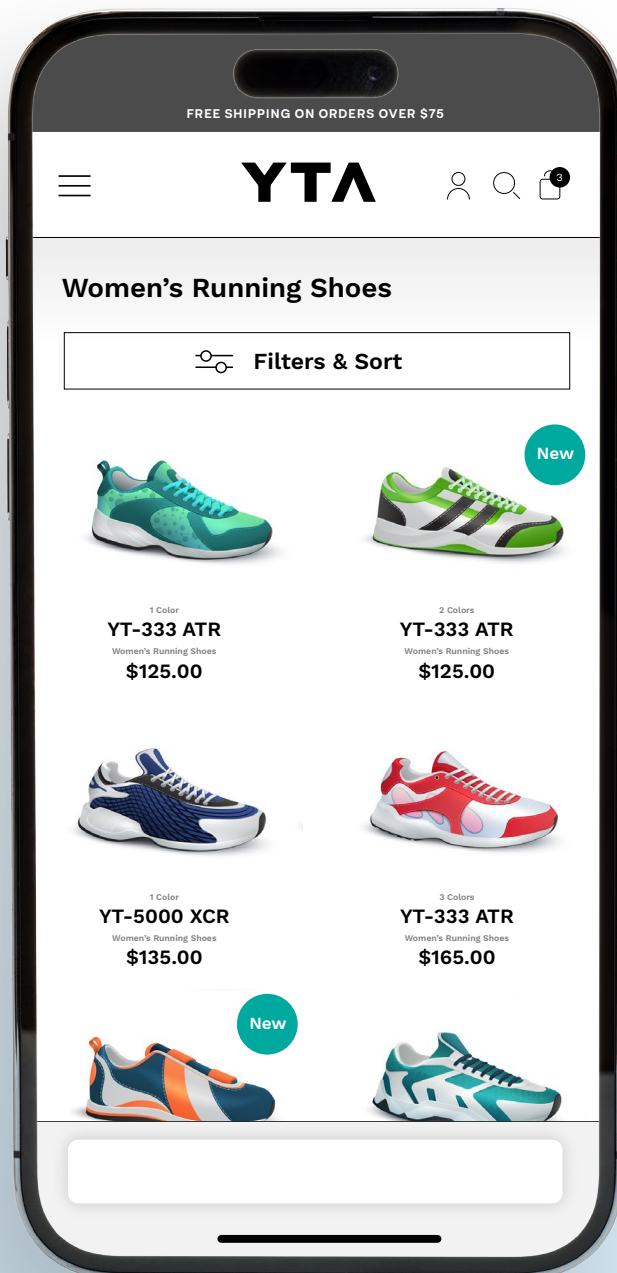


# YOTTAA

## 2024 Annual eCommerce Tech Buyers' Guide



Site Performance  
Impact Ratings for  
600+ Third Party  
Technologies

Performance  
Impact by  
Page Types

20+ Categories  
Ranked According  
to LCP Impact

**New!** Expanded  
Coverage of  
Core Web Vitals

GOOD

NEEDS IMPROVEMENT

POOR

Shouts for consolidation of the technology stack rang through the eCommerce ecosystem in 2023. It was going to be a reckoning - brands and retailers would discard droves of third party technologies, in the name of cost savings. But, the purge never materialized.

Reports of eCommerce apps' demise were greatly exaggerated.

Instead, third party technologies remain central to the shopping experience, a critical element of the eCommerce stack. Ecommerce platforms continue to nurture their app ecosystems to support merchant growth across the entire shopper journey, and sites continue to adopt third party tech. 39% of sites have the same or more third party technologies in their tech stack compared with a year ago. On average, 51 third party technologies can be found on a product detail page, and category pages and home pages host nearly as many.

Despite the promises of traffic and conversion rate gains, there's a darker side of app adoption that must be considered. For every technology integrated, there's potential for the third party to slow page loads. Left unchecked, third party technologies stifle site performance, and slow page loads mean more bounces and lower conversions.

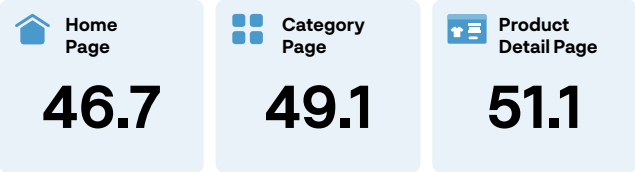
And, as the industry has matured, there is an increased appreciation for site speed. Thanks in large part to Google's continued emphasis and support of Web Vitals, we now share a more widely accepted measurement for page load speed: Largest Contentful Paint (LCP). LCP provides a user-centric measure of page load and experience, and is one of the many factors that is considered for search ranking.

With brands battling to overcome declining traffic and rising ad spend, site speed and performance has become more valuable than ever. There's no faster way to waste a visit than slow page loads.

This year's eCommerce Tech Buyers' Guide analyzes the impact that third party technologies have on eCommerce site performance, with a focus on the widely adopted page performance metric, Largest Contentful Paint.

### 39% of sites have the same or more third party technologies

THIRD PARTIES PER PAGE



### 63% of shoppers bounce on pages that take more than 4 seconds to load.<sup>1</sup>

<sup>1</sup>Source: Site Speed Standard

### There's no faster way to waste a visit than slow page loads.



**Rick Kenney**  
Managing Director  
Leading Lights



# About the Report

The eCommerce Tech Buyer's Guide Index is published annually to provide ecommerce brands and merchants an objective view on the impact that third party technologies have on site speed and performance. YOTTAA tracks, monitors, and optimizes the performance of more than 2,000 eCommerce sites. The eCommerce Tech Buyer's Guide Index benchmarks the optimized performance of the most adopted third parties across the YOTTAA community of eCommerce websites.

## MEASURING THE IMPACT OF THIRD PARTIES

**650**

THIRD PARTY  
TECHNOLOGIES

**30**

THIRD-PARTY  
TECHNOLOGY  
CATEGORIES

**14**

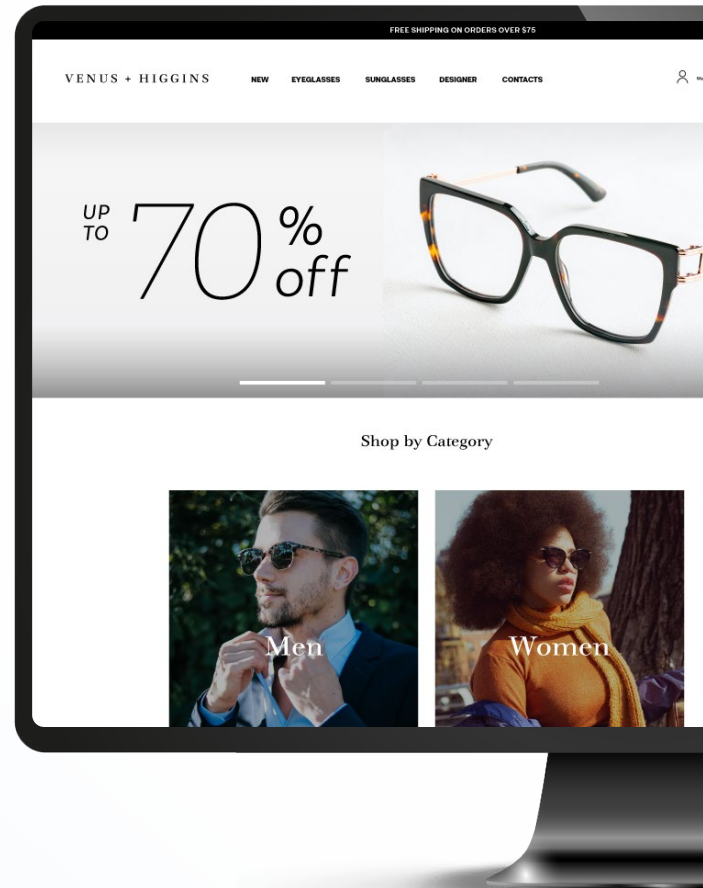
BILLION +  
PAGE VIEWS

These insights were drawn from eCommerce activity during December 2023. Each third party included was live on at least 12 ecommerce websites during the analysis period. Additional activity minimums are considered for aggregation.

### Full Performance Impact Ratings Index

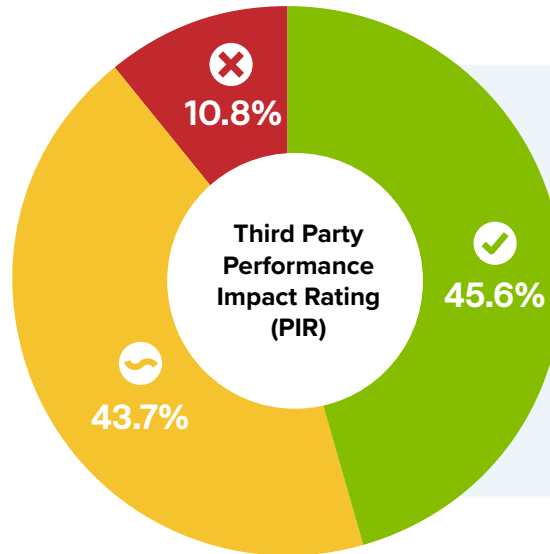
Each third party in this index earns a Performance Impact Rating (PIR) that measures the performance impact of a third party on an eCommerce website. The PIR is the truest measure of a third party's performance impact on site speed, and the shopper experience. [Read more](#) about PIR score.

[SEE THE FULL PIR OF INDIVIDUAL THIRD PARTIES](#)



# Fast Findings

Here are the key stats we discovered - we'll analyze this data further in the report.



- Represents little or no performance impact
- Represents an inconsistent negative performance impact
- Represents a consistent negative impact on performance

## Third Party Impact on LCP



## Category Impact on LCP



**398 ms**  
Image Hosting



**230 ms**  
CMS



**137 ms**  
UGC and Customer Reviews

## Page Delay Violations



31% of third parties delay *at least one* page resource per page load

### VIOLATIONS PER PAGE TYPE LOADED



**2.6**



**1.5**



**1.5**



Page Delay Violations are individual errors that occur when a single third party extends the time it takes for a shopper to be able to interact with a site.

# Third parties reduced their impact, but still cause significant delays

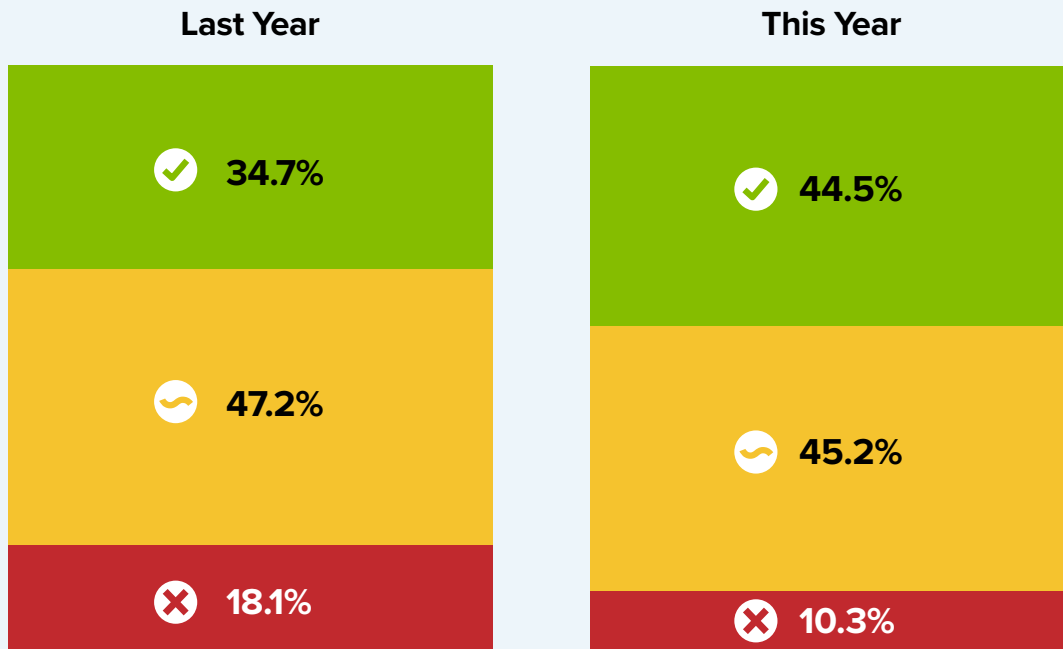
This first view of this year's data compares third parties PIR scores YoY. Most applications earned slightly better PIR scores in 2023, migrating from a red score to a yellow score.


Newly tracked third parties avoided the dreaded red ranking almost unanimously, most ranking as green.


This trend away from red signals eCommerce maturity - third parties are getting better and mitigating their impact on page performance.


With over half of third parties in the yellow and red, there's still a long way to go.

## Change in performance impact ranking (PIR), year-over-year



 Represents little or no performance impact

 Represents an inconsistent negative performance impact

 Represents a consistent negative impact on performance

The PIR is calculated by adding a third party's performance violations and the delay page load violations together and then dividing by the total number of resources loaded by the third party across the site.

# Industry data: 3 of 4 sites are missing Google's benchmark for LCP

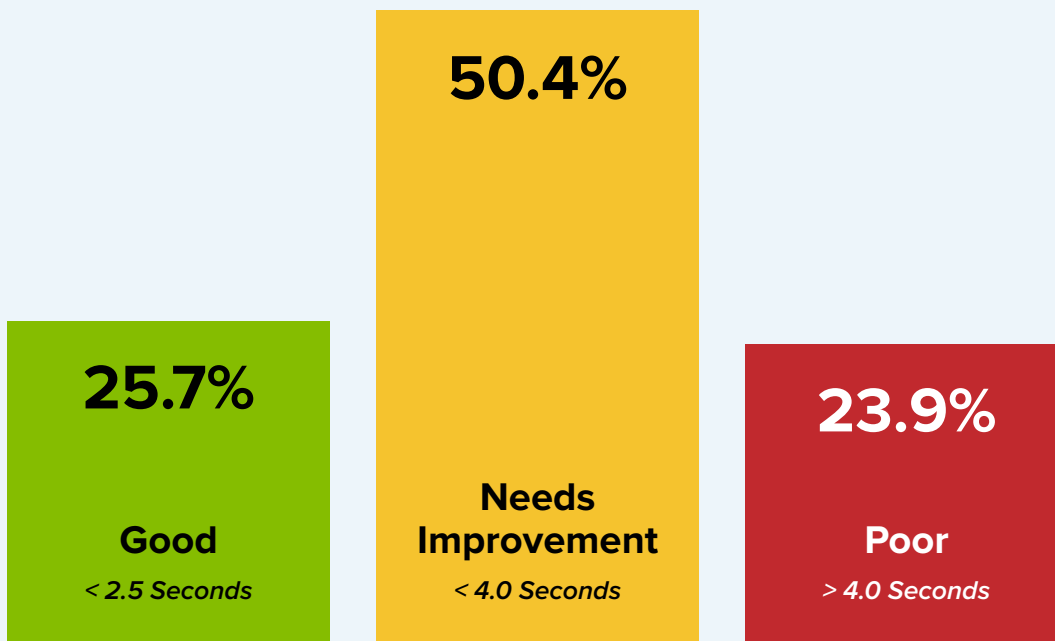
When Google ushered in Core Web Vitals, digital commerce teams had to reframe their site performance benchmarks and strategies to meet these new standards.

One metric, Largest Contentful Paint (LCP), best measures the time it takes for a page to load, through the eyes of the visitor and has become a key site performance metric.

Sites continue to struggle to meet the benchmark for 'good' with nearly 75% of sites in the "Needs Improvement" or "Poor" buckets.

Most sites have significant room for improvement of their LCP.

Percentage of eCommerce sites that are meeting or missing the LCP performance benchmark



### What is Largest Contentful Paint (LCP)?

One of Google's primary Core Web Vitals, LCP measures how long it takes for the largest visible image or text block to load.

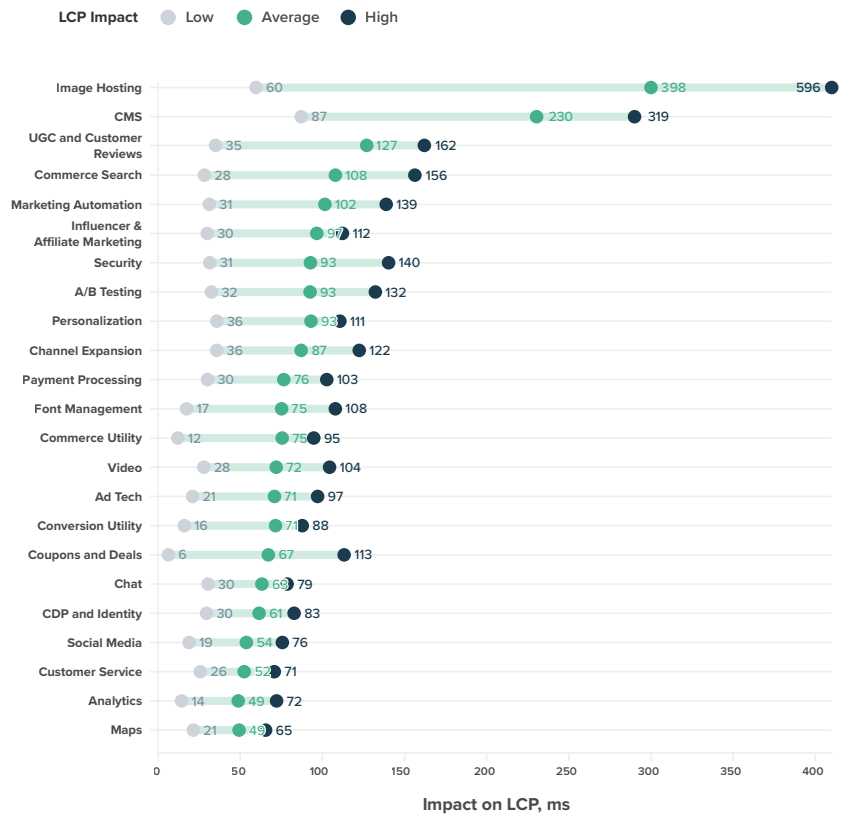
## Third party performance varies across categories

Third party performance is a significant contributor to LCP time, and varies quite dramatically across tech categories.

This chart reveals the average impact to expect from third-parties across different categories, and how wide of a range of impact there can be. Higher impact values - measured in milliseconds - indicate longer page load delays.

Some apps that make a material impact on your site are also the heaviest burden. CMS and image hosting are two examples - they're impactful, but the experience you're delivering is worth it.

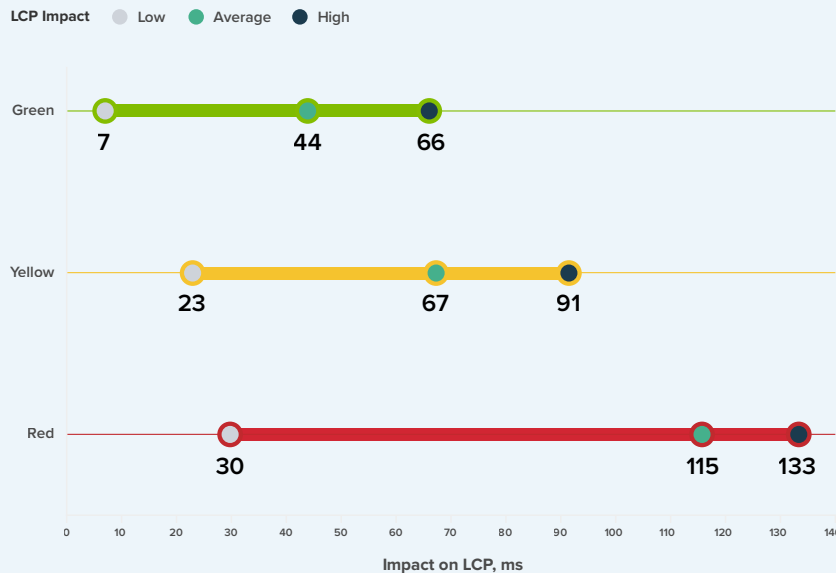
**When left unoptimized, heavier third parties can have a material impact on LCP.**



## Death by a thousand... apps?

With sites carrying 51 third party technologies, the page performance impact contributed by third parties adds up quickly. Even just a few high-impact third parties can shift your LCP ranking significantly.

Third parties that earned 'Green' PIR scores have a near-negligible effect on LCP time (44m) but apps in Red average 115ms of impact.

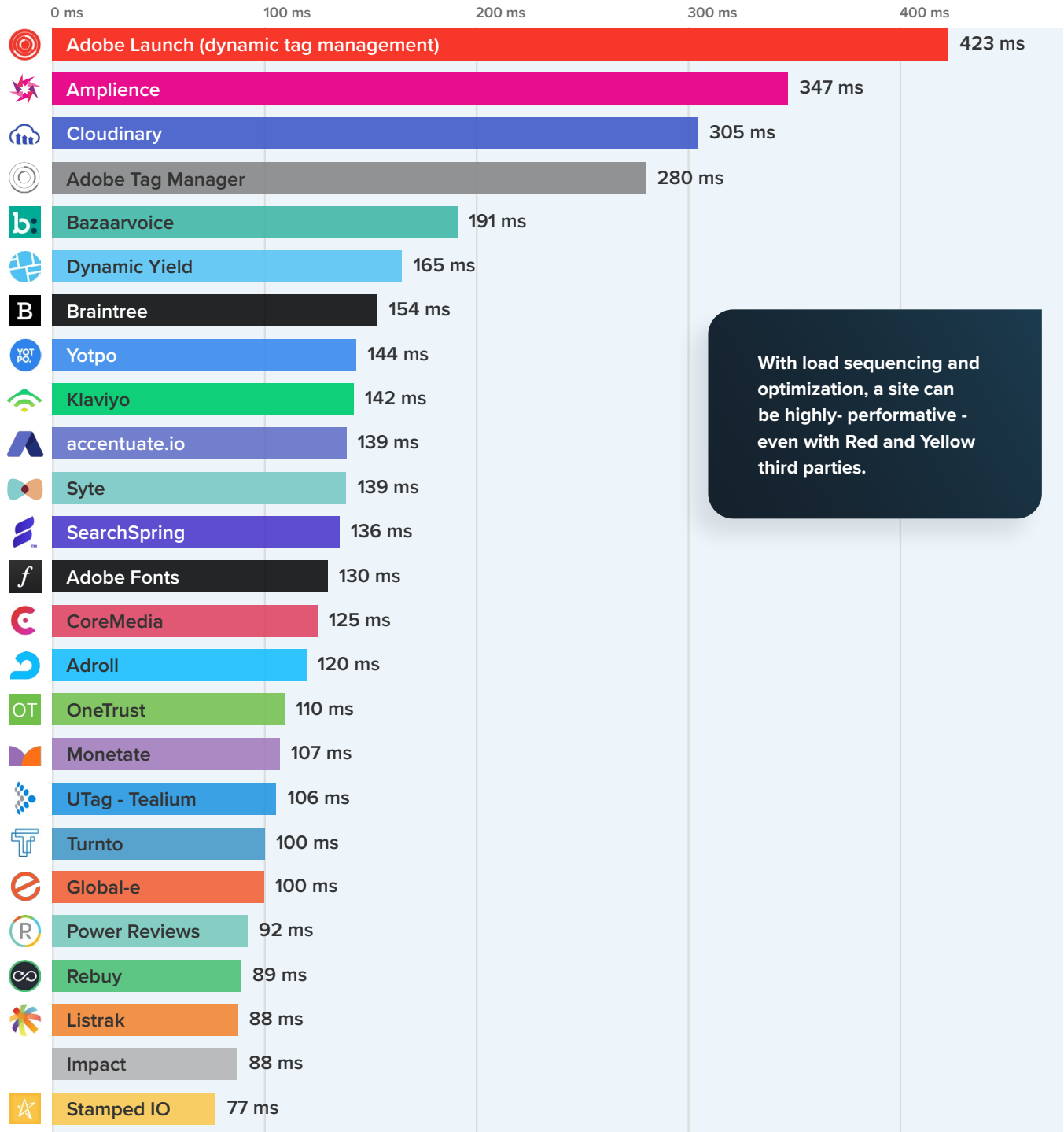


**Deploying apps with a Red PIR score can mean the difference between what Google considers Good and Needs Improvement.**

# Most damaging third parties by LCP impact

Third party apps that expand beyond 75ms - or 3% of LCP time - are shining examples of the importance of load sequencing and optimization. LCP performance varies across the journey, and as such ecommerce teams must measure and optimize each page type to meet the benchmark and deliver an excellent shopping experience.

Here are the third parties that have the most impact on LCP.





# Page delay violations are happening across the journey

A **page delay violation** is a material delay caused by a third party that impacts the shopper's experience. Yottaa data revealed these violations are happening far too frequently. And worse, third parties can fail to load entirely, creating an experience gap for the shopper, and missed benefit for the site.

Red third parties create 5x the violations on a product detail page than the Green third parties, and nearly 10x the number of violations on home pages.

With delays occurring at each stop along the shopper journey, sites are giving shoppers too many chances to bounce.

## Violations by page type

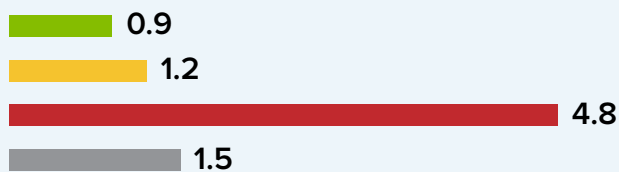
● Green Third Parties   ● Yellow Third Parties   ● Red Third Parties   ● Overall



### Category Page



### Product Detail Page



### Home Page

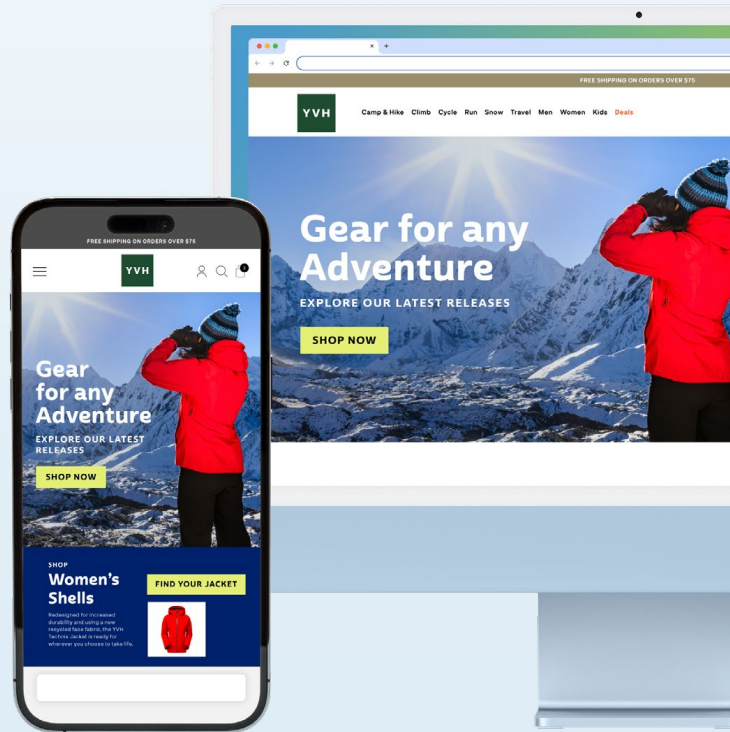


# Don't let disruptive tech become destructive tech.

Third party technologies. Apps. Tags. Cartridges. ISVs. We know them by many different names, but the aim is the same: to make our business better. Third parties promise a better experience, traffic gains, or simply operational efficiencies. And, with site traffic slipping and per-visit spend up, adding third parties can help eCommerce teams make the most of every visit.

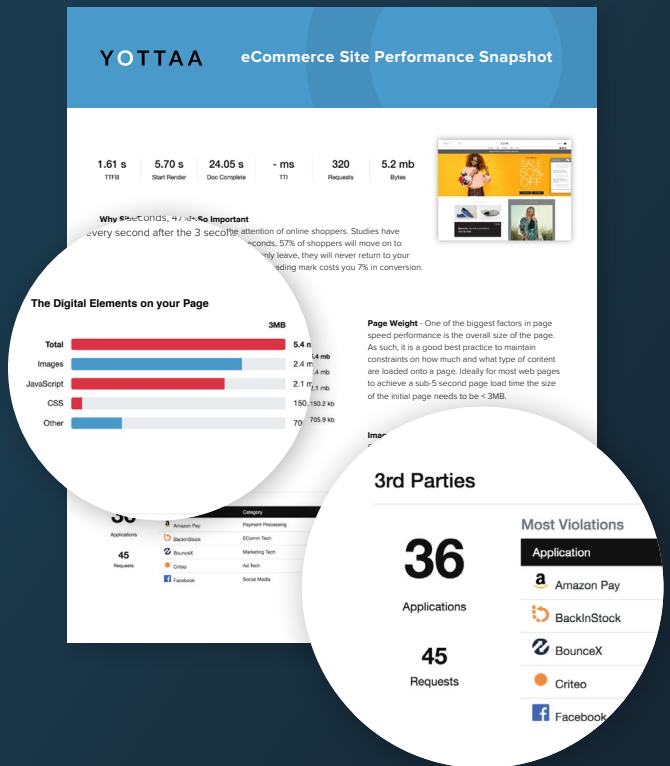
**But left unchecked and unoptimized, third parties can be destructive to the site experience.** The cumulative impact of dozens of third parties - and the marginal value of adding more - drags site performance, bounces shoppers, and lowers conversions.

The answer to optimizing site speed is not eliminating third parties, but optimizing the sequence of their load to deliver faster, more engaging experiences that drive greater digital revenue.



What impact does your tech stack have on LCP? And, what performance gain will you gain from optimizing?

Find out with a **Site Speed Snapshot™**





# YOTTAA

## Third Party Performance Impact Ratings

This set of third party technologies, listed alphabetically, represents the most adopted third parties across the YOTTAA community of sites during December 2023.



Represents a consistent negative impact on performance



Represents an inconsistent negative performance impact



Represents little or no performance impact































Third Party	Category	PIR Color	% of Sites
360	Security		6%
506	Conversion Utility		3%
33Across	Ad Tech		5%
4Cite	CDP and Identity		7%
A3Cloud	Ad Tech		2%
AB Tasty	A/B Testing		4%
accentuate.io	Commerce Utility		5%
accessiBe	Accessibility		13%
Ace Stream	Video		3%
Acoustic	Marketing Automation		2%
Ada	Chat		2%
AdAvoid	Ad Blocking		8%
Addshoppers	Ad Tech		1%
AddThis	UGC and Customer Reviews		8%
Adelphic	Ad Tech		1%
Adform	Ad Tech		2%
Adguard	Ad Blocking		27%
Adlucent	Ad Tech		2%
ADman Media	Ad Tech		2%
Admixer	Ad Tech		2%

Third Party	Category	PIR Color	% of Sites
Adobe Analytics	Analytics		10%
Adobe Analytics Beacon	Analytics		8%
Adobe Dynamic Media	Image Hosting		13%
Adobe Fonts	Font Management		31%
Adobe Marketing Cloud	Marketing Automation		33%
Adobe Tag Manager	Tag Management		17%
Adobe Test and Target	A/B Testing		2%
Adroll	Ad Tech		7%
Adstir	Ad Tech		1%
AdsWizz	Ad Tech		1%
Adtarget	Ad Tech		2%
AdXcel	Ad Tech		3%
Adyen	Payment Processing		7%
Affiliatly	Influencer and Affiliate Marketing		1%
Affirm	Payment Processing		14%
AfterPay	Payment Processing		16%
Aftership	Post Purchase		2%
Akamai mPulse	Rum Analytics		9%
Akamai Stats	Analytics		9%
Algolia	Commerce Search		7%
Amai	Conversion Utility		3%
Amazon Advertising	Ad Tech		11%
Amazon Pay	Payment Processing		18%
American Express	Payment Processing		2%
Amobee	Ad Tech		4%
AMP Project	Performance		1%
Amplience	CMS		2%
Amplitude	Analytics		16%
App Link	SEO Marketing		2%
AppMate Wishlist King	Conversion Utility		3%

Third Party	Category	PIR Color	% of Sites
Astute	Other		4%
AtData	Commerce Utility		7%
Atlassian	Customer Service		1%
Attentive	Marketing Automation		32%
Audience Rate	Ad Tech		2%
AudioEye	Accessibility		3%
Audiohook	Ad Tech		1%
Auryc	Analytics		2%
Authorize.net	Payment Processing		1%
Automizely	Commerce Utility		4%
Avada	Marketing Automation		2%
AvantLink	Influencer and Affiliate Marketing		4%
Avast SafePrice	Coupons and Deals - Browser Plugin		4%
AVG SafePrice	Coupons and Deals - Browser Plugin		2%
Avocet	Other		1%
Awin	Channel Expansion		12%
BabyList	Conversion Utility		5%
BackInStock	Conversion Utility		9%
Baidu	Search Engine		32%
Bambuser	Channel Expansion		2%
Bazaarvoice	UGC and Customer Reviews		22%
Beeswax	Ad Tech		4%
BeFrugal	Coupons and Deals - Browser Plugin		1%
BenefitHub	Coupons and Deals - Browser Plugin		2%
Better Business Bureau	Commerce Utility		1%
BidSwitch	Ad Tech		3%
Bidtellect	Ad Tech		2%
Bing Maps	Maps		68%
Bizrate Insights	Analytics		7%
Black Crow	Personalization		5%

Third Party	Category	PIR Color	% of Sites
Bliss point Media	Video		1%
Blocksi	Ad Blocking		2%
Bloomreach	Commerce Search		7%
Blue Triangle	Rum Analytics		2%
Bluecore	Marketing Automation		6%
Bold Commerce	Conversion Utility		5%
Bold360	Chat		2%
Bolt	Payment Processing		2%
Borderfree	Channel Expansion		2%
Braintree	Payment Processing		9%
Branch.io	Ad Tech		2%
BrandLock	Coupons and Deals - Browser Plugin		2%
Bravo Systems d.o.o.	Ad Tech		11%
Braze	Marketing Automation		5%
Bread	Payment Processing		1%
Bread Financial	Payment Processing		5%
Brightcove	Video		4%
Brightedge	SEO Marketing		3%
Bugsnag	Error Monitoring		32%
buySAFE	Commerce Utility		1%
CallRail	Analytics		1%
Capital Koala	Coupons and Deals - Browser Plugin		3%
Capital One	Payment Processing		10%
Capital One Shopping	Coupons and Deals - Browser Plugin		31%
Cardinal Commerce	Payment Processing		2%
Carro	Influencer and Affiliate Marketing		3%
Cart.com	Post Purchase		1%
Cartful Solutions	Conversion Utility		1%
Casale Media	Ad Tech		6%
Cently (Coupons at Checkout)	Coupons and Deals - Browser Plugin		3%































Third Party	Category	PIR Color	% of Sites
Centro	Ad Tech		2%
Certona	Personalization		3%
ChannelAdvisor	Channel Expansion		1%
Cheetah Digital	Marketing Automation		1%
Cirkleinc	Conversion Utility		1%
Ciuvo	Coupons and Deals - Browser Plugin		5%
Claritas	Analytics		3%
Clean.io	Security		1%
Click Cease	Ad Blocking		1%
Clicktale	Analytics		3%
Cloudinary	Image Hosting		12%
Cloudsponge	Influencer and Affiliate Marketing		1%
Code Blackbelt	Conversion Utility		3%
Commission factory	Influencer and Affiliate Marketing		1%
ConfigureID	Conversion Utility		3%
Connect Ad	Ad Tech		2%
Connexity	Ad Tech		4%
Contentsquare	Analytics		13%
Content Stack	CMS		4%
Contentful	CMS		2%
Conversant	Loyalty		18%
Convert	A/B Testing		5%
CookieBot	Security		2%
CookiePro	Security		3%
Cordial	Marketing Automation		4%
CoreMedia	CMS		1%
Coupert - Automatic Coupon Finder	Coupons and Deals - Browser Plugin		13%
Coupon Cabin	Coupons and Deals - Browser Plugin		7%
Coveo	Personalization		3%
Crazyegg	Analytics		7%

Third Party	Category	PIR Color	% of Sites
Criteo	Ad Tech		30%
Cross Sell	Personalization		2%
Curalate	UGC and Customer Reviews		12%
CustomerFields	Personalization		2%
Custora	CDP and Identity		1%
Cybba	Ad Tech		1%
Daily Karma	Coupons and Deals - Browser Plugin		1%
Dash Hudson	Influencer and Affiliate Marketing		3%
Datadog	APM		9%
Datadome	Security		20%
DataStream.io	Analytics		2%
dataxu	Ad Tech		3%
DealFinder by VoucherCodes	Coupons and Deals - Browser Plugin		3%
Decibel Insight	Analytics		1%
Demandbase	CDP and Identity		8%
Digicert	Commerce Utility		2%
Direction and Maps	Maps		9%
Disco	Conversion Utility		2%
Disqus	UGC and Customer Reviews		1%
DotDigital	Marketing Automation		1%
Dstillery	Ad Tech		3%
dxpapi.com	Commerce Search		2%
Dynamic Yield	Personalization		10%
Dynatrace	APM		2%
E-planning	Ad Tech		2%
eBay	Channel Expansion		2%
Elevar	Analytics		9%
Elfsight	Conversion Utility		3%
Emarsys	Marketing Automation		3%
Emojiis	Commerce Utility		2%































































Third Party	Category	PIR Color	% of Sites
EMX Digital	Ad Tech		3%
Enquire labs	Ad Tech		3%
Ensignten	Tag Management		2%
Epsilon	Marketing Automation		3%
EqualWeb	Accessibility		1%
Everest Tech	Development Testing		16%
Evergage	Personalization		4%
Experian Data Quality	CDP and Identity		4%
Exponea	CDP and Identity		1%
Extend	Conversion Utility		2%
Extole	Influencer and Affiliate Marketing		2%
Eyeota	Ad Tech		5%
Facebook	Social Media		94%
Fairing	Customer surveys		5%
Fast Simon formerly InstantSearch+	Commerce Search		3%
Fillr	Commerce Utility		28%
Fireworks	Conversion Utility		1%
FitAnalytics	Conversion Utility		2%
Five9	Chat		1%
Flash Talking	Ad Tech		4%
Flaticon	Font Management		1%
Flow	Channel Expansion		1%
Fluct	Ad Tech		1%
Font Awesome	Font Management		45%
Fonts by Hoefler & Co	Font Management		2%
Fonts.com	Font Management		26%
Foresee	Analytics		1%
FormStack	Commerce Utility		1%
Forter	Client-side Security		12%
FourSixty	Social Media		5%

Third Party	Category	PIR Color	% of Sites
FreeWheel	Ad Tech		3%
Freshworks Freshchat	Customer Service		2%
FriendBuy	Influencer and Affiliate Marketing		2%
Fullstory	Analytics		9%
GeistM	Ad Tech		1%
Giphy	Commerce Utility		1%
GitHub	Other		3%
Gladly	Customer Service		5%
Glassbox	Analytics		2%
Global Media	Other		4%
Global-e	Channel Expansion		8%
Globo	Conversion Utility		1%
Goaffpro	Ad Tech		1%
GoInStore	Conversion Utility		1%
Good Buy	Channel Expansion		2%
Google Ads	Ad Tech		95%
Google AMP	Performance		1%
Google Analytics Classic	Analytics		28%
Google Analytics Universal	Analytics		96%
Google APIs	Commerce Utility		41%
Google Cloud	Conversion Utility		18%
Google Customer Reviews	UGC and Customer Reviews		6%
Google Fonts	Font Management		94%
Google for Retail	Commerce Utility		1%
Google Maps	Maps		39%
Google Optimize	A/B Testing		17%
Google Pay	Payment Processing		30%
Google Plus	Social Media		1%
Google reCAPTCHA	Client-side Security		60%
Google Syndication	Ad Tech		54%

Third Party	Category	PIR Color	% of Sites
Google Tag Manager	Tag Management		100%
Google Translate	Commerce Utility		50%
Google Web Font Loader	Font Management		7%
Gorgias	Customer Service		12%
Govx	Coupons and Deals - Browser Plugin		1%
Gravatar	Commerce Utility		4%
Green Adblocker	Ad Blocking		1%
Greenhouse	Channel Expansion		1%
Grin	UGC and Customer Reviews		4%
GroupBy	Commerce Search		2%
GumGum	Analytics		2%
hCaptcha	Commerce Utility		2%
Heap	Analytics		3%
Help Scout	Customer Service		2%
HERO	Conversion Utility		2%
Heroku	Performance		14%
Hextom	Conversion Utility		4%
HiConversion	A/B Testing		1%
Hivewyre	Ad Tech		2%
Honey	Coupons and Deals - Browser Plugin		55%
Hotjar	Analytics		34%
Houzz	Social Media		3%
Hubspot	Marketing Automation		3%
Hubtype	Chat		1%
Hulk Apps	Conversion Utility		3%
lbotta browser extension	Coupons and Deals - Browser Plugin		18%
Icon Finder	Commerce Utility		1%
ID.me	CDP and Identity		13%
ID5	CDP and Identity		1%
iFrames	Commerce Utility		6%

Third Party	Category	PIR Color	% of Sites
ImgBB	Image Hosting		8%
ImgIX	Image Hosting		9%
Imgur	Image Hosting		2%
Impact	Other		13%
Improve Digital	Ad Tech		2%
Incart Upsell	Conversion Utility		1%
Infolinks	Ad Tech		2%
Inmoment	Conversion Utility		1%
Insider	Personalization		1%
Instagram	Social Media		33%
Intelligems	A/B Testing		1%
Intent IQ	CDP and Identity		6%
Intent.ly	Ad Tech		1%
Intercom	Chat		1%
InvisibleHand	Coupons and Deals - Browser Plugin		5%
Invoca	Other		1%
ip-api	Commerce Utility		4%
ipify	Commerce Utility		8%
Ipinfo	Commerce Utility		2%
Ipstack	Commerce Utility		1%
IsenseLabs	Conversion Utility		5%
iSpot.tv	Analytics		1%
iubenda	Commerce Utility		1%
Jebbit	Conversion Utility		1%
Jivox	Personalization		1%
JotForm	Commerce Utility		2%
JudgeMe	UGC and Customer Reviews		5%
Justuno	Conversion Utility		3%
Kaltura	Conversion Utility		8%
Kameleoon	A/B Testing		4%

Third Party	Category	PIR Color	% of Sites
Kargo	Ad Tech		3%
Karmanow	Coupons and Deals - Browser Plugin		10%
Kaspersky	Security		57%
Keen	Analytics		2%
Kiwi Sizing	Conversion Utility		2%
Klarna	Payment Processing		21%
Klaviyo	Marketing Automation		40%
Klevu	Commerce Search		3%
Klickly	Channel Expansion		1%
Kmail	Other		6%
KnoCommerce	Customer surveys		2%
Kount	Security		1%
Kudos	Coupons and Deals - Browser Plugin		4%
Kustomer	Customer Service		4%
LaunchDarkly	Development Testing		7%
Layer0	Security		1%
LexisNexis Risk Solutions	Security		5%
Lightbox	Conversion Utility		2%
Lightwidget	Social Media		1%
LimeSpot	Personalization		1%
Linc Global	Marketing Automation		2%
Line	Ad Tech		2%
LinkedIn	Social Media		10%
Listrak	Marketing Automation		8%
Littledata	Analytics		2%
Live Chat, Inc.	Chat		2%
LiveClicker	Marketing Automation		1%
LiveIntent	Ad Tech		12%
LivePerson	Chat		5%
LiveRamp	CDP and Identity		5%

Third Party	Category	PIR Color	% of Sites
Locally	Channel Expansion		3%
Logbase	Conversion Utility		1%
Loggly	Analytics		9%
loom	Commerce Utility		10%
Loop Returns	Post Purchase		3%
LoopMe	Marketing Automation		3%
Loox	UGC and Customer Reviews		2%
Loqate	CDP and Identity		7%
Lotame	Ad Tech		4%
Loyaltylion	Loyalty		4%
Lsdirect	Personalization		2%
Lucky Orange - Settings	Analytics		4%
Lytics	Analytics		2%
Mageworx	Conversion Utility		2%
Magic Toolbox Magic Zoom Plus	Conversion Utility		2%
Magnite	Ad Tech		3%
Mailchimp	Marketing Automation		5%
Mapbox	Maps		4%
Mapdirectionsfor	Maps		13%
Maptiler	Maps		1%
Mark Monitor	A/B Testing		25%
Marketo	Marketing Automation		1%
Mastercard Inc	Payment Processing		1%
Maxmind	Conversion Utility		3%
McAfee SECURE	Client-side Security		3%
Measured	Analytics		1%
Medallia	Chat		9%
Media.net	Ad Tech		9%
MediaMath	Ad Tech		3%
Mention Me	Influencer and Affiliate Marketing		2%

Third Party	Category	PIR Color	% of Sites
Merchant Yard	Native App		1%
Merkle	Analytics		6%
Metrical	Ad Tech		1%
MGID	Ad Tech		2%
Miaprova	A/B Testing		1%
MicroAd	Ad Tech		1%
Microsoft Translator	Commerce Utility		10%
MixPanel	Analytics		7%
MNTN	Ad Tech		7%
Modesens	Conversion Utility		4%
Monetate	Personalization		8%
Mouseflow	Analytics		2%
Moveable Ink	Personalization		8%
Moxie	Chat		1%
Moz	SEO Marketing		25%
MS Clarity	Analytics		41%
MSN	Browser		2%
Mulberry	Coupons and Deals - Browser Plugin		1%
Mux	Video		2%
MyRegistry.com	Conversion Utility		5%
Namogoo	Personalization		8%
Narrativ	Personalization		2%
Narvar	Post Purchase		3%
Netfree	Security		7%
NeuStar Ad Advisor	Ad Tech		9%
New Relic	APM		12%
Nextdoor	Social Media		1%
Nexus Media	Conversion Utility		1%
Nhn Cloud	Other		1%
NICE inContact	Customer Service		1%

Third Party	Category	PIR Color	% of Sites
Nofraud	Security		3%
Noibu	Error Monitoring		8%
Northbeam	Ad Tech		4%
Nosto	Personalization		6%
NTT Docomo	Other		2%
Obviyo	Conversion Utility		1%
Octane AI	Conversion Utility		3%
Octoshop	Coupons and Deals - Browser Plugin		1%
ojrq.net	Malware		7%
Okendo	UGC and Customer Reviews		6%
Olapic	UGC and Customer Reviews		2%
Ometria	CDP and Identity		1%
Omnisend	Marketing Automation		2%
Onetag	Ad Tech		2%
OneTrust	Security		32%
OpenX	Ad Tech		8%
Opera Software As	Ad Blocking		20%
Optimizely	A/B Testing		9%
Optimonk	Conversion Utility		1%
OptinMonster	Marketing Automation		1%
Oracle (Unknown)	Other		4%
Oracle BlueKai	Ad Tech		7%
Oracle Maxymiser	A/B Testing		2%
Oracle Responsys	Marketing Automation		3%
Oracle Service Cloud	Customer Service		1%
OrderGroove	Conversion Utility		3%
Oribi	Analytics		6%
osano	Security		3%
Outbrain	Ad Tech		8%
OwnerIQ	Ad Tech		2%

































Third Party	Category	PIR Color	% of Sites
Oxi Social Login	Commerce Utility		2%
Pagefly	Conversion Utility		3%
pagespeed-mod.com	Performance		31%
ParcelLab	Post Purchase		1%
Paypal	Payment Processing		58%
PCA Predict	Client-side Security		6%
Pebble Post	Channel Expansion		4%
Pepperjam	Influencer and Affiliate Marketing		7%
PerimeterX	Client-side Security		10%
Picky Story	Conversion Utility		1%
Pingdom	APM		5%
Pinterest	Social Media		60%
Pixel Union	Commerce Utility		2%
Pixlee	UGC and Customer Reviews		7%
Placeholder	Image Hosting		2%
Podsights	Analytics		5%
Polyfill.io	Commerce Utility		14%
Postie	Channel Expansion		2%
Power Reviews	UGC and Customer Reviews		11%
Powr.io	Conversion Utility		4%
Price	Coupons and Deals - Browser Plugin		1%
Priceblink	Coupons and Deals - Browser Plugin		17%
PriceSpider	Coupons and Deals - Browser Plugin		1%
PrintDirections	Maps		4%
Privy	Conversion Utility		5%
Publitas	Conversion Utility		2%
Pubmatic	Ad Tech		7%
PulsePoint	Analytics		6%
Push Owl	Push Marketing		5%
Pusher	Push Marketing		2%

Third Party	Category	PIR Color	% of Sites
Qikify	Conversion Utility		2%
QuadPay	Payment Processing		3%
Qualtrics	Analytics		5%
Quantcast	Ad Tech		8%
Quantum Metric	Analytics		6%
Quora	UGC and Customer Reviews		1%
Radial	Post Purchase		2%
Rakuten Marketing	Ad Tech		17%
Rakuten: Get Cash Back For Shopping	Coupons and Deals - Browser Plugin		15%
Rapid+Config	Super Accelerator		64%
Rapid+JS	Super Accelerator		90%
Rapid+QOE	Commerce Utility		93%
Rapleaf - Towerdata	Ad Tech		20%
Ratepay	Payment Processing		1%
Re:amaze	Customer Service		2%
Rebuy	Conversion Utility		9%
Recharge	Conversion Utility		6%
Reddit	Social Media		13%
Refersion	Influencer and Affiliate Marketing		4%
Reflektion	Personalization		3%
Reseller Ratings	UGC and Customer Reviews		1%
Retailmenot	Coupons and Deals - Browser Plugin		15%
Retention Science	Marketing Automation		1%
Revenue Hunt	Conversion Utility		2%
Reviews.io	UGC and Customer Reviews		2%
Revlifter	Personalization		1%
RewardStyle	Influencer and Affiliate Marketing		8%
RhythmOne	Ad Tech		6%
Rich Relevance	Personalization		1%
RingCentral	Customer Service		20%





















Third Party	Category	PIR Color	% of Sites
Rise.ai	Loyalty		6%
Riskified	Fraud		7%
Roboturk	Commerce Utility		4%
RockerBox	Marketing Automation		2%
Rokt	Personalization		4%
Rollbar	Error Monitoring		7%
Route	Other		3%
RTB House	Personalization		5%
Rubicon Project	Ad Tech		7%
RudderStack	CDP and Identity		3%
Saasler	Commerce Utility		1%
SailThru	Marketing Automation		2%
Salsify	Channel Expansion		2%
Sanity	CMS		1%
Scarab Research	Analytics		3%
Searchanise	Commerce Search		5%
SearchSpring	Commerce Search		7%
Secomapp	Conversion Utility		1%
Seedtag	Ad Tech		2%
Segment	CDP and Identity		11%
Sendtric	Marketing Automation		1%
Sentry	Development Testing		45%
SessionCam	Analytics		1%
Sezzle	Payment Processing		3%
ShareASale	Influencer and Affiliate Marketing		9%
Sharethis	UGC and Customer Reviews		3%
ShareThrough	Ad Tech		6%
SheerID	Loyalty		1%
ShipScout	A/B Testing		1%
Shogun Website Builder	Conversion Utility		10%

Third Party	Category	PIR Color	% of Sites
Shop App	Channel Expansion		33%
Shop Pad	Conversion Utility		1%
Shop.pe	Channel Expansion		5%
Shopback	Coupons and Deals - Browser Plugin		3%
Shopmy Shelf	Influencer and Affiliate Marketing		3%
Shopper Approved	UGC and Customer Reviews		2%
Shopping Gives	Coupons and Deals - Browser Plugin		2%
Shopperunner	Post Purchase		2%
Shoptagr - Your New Shopping Assistant	Coupons and Deals - Browser Plugin		14%
SignifyD	Fraud		11%
Simez	Ad Tech		3%
Simon Data	CDP and Identity		1%
Simplifi	Other		2%
Siteimprove	Accessibility		1%
Sitelab	Analytics		6%
Skai	SEO Marketing		4%
SkimLinks	Influencer and Affiliate Marketing		7%
Slickdeals	Coupons and Deals - Browser Plugin		7%
Smaato	Ad Tech		4%
Smart Wishlist	Conversion Utility		1%
SmartAdServer	Ad Tech		3%
Smarter Remarketer	Ad Tech		4%
Smartlook	Rum Analytics		1%
Smarty Streets	Maps		3%
SMCT	Other		3%
smile.io	Loyalty		4%
Snapchat	Social Media		36%
Social Snowball	Influencer and Affiliate Marketing		1%
Sonobi	Ad Tech		2%
Source Defense	Security		2%

Third Party	Category	PIR Color	% of Sites
Sovrn Commerce	Influencer and Affiliate Marketing		8%
Spectrum	Personalization		2%
Speed Curve	Analytics		1%
Split	Conversion Utility		1%
Spotify	Other		4%
spotxchange.com	Ad Tech		3%
Sprinklr	Social Media		1%
Square Space	CMS		1%
StackAdapt	Ad Tech		4%
Stamped IO	UGC and Customer Reviews		6%
Starapps Studio	Conversion Utility		1%
Steelhouse	Ad Tech		4%
Stilyo Apps	Conversion Utility		1%
Stockist	Maps		1%
Stodge	Marketing Automation		4%
StoreMapper	Maps		2%
Stripe	Payment Processing		33%
Student Beans	Coupons and Deals - Browser Plugin		2%
Stylitics	Conversion Utility		3%
subwayblaze	Malware		2%
SuppleApps	Conversion Utility		1%
Survicate	Conversion Utility		1%
SwagButton	Coupons and Deals - Browser Plugin		2%
Swym	Conversion Utility		8%
Symantec	Security		1%
Syndigo	Channel Expansion		2%
Syte	Conversion Utility		3%
Taboola	Ad Tech		12%
Taggstar	UGC and Customer Reviews		2%
Talkable	Influencer and Affiliate Marketing		3%

Third Party	Category	PIR Color	% of Sites
Tangiblee	Conversion Utility		5%
Tapad	CDP and Identity		2%
Tapcart	Marketing Automation		2%
Teads	Ad Tech		7%
The Trade Desk	Ad Tech		28%
Thimatic	Conversion Utility		1%
Tidio	Chat		2%
TikTok	Social Media		48%
Tkr-Connector	Other		2%
Tolstoy	Conversion Utility		2%
TPMN	Ad Tech		1%
TQL	Post Purchase		8%
TrackJS	Error Monitoring		4%
Transportr	SEO Marketing		2%
TransUnion TruValidate	CDP and Identity		17%
Tremor Video	Video		2%
Trendmicro	Malware		36%
Triple Whale	Analytics		6%
Triplelift	Ad Tech		6%
TrueFit	Conversion Utility		8%
Truevalult	Security		1%
Trust Arc	Tag Management		3%
Trusted Shops	Commerce Utility		1%
Trustedsite	Security		2%
TrustPilot	UGC and Customer Reviews		5%
Tumblr	Social Media		1%
Turnto	UGC and Customer Reviews		6%
TVPage	Video		1%
Tvsquared	Analytics		3%
Twitter	Social Media		23%

Third Party	Category	PIR Color	% of Sites
Typeform	Conversion Utility		2%
Unbxid	Commerce Search		2%
Unidays	Coupons and Deals - Browser Plugin		3%
Uppromote	Influencer and Affiliate Marketing		1%
Upsellit	Conversion Utility		6%
UsableNet	Accessibility		4%
Userway	Accessibility		5%
UTag - Tealium	Tag Management		11%
Ve global	UGC and Customer Reviews		9%
Venntov	Conversion Utility		1%
VerifyPass	CDP and Identity		1%
Verizon Media	Ad Tech		2%
Vibes	Influencer and Affiliate Marketing		2%
VideoAmp	Ad Tech		1%
VideoJS	Video		4%
Vimeo	Video		24%
ViralSweep	Ad Tech		1%
Visa Checkout	Payment Processing		2%
Visual Website Optimizer	A/B Testing		9%
W3trends	Commerce Utility		1%
WatchNewsNow	Commerce Utility		7%
WebCollage	Ad Tech		1%
Webeyez	Conversion Utility		2%
Webflow	CMS		13%
Weglot	Commerce Utility		2%
Widen	Image Hosting		3%
Widilo	Coupons and Deals - Browser Plugin		2%
WisePops	Conversion Utility		2%
Wistia	Video		2%
Wordpress	CMS		2%

Third Party	Category	PIR Color	% of Sites
Wufoo	Commerce Utility		2%
Wunderkind (formerly BounceX)	Ad Tech		19%
Xandr	Ad Tech		21%
Yahoo Analytics	Ad Tech		12%
Yahoo! Japan	Browser		4%
Yandex	Search Engine		12%
Yext	Conversion Utility		1%
Yieldify	Personalization		2%
Yieldmo	Ad Tech		2%
Yotpo	UGC and Customer Reviews		29%
Youtube	Video		54%
Zendesk	Chat		14%
Zepto Apps	Conversion Utility		1%
Zeta	Marketing Automation		3%
Zeta Global	Marketing Automation		4%
Zip	Payment Processing		28%
Zipify	Conversion Utility		1%
ZMags	CMS		3%
Zonos	Channel Expansion		3%
ZoomInfo	Analytics		2%