			Sluggish scrolling	Visual/Presentation	No	No	Yes	Yes
AOL	<a href="http://aol.com">aol.com</a>	9/23/2014	Sluggish slideshow transitions	Visual/Presentation	No	No	No	Yes
			Scrolling fast forces site to re-render content	Visual/Presentation	No	No	No	Yes
			Sluggish menu animation	Visual/Presentation	No	No	Yes	Yes
Apple	<a href="http://apple.com">apple.com</a>	9/23/2014	Sluggish menu animation	Visual/Presentation	No	No	No	Yes
Ask	<a href="http://ask.com">ask.com</a>	9/23/2014	None	None	No	No	No	No
AT&T	<a href="http://att.com">att.com</a>	9/23/2014	Sluggish slideshow transitions	Visual/Presentation	No	No	Yes	Yes
AWeber	<a href="http://aweber.com">aweber.com</a>	9/23/2014	None	None	No	No	No	No
Bank of America	<a href="http://bankofamerica.com">bankofamerica.com</a>	9/23/2014	Sluggish slideshow transitions	Visual/Presentation	No	No	Yes	Yes
Best Buy	<a href="http://bestbuy.com">bestbuy.com</a>	9/23/2014	None	None	No	No	No	No
Bing	<a href="http://bing.com">bing.com</a>	9/23/2014	None	None	No	No	No	No



Bleacher Report	<a href="http://bleacherreport.com">bleacherreport.com</a>	9/23/2014	None	None	No	No	No	No
Blogger	<a href="http://blogger.com">blogger.com</a>	9/23/2014	Sluggish scrolling	Visual/Presentation	No	No	No	Yes
Business Insider	<a href="http://businessinsider.com">businessinsider.com</a>	9/23/2014	Scrolling fast forces site to re-render content	Visual/Presentation	No	No	No	Yes
BuzzFeed	<a href="http://buzzfeed.com">buzzfeed.com</a>	9/23/2014	Scrolling fast forces site to re-render content	Visual/Presentation	No	No	No	Yes
			Sluggish scrolling	Visual/Presentation	No	No	No	Yes
Capital One	<a href="http://capitalone.com">capitalone.com</a>	9/24/2014	Sluggish menu animation	Visual/Presentation	No	No	No	Yes
			Sluggish search bar animation	Visual/Presentation	No	No	No	Yes
Chase	<a href="http://chase.com">chase.com</a>	9/24/2014	None	None	No	No	No	No
CNET	<a href="http://cnet.com">cnet.com</a>	9/24/2014	Sluggish menu animations	Visual/Presentation	No	No	No	Yes
			Scrolling fast forces site to re-render content	Visual/Presentation	No	No	No	Yes
CNN	<a href="http://cnn.com">cnn.com</a>	9/24/2014	None	None	No	No	No	No
Comcast	<a href="http://comcast.net">comcast.net</a>	9/24/2014	None	None	No	No	No	No
Constant Contact	<a href="http://constantcontact.com">constantcontact.com</a>	9/24/2014	None	None	No	No	No	No
Craigslist	<a href="http://craigslist.org">craigslist.org</a>	9/24/2014	None	None	No	No	No	No
Dailymail	<a href="http://dailymail.co.uk">dailymail.co.uk</a>	9/24/2014	Scrolling fast forces site to re-render content	Visual/Presentation	No	No	No	Yes
DeviantArt	<a href="http://deviantart.com">deviantart.com</a>	9/24/2014	None	None	No	No	No	No
Disney Go	<a href="http://go.com">go.com</a>	9/24/2014	None	None	No	No	No	No
Dropbox	<a href="http://dropbox.com">dropbox.com</a>	9/24/2014	None	None	No	No	No	No
Drudge Report	<a href="http://drudgereport.com">drudgereport.com</a>	9/24/2014	None	None	No	No	No	No
eBay	<a href="http://ebay.com">ebay.com</a>	9/24/2014	Sluggish scrolling	Visual/Presentation	No	No	No	Yes

ESPN Go	<a href="http://espn.go.com">espn.go.com</a>	9/24/2014	Scrolling fast forces site to re-render content	Visual/Presentation	No	No	No	Yes
Etsy	<a href="http://etsy.com">etsy.com</a>	9/24/2014	None	None	No	No	No	No
Facebook	<a href="http://facebook.com">facebook.com</a>	9/24/2014	None	None	No	No	No	No
FedEx	<a href="http://fedex.com">fedex.com</a>	9/24/2014	Sluggish menu animations	Visual/Presentation	No	No	No	Yes
Fiverr	<a href="http://fiverr.com">fiverr.com</a>	9/24/2014	Scrolling fast forces site to re-render content	Visual/Presentation	No	No	No	Yes
Flickr	<a href="http://flickr.com">flickr.com</a>	9/24/2014	Scrolling fast forces site to re-render content	Visual/Presentation	No	No	No	Yes
Forbes	<a href="http://forbes.com">forbes.com</a>	9/24/2014	Sluggish scrolling	Visual/Presentation	No	No	No	Yes
Fox News	<a href="http://foxnews.com">foxnews.com</a>	9/24/2014	None	None	No	No	No	No
GoDaddy	<a href="http://godaddy.com">godaddy.com</a>	9/24/2014	None	None	No	No	No	No
Google	<a href="http://google.com">google.com</a>	9/24/2014	None	None	No	No	No	No
Groupon	<a href="http://groupon.com">groupon.com</a>	9/24/2014	None	None	No	No	No	No
Home Depot	<a href="http://homedepot.com">homedepot.com</a>	9/24/2014	Scrolling fast forces site to re-render content	Visual/Presentation	No	No	No	Yes
Hootsuite	<a href="http://hootsuite.com">hootsuite.com</a>	9/24/2014	None	None	No	No	No	No
HostGator	<a href="http://hostgator.com">hostgator.com</a>	9/24/2014	None	None	No	No	No	No
Huffington Post	<a href="http://huffingtonpost.com">huffingtonpost.com</a>	9/24/2014	Scrolling fast forces site to re-render content	Visual/Presentation	No	No	No	Yes
Hulu	<a href="http://hulu.com">hulu.com</a>	9/24/2014	None	None	No	No	No	No
IMDB	<a href="http://imdb.com">imdb.com</a>	9/24/2014	None	None	No	No	No	No
Imgur	<a href="http://imgur.com">imgur.com</a>	9/24/2014	Scrolling fast forces site to re-render content	Visual/Presentation	No	No	No	Yes
Indeed	<a href="http://indeed.com">indeed.com</a>	9/24/2014	None	None	No	No	No	No
Infusion Software	<a href="http://infusionsoft.com">infusionsoft.com</a>	9/24/2014	None	None	No	No	No	No
Instagram	<a href="http://instagram.com">instagram.com</a>	9/24/2014	Scrolling fast forces site to re-render content	Visual/Presentation	No	No	No	Yes
			Sluggish scrolling	Visual/Presentation	No	No	No	Yes

LinkedIn	<a href="http://linkedin.com">linkedin.com</a>	9/24/2014	None	None	No	No	No	No
Live	<a href="http://live.com">live.com</a>	9/24/2014	None	None	No	No	No	No
MailChimp	<a href="http://mailchimp.com">mailchimp.com</a>	9/24/2014	None	None	No	No	No	No
Mashable	<a href="http://mashable.com">mashable.com</a>	9/24/2014	Scrolling fast forces site to re-render content	Visual/Presentation	No	No	No	Yes
			Sluggish swipe transitions	Visual/Presentation	No	No	No	Yes
MeetUp	<a href="http://meetup.com">meetup.com</a>	9/24/2014	None	None	No	No	No	No
Microsoft	<a href="http://microsoft.com">microsoft.com</a>	9/24/2014	Sluggish menu animations	Visual/Presentation	No	No	No	Yes
MLB	<a href="http://mlb.com">mlb.com</a>	9/24/2014	None	None	No	No	No	No
MSN	<a href="http://msn.com">msn.com</a>	9/24/2014	None	None	No	No	No	No
Netflix	<a href="http://netflix.com">netflix.com</a>	9/25/2014	None	None	No	No	No	No
NFL	<a href="http://nfl.com">nfl.com</a>	9/25/2014	Scrolling fast forces site to re-render content	Visual/Presentation	No	No	No	Yes
New York Times	<a href="http://nytimes.com">nytimes.com</a>	9/25/2014	Sluggish menu animations	Visual/Presentation	No	No	No	Yes
Outbrain	<a href="http://outbrain.com">outbrain.com</a>	9/25/2014	None	None	No	No	No	No
PayPal	<a href="http://paypal.com">paypal.com</a>	9/25/2014	None	None	No	No	No	No
Pinterest	<a href="http://pinterest.com">pinterest.com</a>	9/25/2014	None	None	No	No	No	No
Reddit	<a href="http://reddit.com">reddit.com</a>	9/25/2014	Scrolling fast forces site to re-render content	Visual/Presentation	No	No	No	Yes
Reference	<a href="http://reference.com">reference.com</a>	9/25/2014	None	None	No	No	No	No
Sales Force	<a href="http://salesforce.com">salesforce.com</a>	9/25/2014	None	None	No	No	No	No
Stack Exchange	<a href="http://stackexchange.com">stackexchange.com</a>	9/25/2014	None	None	No	No	No	No
Stack Overflow	<a href="http://stackoverflow.com">stackoverflow.com</a>	9/25/2014	None	None	No	No	No	No
StumbleUpon	<a href="http://stumbleupon.com">stumbleupon.com</a>	9/25/2014	None	None	No	No	No	No
Target	<a href="http://target.com">target.com</a>	9/25/2014	Sluggish menu animations	Visual/Presentation	No	No	No	Yes
Theme Forest	<a href="http://themeforest.net">themeforest.net</a>	9/25/2014	None	None	No	No	No	No
TMZ	<a href="http://tmz.com">tmz.com</a>	9/25/2014	Scrolling fast forces site to re-render content	Visual/Presentation	No	No	No	Yes
Trip Advisor	<a href="http://tripadvisor.com">tripadvisor.com</a>	9/25/2014	None	None	No	No	No	No

Trulia	<a href="http://trulia.com">trulia.com</a>	9/25/2014	None	None	No	No	No	No
Tumblr	<a href="http://tumblr.com">tumblr.com</a>	9/25/2014	None	None	No	No	No	No
Twitter	<a href="http://twitter.com">twitter.com</a>	9/25/2014	Scrolling fast forces site to re-render content	Visual/Presentation	No	No	No	Yes
UPS	<a href="http://ups.com">ups.com</a>	9/25/2014	None	None	No	No	No	No
USA Today	<a href="http://usatoday.com">usatoday.com</a>	9/25/2014	None	None	No	No	No	No
USPS	<a href="http://usps.com">usps.com</a>	9/25/2014	None	None	No	No	No	No
Verizon Wireless	<a href="http://verizonwireless.com">verizonwireless.com</a>	9/26/2014	Scrolling fast forces site to re-render content	Visual/Presentation	No	No	No	Yes
Vimeo	<a href="http://vimeo.com">vimeo.com</a>	9/25/2014	Scrolling fast forces site to re-render content	Visual/Presentation	No	No	No	Yes
W3Schools	<a href="http://w3schools.com">w3schools.com</a>	9/25/2014	None	None	No	No	No	No
Walmart	<a href="http://walmart.com">walmart.com</a>	9/25/2014	None	None	No	No	No	No
Wall Street Journal	<a href="http://wsj.com">wsj.com</a>	9/25/2014	None	None	No	No	No	No
Washington Post	<a href="http://washingtonpost.com">washingtonpost.com</a>	9/25/2014	Scrolling fast forces site to re-render content	Visual/Presentation	No	No	No	Yes
Weather	<a href="http://weather.com">weather.com</a>	9/25/2014	Scrolling fast forces site to re-render content	Visual/Presentation	No	No	No	Yes
Wells Fargo	<a href="http://wellsfargo.com">wellsfargo.com</a>	9/25/2014	Sluggish carousel transitions	Visual/Presentation	No	No	No	Yes
Wikia	<a href="http://wikia.com">wikia.com</a>	9/25/2014	None	None	No	No	No	No
WikiHow	<a href="http://wikihow.com">wikihow.com</a>	9/25/2014	Sluggish slideshow transitions	Visual/Presentation	No	No	No	Yes
Wikipedia	<a href="http://wikipedia.org">wikipedia.org</a>	9/25/2014	None	None	No	No	No	No
Wordpress	<a href="http://wordpress.com">wordpress.com</a>	9/25/2014	None	None	No	No	No	No
Yahoo	<a href="http://yahoo.com">yahoo.com</a>	9/25/2014	Scrolling fast forces site to re-render content	Visual/Presentation	No	No	No	Yes
Yelp	<a href="http://yelp.com">yelp.com</a>	9/25/2014	None	None	No	No	No	No
YouTube	<a href="http://youtube.com">youtube.com</a>	9/25/2014	None	None	No	No	No	No

Zedo	<a href="http://zedo.com">zedo.com</a>	9/25/2014	Scrolling fast forces site to re-render content	Visual/Presentation	No	No	No	Yes
Zillow	<a href="http://zillow.com">zillow.com</a>	9/25/2014	None	None	No	No	No	No

Figure 5: Detailed problems of each Web site experienced by tested devices.

## APPENDIX E – WEB PAGE LOAD TIMES

Figure 6 lists the Web sites we visited and median load times for each tablet.

Site Name	Domain	Median Web Page Load Time (in seconds)			
		ASUS FonePad 7	ASUS MeMO Pad 7	Lenovo A3500	Samsung Galaxy Tab 4 7.0
ABC News	<a href="http://abcnews.go.com">abcnews.go.com</a>	6.75	4.28	5.73	6.99
About	<a href="http://about.com">about.com</a>	2.98	2.75	4.45	4.79
Adobe	<a href="http://adobe.com">adobe.com</a>	5.11	4.65	6.53	7.64
Amazon	<a href="http://amazon.com">amazon.com</a>	3.35	3.97	4.86	5.08
Amazon AWS	<a href="http://amazonaws.com">amazonaws.com</a>	4.66	4.00	5.43	7.02
American Express	<a href="http://americanexpress.com">americanexpress.com</a>	2.75	2.82	3.66	4.47
Answers	<a href="http://answers.com">answers.com</a>	5.21	4.50	6.12	7.94
AOL	<a href="http://aol.com">aol.com</a>	7.31	5.57	8.00	10.24
Apple	<a href="http://apple.com">apple.com</a>	2.56	2.09	2.26	3.18
Ask	<a href="http://ask.com">ask.com</a>	3.08	4.06	5.48	7.14
AT&T	<a href="http://att.com">att.com</a>	7.00	6.31	7.38	10.60
AWeber	<a href="http://aweber.com">aweber.com</a>	3.21	2.82	3.43	4.76
Bank of America	<a href="http://bankofamerica.com">bankofamerica.com</a>	4.26	5.03	5.93	7.03
Best Buy	<a href="http://bestbuy.com">bestbuy.com</a>	3.95	4.40	6.80	6.84
Bing	<a href="http://bing.com">bing.com</a>	2.76	2.47	2.81	3.34
Bleacher Report	<a href="http://bleacherreport.com">bleacherreport.com</a>	7.51	6.56	8.33	10.44
Blogger	<a href="http://blogger.com">blogger.com</a>	3.38	3.29	3.95	4.68
Business Insider	<a href="http://businessinsider.com">businessinsider.com</a>	3.41	3.66	4.78	5.28
BuzzFeed	<a href="http://buzzfeed.com">buzzfeed.com</a>	5.93	5.94	8.58	10.09
Capital One	<a href="http://capitalone.com">capitalone.com</a>	3.43	2.91	3.60	4.49
Chase	<a href="http://chase.com">chase.com</a>	4.68	6.03	5.70	5.33
CNet	<a href="http://cnet.com">cnet.com</a>	5.63	5.15	7.10	8.49
CNN	<a href="http://cnn.com">cnn.com</a>	7.25	8.28	10.55	12.06
Comcast	<a href="http://comcast.net">comcast.net</a>	4.23	9.50	10.73	17.59
Constant Contact	<a href="http://constantcontact.com">constantcontact.com</a>	4.46	4.47	5.00	6.71
Craigslist	<a href="http://craigslist.org">craigslist.org</a>	2.01	2.46	2.45	2.79
Dailymail	<a href="http://dailymail.co.uk">dailymail.co.uk</a>	15.28	22.72	22.70	26.51
DeviantArt	<a href="http://deviantart.com">deviantart.com</a>	4.61	5.19	6.35	7.79
Disney Go	<a href="http://go.com">go.com</a>	3.24	3.81	4.76	7.08
Dropbox	<a href="http://dropbox.com">dropbox.com</a>	5.18	6.13	7.15	8.84
Drudge Report	<a href="http://drudgereport.com">drudgereport.com</a>	6.78	8.03	10.25	7.96
eBay	<a href="http://ebay.com">ebay.com</a>	3.58	4.34	5.63	6.85
ESPN Go	<a href="http://espn.go.com">espn.go.com</a>	5.75	4.43	5.06	6.34

Etsy	<a href="https://etsy.com">etsy.com</a>	3.34	3.22	4.13	5.55
Facebook	<a href="https://facebook.com">facebook.com</a>	7.18	6.65	7.58	8.31
FedEx	<a href="https://fedex.com">fedex.com</a>	2.40	5.32	5.98	8.33
Fiverr	<a href="https://fiverr.com">fiverr.com</a>	4.51	5.32	6.43	8.81
Flickr	<a href="https://flickr.com">flickr.com</a>	5.53	6.75	6.53	9.29
Forbes	<a href="https://forbes.com">forbes.com</a>	7.28	11.81	16.55	20.81
Fox News	<a href="https://foxnews.com">foxnews.com</a>	5.81	5.88	8.68	10.78
GoDaddy	<a href="https://godaddy.com">godaddy.com</a>	4.05	5.07	5.78	8.38
Google	<a href="https://google.com">google.com</a>	1.70	2.06	2.51	2.99
Groupon	<a href="https://groupon.com">groupon.com</a>	2.93	3.31	3.70	4.99
Home Depot	<a href="https://homedepot.com">homedepot.com</a>	2.55	3.56	3.90	4.12
HootSuite	<a href="https://hootsuite.com">hootsuite.com</a>	3.20	3.66	4.93	4.28
HostGator	<a href="https://hostgator.com">hostgator.com</a>	2.15	2.81	3.38	4.21
Huffington Post	<a href="https://huffingtonpost.com">huffingtonpost.com</a>	13.32	12.62	16.99	22.06
Hulu	<a href="https://hulu.com">hulu.com</a>	5.83	4.87	7.93	9.57
IMDB	<a href="https://imdb.com">imdb.com</a>	4.73	5.88	6.40	8.07
Imgur	<a href="https://imgur.com">imgur.com</a>	3.45	3.60	3.95	5.80
Indeed	<a href="https://indeed.com">indeed.com</a>	1.18	1.50	1.31	1.87
Infusion Software	<a href="https://infusionsoft.com">infusionsoft.com</a>	5.98	5.75	6.67	9.57
Instagram	<a href="https://instagram.com">instagram.com</a>	6.91	8.44	7.63	15.23
LinkedIn	<a href="https://linkedin.com">linkedin.com</a>	3.55	4.37	5.75	6.12
Live	<a href="https://live.com">live.com</a>	3.45	4.06	3.85	4.78
MailChimp	<a href="https://mailchimp.com">mailchimp.com</a>	1.91	2.00	2.00	2.53
Mashable	<a href="https://mashable.com">mashable.com</a>	7.35	8.94	8.93	10.21
MeetUp	<a href="https://meetup.com">meetup.com</a>	3.44	4.22	4.60	6.66
Microsoft	<a href="https://microsoft.com">microsoft.com</a>	2.97	3.65	4.61	6.11
MLB	<a href="https://mlb.com">mlb.com</a>	2.96	5.41	5.40	6.55
MSN	<a href="https://msn.com">msn.com</a>	3.20	6.40	8.35	10.06
Netflix	<a href="https://netflix.com">netflix.com</a>	3.05	3.83	2.08	4.58
NFL	<a href="https://nfl.com">nfl.com</a>	10.72	12.56	17.70	15.38
NYTimes	<a href="https://nytimes.com">nytimes.com</a>	4.11	6.37	7.07	9.20
Outbrain	<a href="https://outbrain.com">outbrain.com</a>	4.05	3.81	4.68	5.28
PayPal	<a href="https://paypal.com">paypal.com</a>	4.76	5.15	5.77	7.18
Pinterest	<a href="https://pinterest.com">pinterest.com</a>	6.06	6.34	6.97	6.71
Reddit	<a href="https://reddit.com">reddit.com</a>	2.73	2.69	3.77	3.95
Reference	<a href="https://reference.com">reference.com</a>	2.93	3.19	4.01	4.46
Sales Force	<a href="https://salesforce.com">salesforce.com</a>	3.90	5.00	7.83	5.56
Stack Exchange	<a href="https://stackexchange.com">stackexchange.com</a>	1.56	2.94	2.56	3.38
Stack Overflow	<a href="https://stackoverflow.com">stackoverflow.com</a>	2.58	2.31	3.04	3.10

StumbleUpon	<a href="http://stumbleupon.com">stumbleupon.com</a>	3.18	3.03	4.09	4.48
Target	<a href="http://target.com">target.com</a>	3.83	4.31	5.19	5.90
Theme Forest	<a href="http://themeforest.net">themeforest.net</a>	2.85	2.94	3.64	4.09
TMZ	<a href="http://tmz.com">tmz.com</a>	15.63	18.46	25.60	30.66
Trip Advisor	<a href="http://tripadvisor.com">tripadvisor.com</a>	5.76	6.22	8.41	9.91
Trulia	<a href="http://trulia.com">trulia.com</a>	2.98	4.56	4.00	5.33
Tumblr	<a href="http://tumblr.com">tumblr.com</a>	6.73	7.47	8.69	10.48
Twitter	<a href="http://twitter.com">twitter.com</a>	5.60	5.25	6.20	7.67
UPS	<a href="http://ups.com">ups.com</a>	3.26	3.78	4.49	5.74
USA Today	<a href="http://usatoday.com">usatoday.com</a>	2.70	4.54	4.06	6.09
USPS	<a href="http://usps.com">usps.com</a>	0.83	1.29	1.17	1.54
Verizon Wireless	<a href="http://verizonwireless.com">verizonwireless.com</a>	6.88	8.10	8.41	12.73
Vimeo	<a href="http://vimeo.com">vimeo.com</a>	6.06	5.29	5.99	6.96
W3Schools	<a href="http://w3schools.com">w3schools.com</a>	1.50	2.00	2.18	2.88
Wal-Mart	<a href="http://walmart.com">walmart.com</a>	7.53	8.45	10.64	14.09
Wall Street Journal	<a href="http://wsj.com">wsj.com</a>	10.58	17.00	14.87	18.34
Washington Post	<a href="http://washingtonpost.com">washingtonpost.com</a>	9.57	14.69	17.90	20.76
Weather	<a href="http://weather.com">weather.com</a>	4.80	7.75	6.37	8.92
Wells Fargo	<a href="http://wellsfargo.com">wellsfargo.com</a>	3.15	3.90	3.27	4.94
Wikia	<a href="http://wikia.com">wikia.com</a>	5.69	7.44	9.17	11.45
WikiHow	<a href="http://wikihow.com">wikihow.com</a>	2.80	4.09	4.04	9.43
Wikipedia	<a href="http://wikipedia.org">wikipedia.org</a>	1.30	1.56	1.60	2.10
Wordpress	<a href="http://wordpress.com">wordpress.com</a>	2.41	2.28	2.72	3.66
Yahoo	<a href="http://yahoo.com">yahoo.com</a>	3.90	3.84	8.03	5.24
Yelp	<a href="http://yelp.com">yelp.com</a>	2.43	1.72	3.37	3.93
YouTube	<a href="http://youtube.com">youtube.com</a>	2.53	3.00	3.53	4.00
Zedo	<a href="http://zedo.com">zedo.com</a>	6.23	6.97	8.01	9.91
Zillow	<a href="http://zillow.com">zillow.com</a>	3.50	5.37	7.41	8.25

Figure 6: Load times of each Web site for tested devices.



## ABOUT PRINCIPLED TECHNOLOGIES



Principled Technologies, Inc.  
1007 Slater Road, Suite 300  
Durham, NC, 27703  
[www.principledtechnologies.com](http://www.principledtechnologies.com)

We provide industry-leading technology assessment and fact-based marketing services. We bring to every assignment extensive experience with and expertise in all aspects of technology testing and analysis, from researching new technologies, to developing new methodologies, to testing with existing and new tools.

When the assessment is complete, we know how to present the results to a broad range of target audiences. We provide our clients with the materials they need, from market-focused data to use in their own collateral to custom sales aids, such as test reports, performance assessments, and white papers. Every document reflects the results of our trusted independent analysis.

We provide customized services that focus on our clients' individual requirements. Whether the technology involves hardware, software, Web sites, or services, we offer the experience, expertise, and tools to help our clients assess how it will fare against its competition, its performance, its market readiness, and its quality and reliability.

Our founders, Mark L. Van Name and Bill Catchings, have worked together in technology assessment for over 20 years. As journalists, they published over a thousand articles on a wide array of technology subjects. They created and led the Ziff-Davis Benchmark Operation, which developed such industry-standard benchmarks as Ziff Davis Media's Winstone and WebBench. They founded and led eTesting Labs, and after the acquisition of that company by Lionbridge Technologies were the head and CTO of VeriTest.

---

Principled Technologies is a registered trademark of Principled Technologies, Inc.  
All other product names are the trademarks of their respective owners.

---

**Disclaimer of Warranties; Limitation of Liability:**

PRINCIPLED TECHNOLOGIES, INC. HAS MADE REASONABLE EFFORTS TO ENSURE THE ACCURACY AND VALIDITY OF ITS TESTING, HOWEVER, PRINCIPLED TECHNOLOGIES, INC. SPECIFICALLY DISCLAIMS ANY WARRANTY, EXPRESSED OR IMPLIED, RELATING TO THE TEST RESULTS AND ANALYSIS, THEIR ACCURACY, COMPLETENESS OR QUALITY, INCLUDING ANY IMPLIED WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE. ALL PERSONS OR ENTITIES RELYING ON THE RESULTS OF ANY TESTING DO SO AT THEIR OWN RISK, AND AGREE THAT PRINCIPLED TECHNOLOGIES, INC., ITS EMPLOYEES AND ITS SUBCONTRACTORS SHALL HAVE NO LIABILITY WHATSOEVER FROM ANY CLAIM OF LOSS OR DAMAGE ON ACCOUNT OF ANY ALLEGED ERROR OR DEFECT IN ANY TESTING PROCEDURE OR RESULT.

IN NO EVENT SHALL PRINCIPLED TECHNOLOGIES, INC. BE LIABLE FOR INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH ITS TESTING, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO EVENT SHALL PRINCIPLED TECHNOLOGIES, INC.'S LIABILITY, INCLUDING FOR DIRECT DAMAGES, EXCEED THE AMOUNTS PAID IN CONNECTION WITH PRINCIPLED TECHNOLOGIES, INC.'S TESTING. CUSTOMER'S SOLE AND EXCLUSIVE REMEDIES ARE AS SET FORTH HEREIN.

---