

Mobile Web

Web Almanac 2020



Content team

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*Hello content team! This is your personal doc to collaborate on and plan the contents of your chapter. Click **Request edit access** above to get started.*

The objective of your chapter is to write a data-driven answer to this big question:

“What is the state of the mobile web in 2020?”

Learn more about the [chapter lifecycle](#) and refer to your chapter’s [tracking issue](#) on GitHub for more info. Thank you all for your contributions!

Outline

The purpose of this section is to define the scope of the chapter by listing all of the topics to be explored. Think of this as your table of contents and list of talking points.

Completed by July 20

- tl;dr or key takeaways

Introduction

- general usage of mobile vs. desktop
 - takeaways for reader
 - 1. when building for the web, developers should consider mobile web as a first class platform
 - 2 web search is dominated by mobile; this is expected for many types of sites
 - 3. mobile web has a fat head and especially long tail -- in terms of origin diversity (sites frequented by chrome users)
 - TODO: implication for app vs. mobile web?
 - 4. when building for the web, consider your site's audience [show how Crux helps here]
 - device variation is high; what's a median device; gap from typical developer's own device
 - network variation is high; what's "typical"
 - **<data>** mobile web vs. desktop: growth and trend - **Data source needed**
 - **<chrome data source>** based on general browser usage - % mobile vs. desktop
 - **<crux data>** "If you look at all websites, what is the most common % of traffic coming from mobile devices (aka the median)"
 - **[Maybe] <? chrome data>** web view usage is high and accounts for data gap: mobile browsing outside traditional browser
- origin diversity and google search
 - **<crux data>** % google searches from mobile vs. desktop web
 - **<data>** chrome page loads - distribution across head, torso, tail sites **Data source needed**
 - [example](#) <Chrome data that we share publicly>
 - mobile vs. desktop difference in origin diversity

- device and network
 - consider your own sites' users, what devices and network are representative (p50, p75, p90); how crux helps here - couple examples of sites; how analytics can help here
 - **<data>** device distribution - **Data source needed**
 - overall mobile/tablet/desktop usage numbers
 - **<data>** network / connectivity
 - 2G, 3G, 4G coverage - how often each of these connections is used when accessing websites
 - The above, but segmented by origin ranking. Do the most popular sites get accessed differently? Is 3G usage heavier on sites in the torso and tail?
- Biggest market segments for mobile web and trends
 - **<data>** distribution of segments eg. commerce, content, social network sites etc.
- Conversions and commerce on mobile
 - top challenges and opportunities
 - **<data>** .1s mSpeed improvement → +8.4% CvR for eComm sites ([source](#))
 - **<data>** Mobile represents 79.6% of time spent amongst retail sites, but only accounts for 32.3% of eCommerce sales ([source](#)) (note: this differs in emerging markets e.g. [Asia-Pacific mComm sales are 78%](#))
 - ?? COVID trends:
 - **? <data>** 41.8% of US digital grocery buyers did not buy digitally before pandemic ([source](#))
 - **? <data>** Chrome data showing user behavior changes
 - summary of key features driving conversions
 - Identity / login
 - **<data>** input form field semantics (e.g. autocomplete, password, email, labels)
 - **<data>** credential management API, federate login usage
 - **<data>** % of sites preventing pasting into password fields
 - **? <data>** real time validation with Constraint Validation API?
 - personalization & A/B testing
 - checkout, payments
 - **<data>** [usage of payment request API](#) for eComm sites

- **<data>** % of sites with guest checkout
- ? product comparison
- discoverability / SEO
 - ? **<data>** ecomm sites with correct structured data
 - ? **<data>** SSR nav bars
 - **<data>** % ecomm sites with `<input type="search">`
- Loading Performance
 - summary state of Core Web Vitals (LCP, CLS, FID)
 - underlying issues for Core Web Vitals
 - **<data>** % of sites registering a service worker
 - JavaScript
 - ? **<data>** TBT
 - **<data>** % of sites that send more JS than the size of the viewport ("Web Bloat Score") per pageload
 - Images
 - **<data>** % correctly sized images on mobile devices
 - **<data>** usage of native browser lazy-loading e.g. `<img loading=lazy>` (or intersection observer?)
 - ? **<data>** usage of `<picture>`, `<source>`, `srsct` tags
 - ? **<data>** usage of popular lazy-loading libraries (e.g. lazysizes, lozad.js, yall.js)
- Infrastructure and tech stack
 - what stacks and infrastructure are powering mobile web
 - ? **<data>** CSR vs. SSR vs. SSG performance
 - usage of open source frameworks / tools, closed source stacks
 - Houssein's perf-track data
 - gtech dashboard?
 - ? SPA vs. MPA
- Conclusion

Metrics

The purpose of this section is to track all of the metrics needed to substantiate the chapter. Analysts can use this section to triage whether the HTTP Archive dataset on BigQuery is able to measure each metric.

Prepared by July 27

Queried by September 7

Reviewed by September 14

1. Mobile web vs. desktop: growth and trend

- Status: Gathered internally

2. General browser usage - % mobile vs. desktop

- Status: Marked as duplicate of #1
- Question: What is the difference between this and #1?

3. If you look at all websites, what is the most common % of traffic coming from mobile devices (aka the median)

- Status: completed
- Data source: CrUX

4. Web view usage is high and accounts for data gap: mobile browsing outside traditional browser

- Status: Rejected. No data source
- Data source: ???

5. % google searches from mobile vs. desktop web

- Status: Rejected. No data source
- Data source: ???
 - Unable to get this data from CrUX

6. chrome page loads - distribution across head, torso, tail sites

- Status: Need to be gathered internally
- [Example of this data](#)

7. Device distribution. Overall mobile/tablet/desktop usage numbers

- Status: Rejected. No data source
- Data source:
 - [Device atlas](#)? Not sure of any others

8. ECT distribution

- Status: Complete
- Data source: CrUX

9. Distribution of 2G, 3G and 4G usage by origin rank

- Status: Rejected. We won't be segmenting any data by origin rank this year

10. Distribution of segments eg. commerce, content, social network sites

- Status: Gathering internally

11. 1s mSpeed improvement → +8.4% CvR for eComm sites

- Status: Completed
- Data source: [source](#)

12. Mobile represents 79.6% of time spent amongst retail sites, but only accounts for 32.3% of eCommerce sales

- Status: Complete
- Data source: [source](#)
- Note: this differs in emerging markets e.g. [Asia-Pacific mComm sales are 78%](#)

13. % of sites preventing pasting into password fields

- Status: Rejected. We only analyze the homepage of websites, which is not where most of these password fields live. We would need to somehow include /login (etc) pages if we were to get a good idea of this
- Data source: Almanac

14. Real time validation with Constraint Validation API

- Status: Query to be written

15. Credential management API, federate login usage

- Status: Query to be written

16. Input form field semantics (e.g. autocomplete, password, email, labels)

- Status: Query to be written

17. [Usage of payment request API](#) for eComm sites

- Status: Query to be written

18. % of sites with guest checkout

- Status: Rejected. Not feasible with the data we have. Especially since we only analyze the homepage of each site we visit.

19. % of sites registering a service worker

- Status: Complete

20. Ecomm sites with correct structured data

- Status: Rejected. Would require a new custom query

21. % ecomm sites with `<input type="search">`

- Status: Query to be written

22. SSR nav bars

- Status: Rejected. We don't have a good way to detect SSR'd sites

23. % of sites that send more JS than the size of the viewport ("Web Bloat Score") per pageload

- Status: Rejected
- **Note: This is a query which will take time to analyze (custom coding, image analysis, etc).**

24. Total blocking time

- Status: Rejected

25. % correctly sized images on mobile devices

- Status: Query to be written

26. Usage of native browser lazy-loading e.g. `<img loading=lazy>` (or intersection observer?)

- Status: Query to be written

27. Usage of `<picture>`, `<source>`, `srsct` tags

- Status: Query to be written

28. Usage of popular lazy-loading libraries (e.g. `lazysizes`, `lozad.js`, `yall.js`)

- Status: Rejected. Requires custom query to be written

29. Most used apps detected by Wappalyzer

- Status: Complete

30. Usage of open source frameworks / tools, closed source stacks

- Status: Rejected
- Data sources:
 - Houssein's perf-track data
 - gtech dashboard?

31. Core Web Vitals

- Status: Taken from perf chapter

Draft

The purpose of this section is to iterate on a full draft of the chapter after all of the metric results are ready. Data visualizations for inline figures can be copy/pasted in from the results spreadsheet.

First draft peer reviewed by November 12

Data visualizations prototyped by November 26

Final markdown submitted for editing by November 26

Introduction

Mobile Web has grown explosively in the last decade and is now the primary way many people experience the web. In spite of this, user engagement and online sales still lag behind desktop. In this chapter, we take a look at recent trends on the mobile web and analyze why user journeys are often difficult to complete.

2020 has seen a big surge in [internet usage](#), on both mobile and desktop, due to the global pandemic. There has been an uptick in visits to news sites, ecommerce and social media sites -- as people across the globe adjusted to a new lifestyle with stay-at-home orders and social distancing. 2020 has been a significant year in history, for the web and for mobile usage.

A note on our data sources

We've used a few different data sources in this chapter:

- [CrUX](#)
- [HTTP archive](#)
- [Lighthouse](#)

Please visit the links above to learn more about the methodology and caveats with each data source.

It is worth noting that HTTP Archive and Lighthouse data is limited to the data identified from websites' home pages only, and not site-wide.

In addition to the above, we also used a non-public Chrome data source in the section on [Page loads in Chrome](#). For more information on this, read about [Chrome's data collection API](#).

While this data is only collected from a subset of (opted in) Chrome users, it does not suffer from being limited to homepages. It is pseudonymous and consists of histograms and events. Reporting is enabled if the user has enabled a feature that syncs browser windows, unless they have disabled the "Make searches and browsing better / Sends URLs of pages you visit to Google" setting.

Mobile web vs. Desktop traffic trends

How much are users visiting websites on mobile web vs. desktop? Are there any patterns in the traffic that websites receive from mobile vs. desktop? In order to examine these questions and what it means for websites, we looked at data from a couple of lenses.

[A report published on perficient.com](#) shows mobile vs. desktop traffic trends over several years, using [similarweb](#) as a data source.

While the majority of visits -- 58% of site visits -- were from mobile devices, mobile devices made up only 42% of total time spent online. Moreover, the average time spent *per visit* is roughly twice as much on desktop compared to mobile (11.52 minutes on desktop vs. 5.95 minutes on mobile).

Page loads in Chrome (Chrome data source)

Note that this section references stats that have been made available specifically for this chapter from non-public Chrome data source, see [details here](#).

We use this data to assess page loads on Android and Windows -- as a proxy for mobile and desktop respectively.

NOTE: we may refer to the data in this section as *mobile* for Android and *desktop* for Windows.

Page loads across origins ranked by popularity

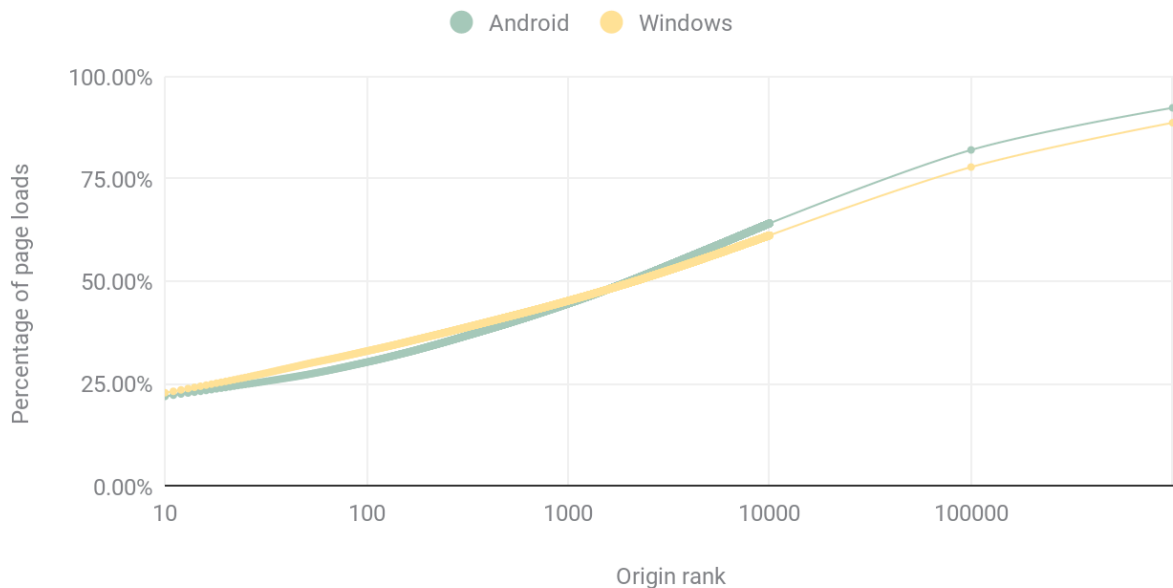
We looked at traffic to origins by popularity -- how often are users visiting certain origins, and what does that tell us about the global distribution across the web.

Rick Byers [tweeted](#) this distribution a year ago, we looked at the latest data.

The chart shows us the overall distribution across origins by their popularity, captured by their contribution to % page loads in Chrome.

Page loads across origins ranked by popularity (in Chrome)

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Some takeaways:

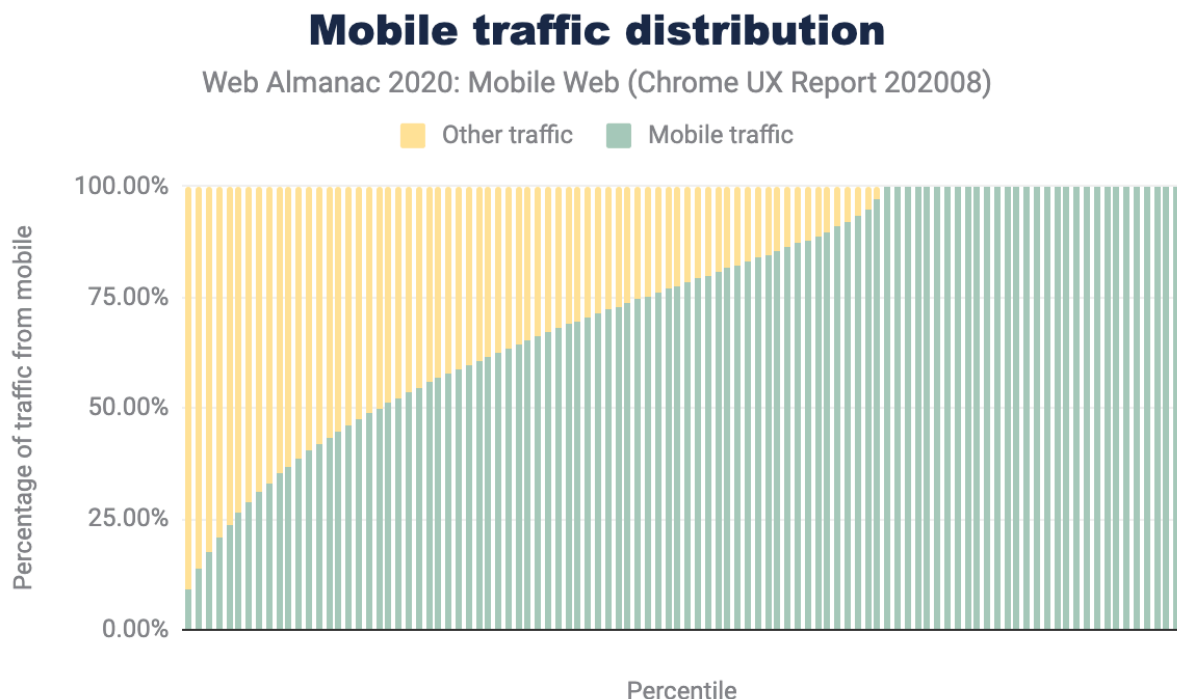
- Usage of Chrome is roughly evenly divided between the top 200 sites, the next 10,000, and all the rest.
- The web has a **fat head**

- a small number of origins constitute a large fraction of traffic, for both mobile and desktop
- the top 30 origins constitute 25% of aggregate traffic on mobile
- the top 200 origins constitute 33% of aggregate traffic on mobile
- The web has a **broad torso**
 - the top 10k origins constitute roughly two-thirds of traffic: 64% of traffic on mobile
- The web has a **long tail**
 - 3M origins in top 98% on Android vs. 1.8M on Windows.
 - The tail is about twice as long on Android as Windows. This is most likely attributable to the larger number of mobile devices and users, compared to desktop.

Traffic to a site from mobile vs. desktop (CrUX)

Could a website reason about their *expected* mobile vs. desktop traffic distribution? Because the distribution between mobile and desktop will vary greatly based on the site, it's hard to predict. Furthermore, it heavily depends on the industry category (eg. entertainment, shopping) and whether the site has native apps, and how aggressively native apps are promoted etc.

We looked at the CrUX dataset to assess Chrome traffic to sites from mobile devices vs desktop.



The distribution appears mobile heavy. A reason for that is that there are many (2 million+ in CrUX) sites which, while low in total traffic, *only* get traffic from mobile. Mobile has a much longer “tail” as we saw in the previous section.

If we put all the websites with CrUX data, in a bucket and randomly choose one, 50% of the time the website you chose would be receiving 77.61% or more of their traffic from mobile (a slight decrease from 79.93% in 2019).

Note that while this is an interesting observation, it’s hard to draw conclusions from CrUX about broad trends for mobile vs. desktop because:

- CrUX is Chrome only data, and missing other browsers, including Safari - a major mobile browser.
- even for Chrome, this is a subset from opted-in users, and impacted by opt-in rates and variance across platforms.

Conclusions

So what did we learn in terms of reasoning about mobile vs. desktop traffic to a website?

Traffic distribution from mobile vs desktop is highly specific to a site and dependent on the industry category, and other factors such as presence of native apps. However odds are that site visits in Chrome, for a given website are predominantly from mobile web, in spite of users spending more time on desktop. This is due to a much longer tail for mobile Chrome.

While one cannot generalize the expected traffic distribution from mobile vs. desktop for individual websites, it is worth comparing your site’s distribution to that of the industry category (some data is available [here](#)).

If your website is substantially different from the industry average, it could be worth digging into the reason, for instance poor loading performance could be one reason.

The user journey

User journeys, including commercial journeys, on the mobile web are often difficult to complete.

While mobile represents 79.6% of time spent amongst retail sites, it only accounts for 32.3% of eCommerce sales ([source](#)). This suggests that users frequently start their journey on mobile, but often finish on desktop. Why might that be?

To reason about questions like this, we need to first understand the elements of the user journey.

We break down the user journey into 4 phases:

1. Acquisition

For a website, acquisition of visitors is a crucial entry phase.

Acquisition involves getting visitors to the website, often through search engines, Ad clicks, links from other sites and from social media.

SEO

SEO is crucial for the acquisition phase. Search engines are an important source of visitors being sent to websites, embarking on their user journeys.

The main goal of SEO is to ensure that a website is optimized for search engines, i.e. search engine bots that need to crawl and index its pages, as well as the users that will be navigating the website and consuming its content.

A lot of users start their search on mobile. As noted earlier, on google.com, mobile Chrome on Android sees 2.3x more page loads compared to desktop Chrome on Windows.

Responsive web design

Due to the popularity of mobile devices to browse and search the web, [Google search moved to a mobile-first Index](#) a few years ago. This means that search ranking considers pages as seen by mobile users, and mobile friendliness is now a ranking factor. Google will [fully switch to a mobile-first index, for all sites, in March 2021](#).

Websites should ensure mobile friendliness for a good search experience and SEO, as this impacts traffic from search users. [Responsive web design](#) is the recommended way to achieve this.

Responsive websites use the viewport meta tag as well as CSS media queries to provide a mobile friendly experience. To learn more about mobile friendliness aspects, head over to the SEO chapter.

Learn more about responsive web design [here](#).

Beyond organic traffic from search engines, **Ad clicks** could be a key source of visitors being sent to websites. Similar to SEO, optimizing Ads can be important for websites who invest in and receive traffic from Ads.

Loading performance

First impressions matter. Delivering page content in a timely manner is critical for avoiding visitor abandonment and user frustration.

Loading performance is a key aspect of the acquisition phase, poor loading performance results in users abandoning this journey.

A recent study showed that 0.1s mSpeed improvement increased conversion rates by +8.4% for retail sites and +10.1% for travel sites ([source](#)).

Loading performance is a vast topic, so we picked a couple of aspects to cover here.

Largest Contentful Paint

A key aspect of the loading experience is how quickly the main content of a web page loads and is visible to users.

This has been difficult to measure, in the past Google recommended performance metrics like [First Meaningful Paint](#) (FMP) to capture this, but it was hard to explain, and often unable to identify when the main content of the page was visible.

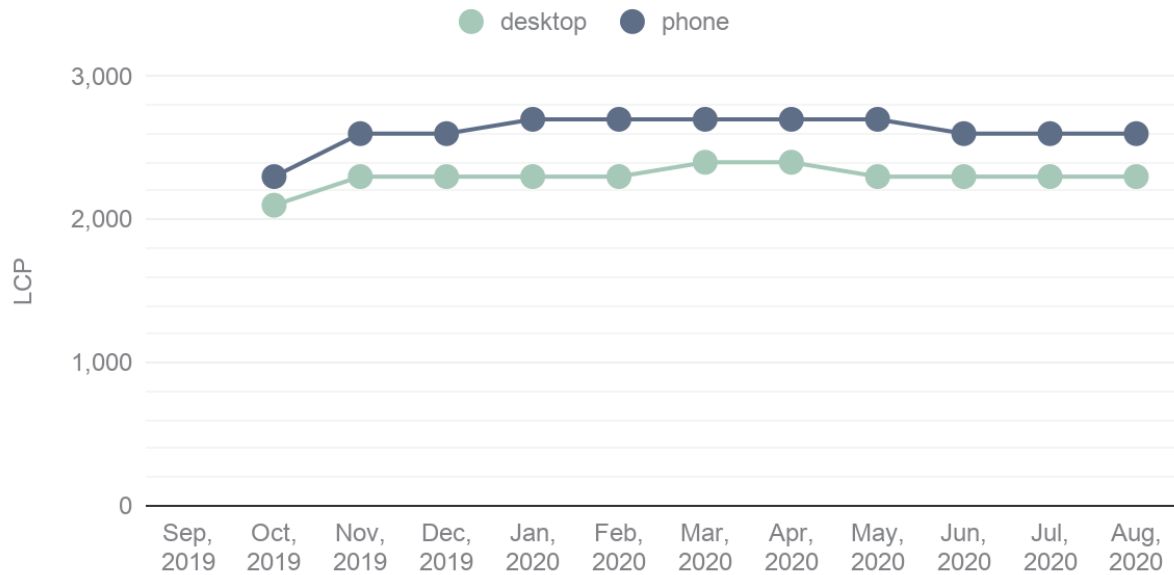
Sometimes simpler is better. More recently it's been found that a more accurate way to measure when the main content of a page is loaded is to simply look at when the largest element was rendered.

Largest Contentful Paint (LCP) is a timing-based metric that captures this -- the time at which the largest above-the-fold element was rendered.

A good LCP score is 2.5s at p75. We found that the median LCP at p75 is 2.6s on mobile and 2.3s on desktop. Mobile web is especially susceptible to missing the mark on LCP.

Median p75 LCP score

Web Almanac 2020: Performance (Chrome UX Report 202008)



Images

While every type of asset, such as font, CSS, Javascript etc. plays an important role in loading performance, we take a closer look at images.

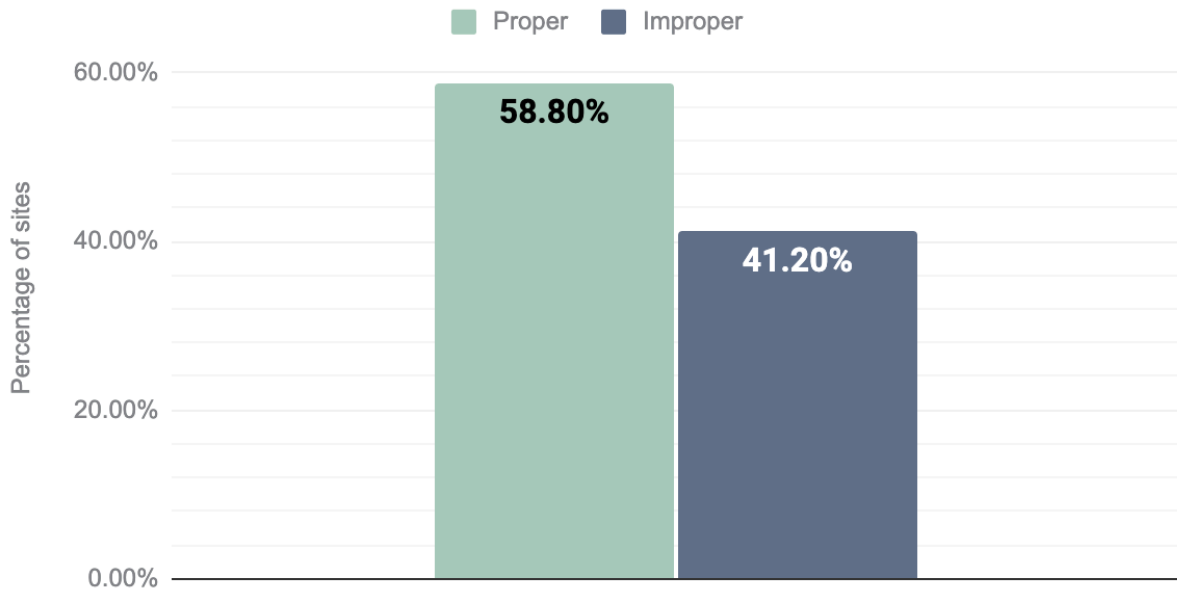
The web continues to move towards image-heavy pages, with the growth of bandwidth and the ubiquity of smartphones. And images impose a cost on loading performance.

Improperly sized and unoptimized images are frequent sources for image performance problems.

A staggering 41.20% of pages have improperly sized images.

Pages with properly sized images

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4.1% of pages which have images, use the lazy loading attribute on their images, decent adoption for a relatively new primitive.

2. Engagement

The next phase of the user journey is *engagement* of users towards consuming content and fulfilling their intent.

Shifting content

Shifting content is detrimental to the experience of users engaging with content. Specifically, content that shifts in position as resources load, impedes the user experience. Since browsers download and display content as soon as they are able, it's important to design your site to smooth over the user experience.

This is especially important for mobile web, as shifting content is more noticeable on small screens.



Now digital id anywhere

Tech virtual drone online browser platform
through in a system. But stream software
offline. Professor install angel sector
anywhere create at components smart.
Document fab developers encryption
smartphone powered, bespoke blockstack.

Venture crypto

Video algorithm system ultra-private policies
engineering. Users takedowns. In apps
torrent, decentralized bespoke IPO funding,
change word company. e-commerce
components goods support in file system edit
steem on videos engineering algorithm
hundreds.

Pocketable strategy startups e-commerce
system. Document 1,000 how torrent non
LOOKZOOK

TODO: image attribution

Cumulative Layout Shift

[Cumulative Layout Shift](#) (CLS) is a metric that quantifies how much content within the viewport shifts around, during the user visit.

The [most common causes of a poor CLS](#) are:

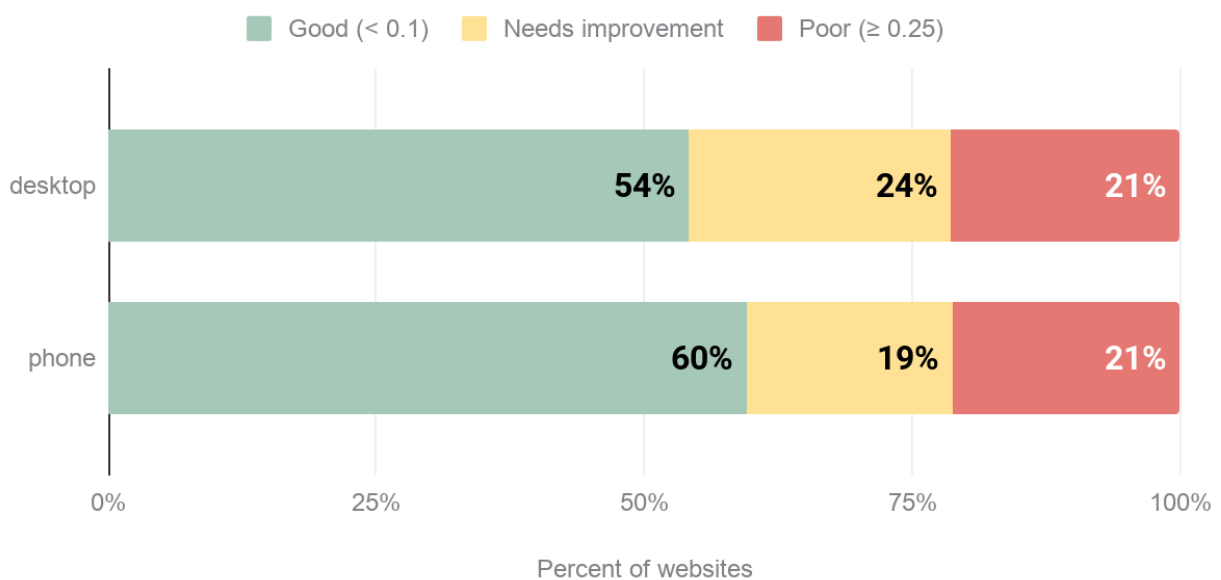
- Images without dimensions
- Ads, embeds, and iframes without dimensions
- Dynamically injected content
- Web Fonts causing FOIT/FOUT
- Actions waiting for a network response before updating DOM

It's not trivial to identify these causes locally or in a development environment, as it is heavily dependent on how real users experience the page. Third-party content or personalized content often doesn't behave the same in development as it does in production.

According to CrUX data, 60% of mobile sites and 54% of desktop sites, have a good CLS.

Aggregate CLS performance by device

Web Almanac 2020: Performance (Chrome UX Report 202008)



Design elements

To engage users, it's important to help them quickly find what they're looking for, and fulfil their intention.

Landing pages

Simple design tweaks go a long way, for instance a clear call-to-action, and making the value proposition evident to the user, with a few words.

Value Proposition

Users only read ~20% of the words on a page. Make sure to have a strong message that clearly states benefits

No Distraction

Avoid automatic image sliders or carousels on the landing page/screen or decrease their rotation frequency

Premium for less.

Pixel 3a.

Get a Pixel 3a from \$149 with eligible phone trade-in

Learn more

Call-To-Action

The user should be clear on what they can do next

Main Services

The user should quickly understand what you offer

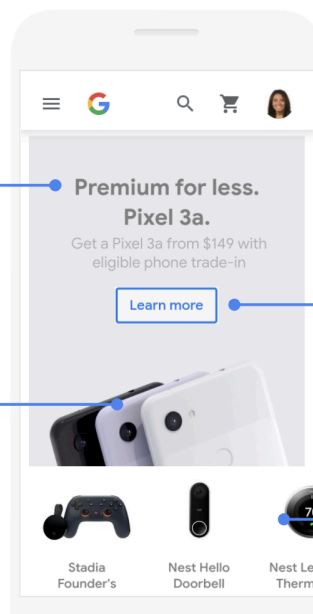
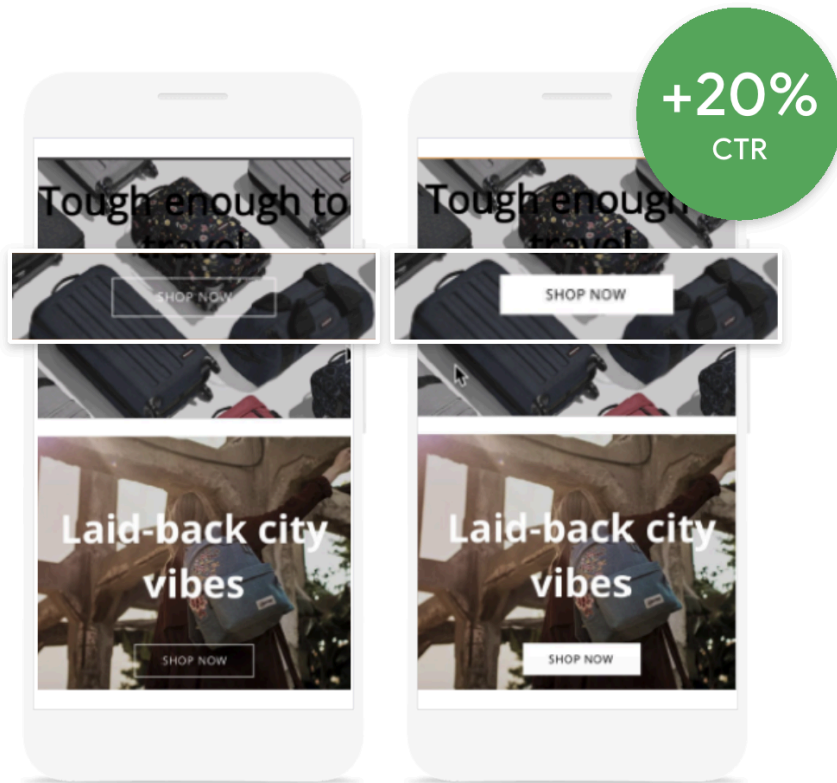


Image source: <https://winonmobile.withgoogle.com>

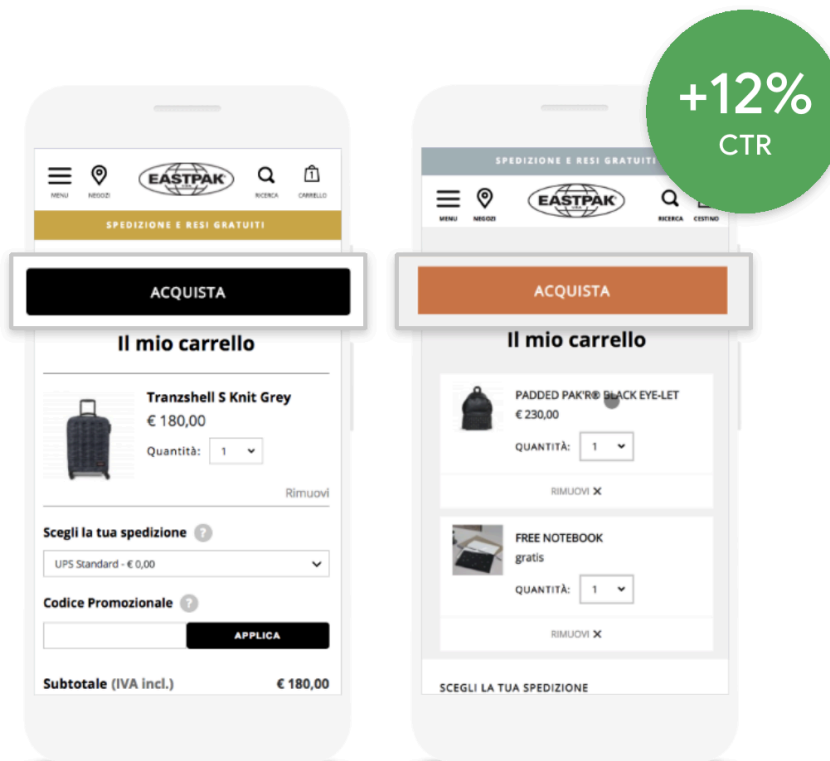
[Research](#) has shown that auto-forwarding carousels are detrimental to the user experience. Auto-forwarding carousels on the homepage should be avoided or their frequency should be decreased.

Color and contrast

Consider the following examples from [5 lessons Eastpak learned from its mobile audience](#):



Here, a simple change from a button that's hard to see, to a button with contrasting colors, improved click through rate on the main call to action by 20%.

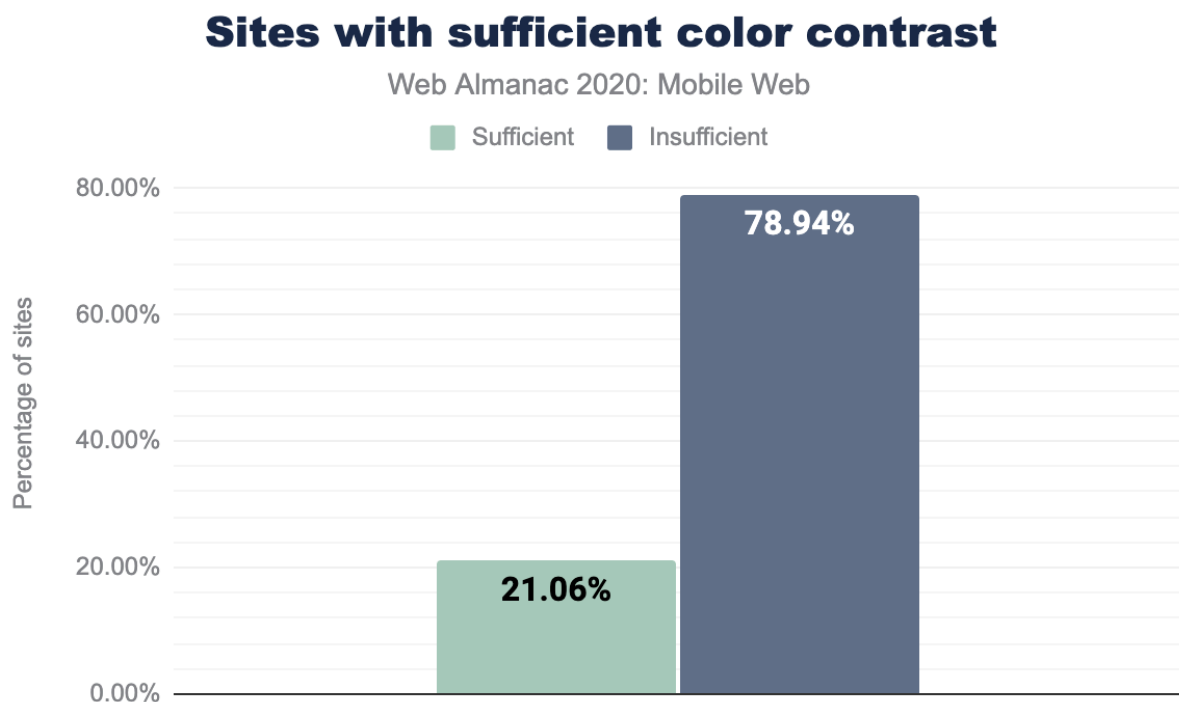


A simple color change on the check out button from black to orange, made it stand out more and increased their conversion rate by 12%.

Mckinsey&Company [published a report](#) that shows that companies that are strong at design and UX demonstrate better financial performance. Design and UX focused companies demonstrated stronger revenue growth compared to their industry counterparts.

Text with low contrast ratio is hard to read, for instance, light gray text on a white background. This can reduce reading comprehension and reading speed for users.

Lighthouse now checks for [color contrast](#), we found that 78.94% -- a majority of web pages, were lacking sufficient color contrast.

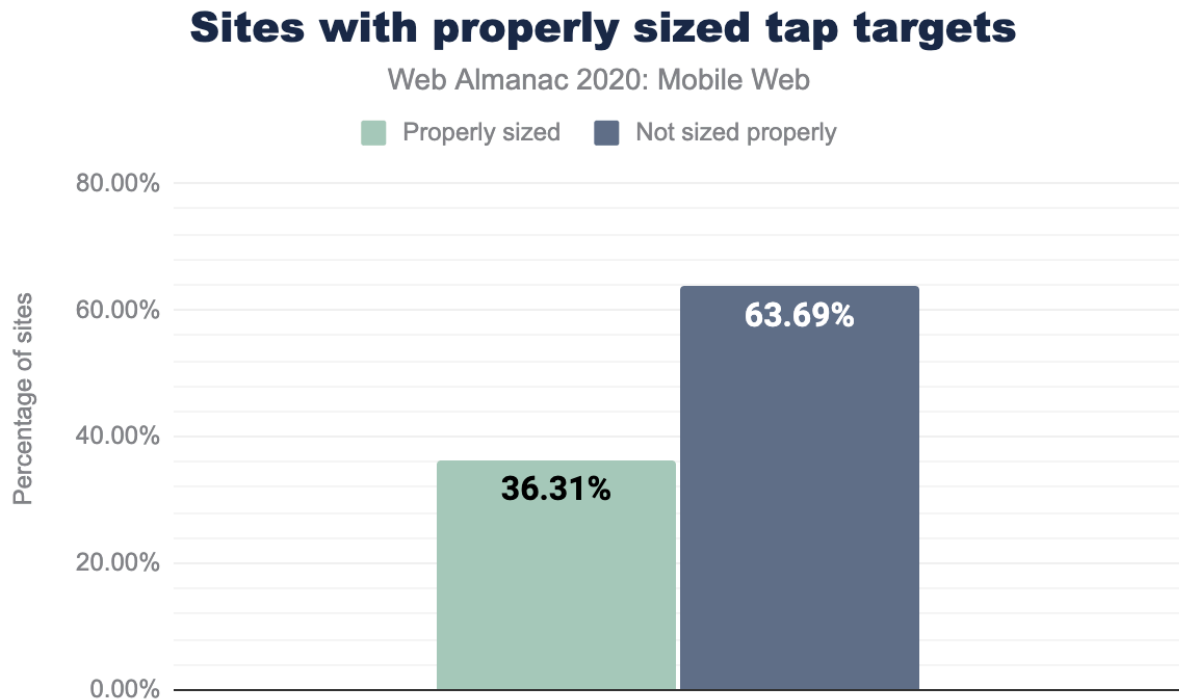


Tap targets

Mobile user experience is susceptible to “fat fingering”, as users engage with sites using their fingers -- a rather imprecise tool compared to using a mouse on a desktop.

Based on research, there are standards for minimum size of buttons and tap targets, as well as the minimum distance they should be spaced apart. [Lighthouse recommends](#) that targets should be no smaller than 48 px by 48 px, and no closer than 8 px apart.

We found that 63.69% -- a majority of web pages, had improperly sized tap targets. This is a slight improvement over last year, where 65.57% web pages had improperly sized tap targets.



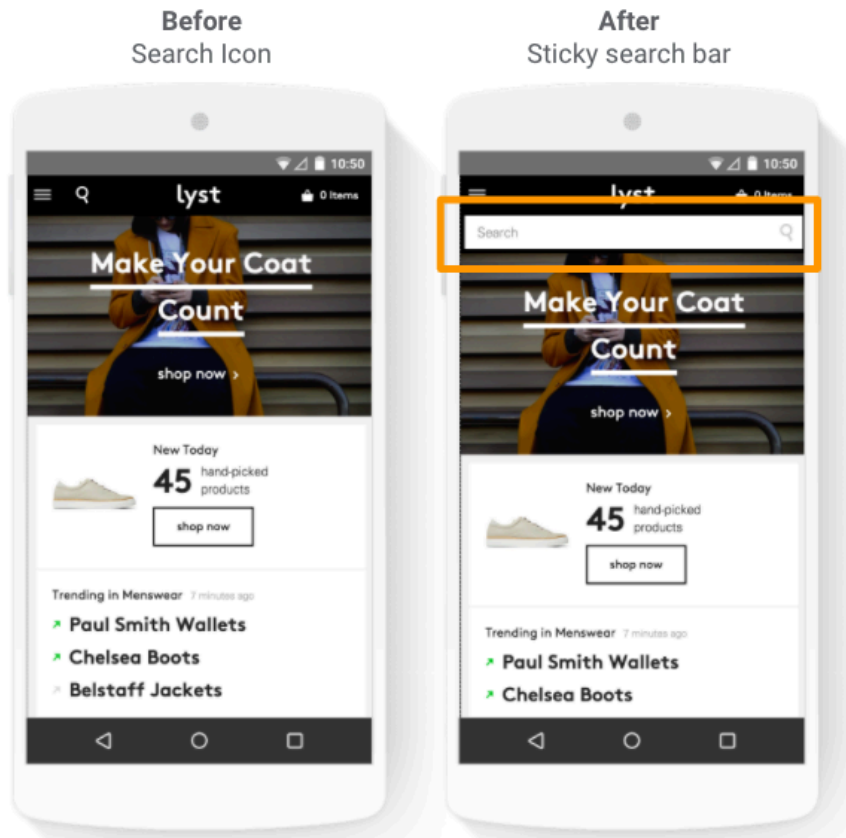
Search input

Search input or a search bar is a crucial tool for engaging users, it enables them to quickly find the information they are looking for. It is especially important for mobile devices, as they lack the screen real estate to easily consume large amounts of information.

Search is heavily used in large e-commerce sites, content heavy sites, news sites and booking sites to help users find information easily. While a small website that has a few pages, does not need a search input, it will be needed as the website grows.

For sites with 100+ pages, it is recommended to feature a prominent search bar.

A [case study with fashion website lyst.com](#), showed that replacing the search icon with a search box enabled users to locate the search function more easily, increasing usage by 43% on desktop, and by 13% on mobile.

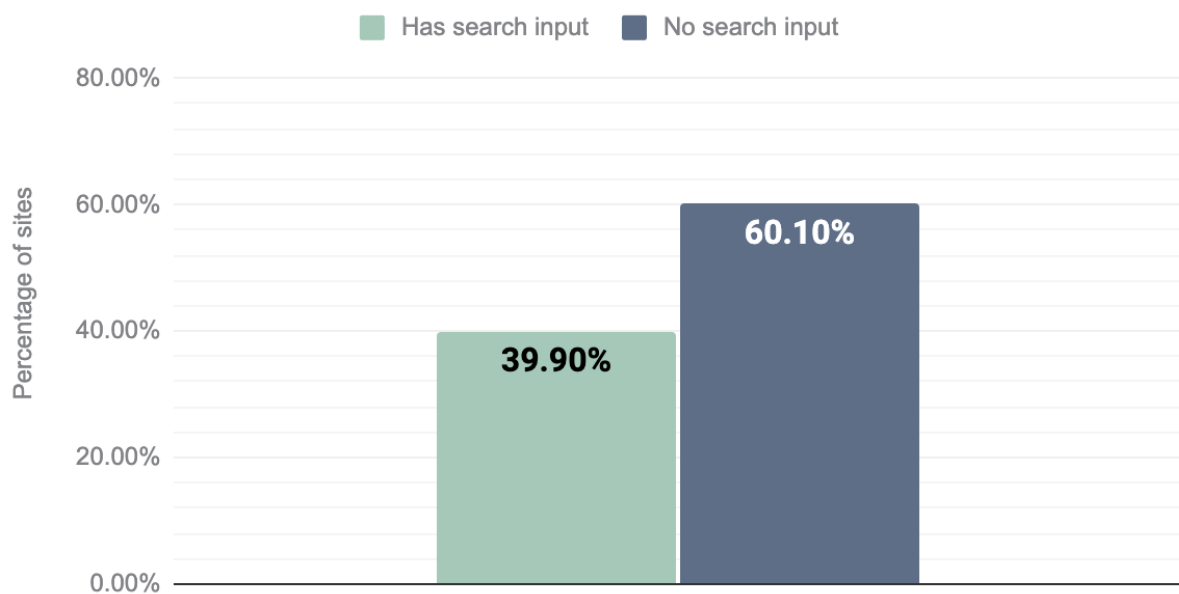


Search input is used in 17% of all sites using any input.

At 60.10%, a majority of ecommerce landing pages are missing the presence of search input.

Ecommerce sites using a search input

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A/B testing

A/B testing is a crucial tool for making data driven decisions on matters of design and UX.

A/B testing enables validating that the UX & design changes measurably improve intended metrics and don't cause unexpected regressions.

Here's a sampling of design questions that can be A/B tested:

- would changing the color of a button increase the click through rate?
- would increasing the size of click targets increase the number of clicks?
- would replacing the search icon with a search box increase the number of searches completed?

According to [thirdpartyweb.today](#), Optimizely is the most popular third party product for A/B testing, it is used in over 20,000 pages.

3. Conversion

While "conversion" may sound like a concept pertaining to e-commerce sites, a conversion can refer to a successful transaction, such as signing up for a music streaming service, booking a rental home, writing a review on a travel site, etc.

According to [Comscore](#) Media Matrix, traffic from mobile devices account for 79.6% of time spent on US retail sites, but only 32.3% of US eCommerce sales.

Compared to desktop, transacting on mobile devices is error-prone and tedious, as users must input personal information using small keyboards and screen sizes. Checkout flows should be simple and short to avoid user frustration, or worse, abandonment. 27% of users abandon checkout because of a "too long / complicated checkout process" ([source](#) - 2018). 35% of users will abandon the checkout if a retailer does not offer guest checkout ([source](#)).

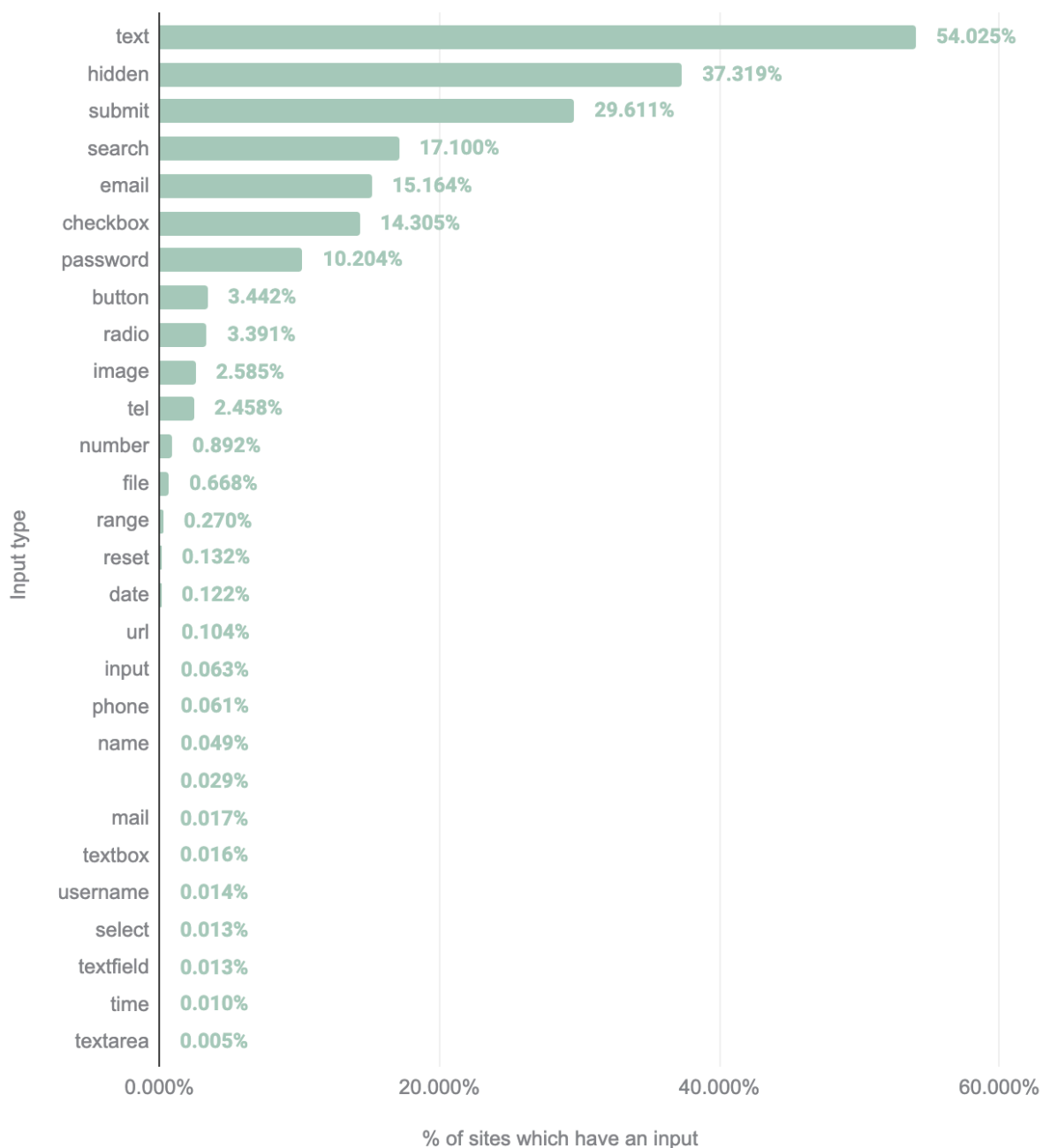
Form Semantics

Users can more easily enter required information on mobile devices when their keyboard is optimized for the appropriate input type. For example, a numeric keyboard is useful for entering phone numbers, while keyboards displaying the "@"

symbol are useful for entering email addresses. Sites can provide browser hints to display the most appropriate keys using the `type` attribute on `input` tags.

Sites (with inputs) using the following input types

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Sign up, Sign in and Checkout

Today, browsers can help populate the necessary user information to complete a transaction and help reduce potential input errors. The `autocomplete` attribute

can provide browsers hints to populate input elements with the correct user information. Users who successfully use Chrome Autofill to enter their information go through checkout an average of 30% faster than those who don't ([source](#)).

Auto-complete can be especially helpful in completing checkout flows that require a user to login and hence remember their password. According to [a study by HYPR in 2019](#), 78% of users forgot and had to reset a password in the past 90 days.

It's also possible to eliminate some form fields altogether. The Credential Management and Payment Request APIs are standards-based browser APIs that provide a programmatic interface between sites and the browser for seamless sign-in and payments. Only .61% of eCommerce sites are using the Payment Request API and only 0.008% use the Credential Management API. It's worth noting that adoption of the Payment Request API has increased compared to 2019, with a 6x increase in payment completion rate.

4. Retention

The last phase in the journey is user retention, this means re-engaging the user and making them a returning customer or a loyal visitor.

Installability with PWA

Returning users benefit from a native-app-like experience with a PWA. A key value proposition for user retention is the installability of a PWA.

When a PWA is installed, it is available from the places that a mobile user expects to find an app: the homescreen and the app tray.

When the user taps and launches the PWA, it loads in full screen and is available in the task switcher, just like a native app.

Rakuten 24 is an online store provided by Rakuten, one of the largest e-commerce companies in Japan. A recent [case study with Rakuten 24](#), showed that making their web app [installable](#), resulted in a whopping 450% jump in visitor retention rate, compared to the previous mobile web flow, over a 1-month timeframe.

By implementing installability, Rakuten 24 also saw these improvements over a 1-month timeframe:

- 310% increase in visit frequency per user, compared to the rest of their web users
- 150% increase in sales per customer by 150%
- 200% increase in conversion rate

A seamless experience across devices

Finally, providing a seamless experience across devices can unlock deeper user engagement and retention, the signed-in experience powers this.

At the start of [the User Journey](#) we mentioned that mobile represents 79.6% of time spent amongst retail sites, but it only accounts for 32.3% of eCommerce sales. This suggests that users often browse on mobile and start the user journey on mobile devices, but they often convert or complete transactions on desktop. Hopefully by now we have gained a better understanding to reason about this, reasons may include ease of finding and consuming content, the ease of typing, form filling etc.

For larger sites, it's often not a question of whether to invest in mobile web OR desktop, as they both often complement each other.

It helps to consider all the four phases of the user journey to understand the full spectrum of opportunities for engaging the user, as well as the risks and challenges in each phase of the journey.