PRIORITIZING WEB PERFORMANCE OPTIMIZATIONS

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we  speed

HTTP ARCHIVE & WEB ALMANAC

- **HTTP Archive:**
  Tracks how the web is built.

- **Web Almanac:**
  Annual publication that analyzes HTTP Archive data.

almanac.httparchive.org

Part II Chapter 12

Performance

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OPPORTUNITIES

Opportunity	Estimated Savings
Properly size images	18.57s
Reduce unused JavaScript	3.45s
Reduce unused CSS	1.35s
Eliminate render-blocking resources	0.56s
Avoid serving legacy JavaScript to modern browsers	0.15s

These suggestions can help your page load faster. They don't directly affect the Performance score.

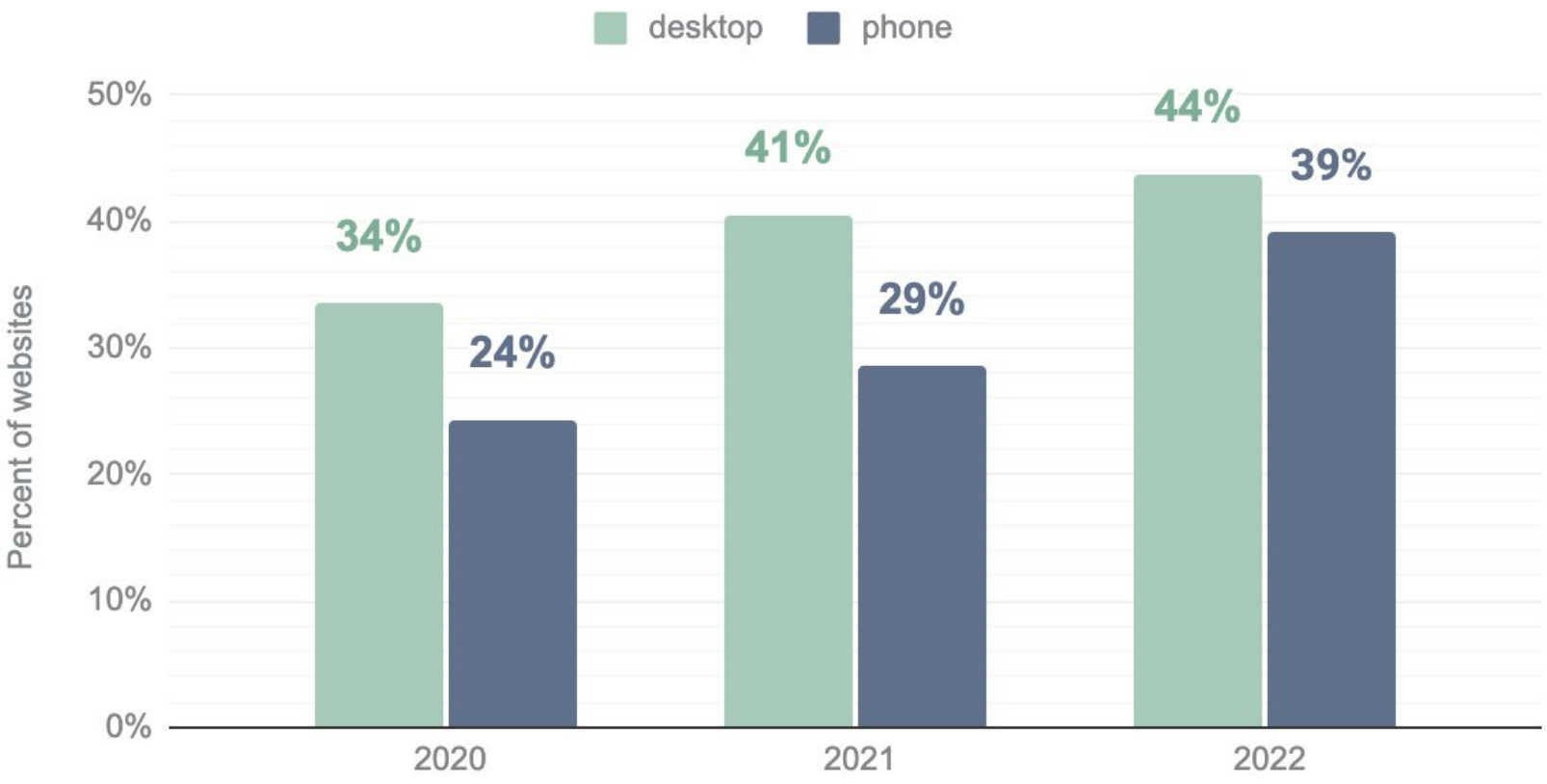
DIAGNOSTICS

- Reduce the impact of third-party code — Third-party code blocked the main thread for 1,510 ms
- Does not use passive listeners to improve scrolling performance
- Image elements do not have explicit `width` and `height`
- Minimize main-thread work — 8.9 s
- Avoid an excessive DOM size — 2,273 elements
- Avoid enormous network payloads — Total size was 5,273 KiB
- Reduce JavaScript execution time — 4.5 s
- Serve static assets with an efficient cache policy — 12 resources found
- Avoid chaining critical requests — 11 chains found
- User Timing marks and measures — 2 user timings
- Keep request counts low and transfer sizes small — 116 requests • 5,273 KiB
- Largest Contentful Paint element — 1 element found
- Avoid large layout shifts — 1 element found
- Avoid long main-thread tasks — 20 long tasks found

STEP 0:
MEASURE

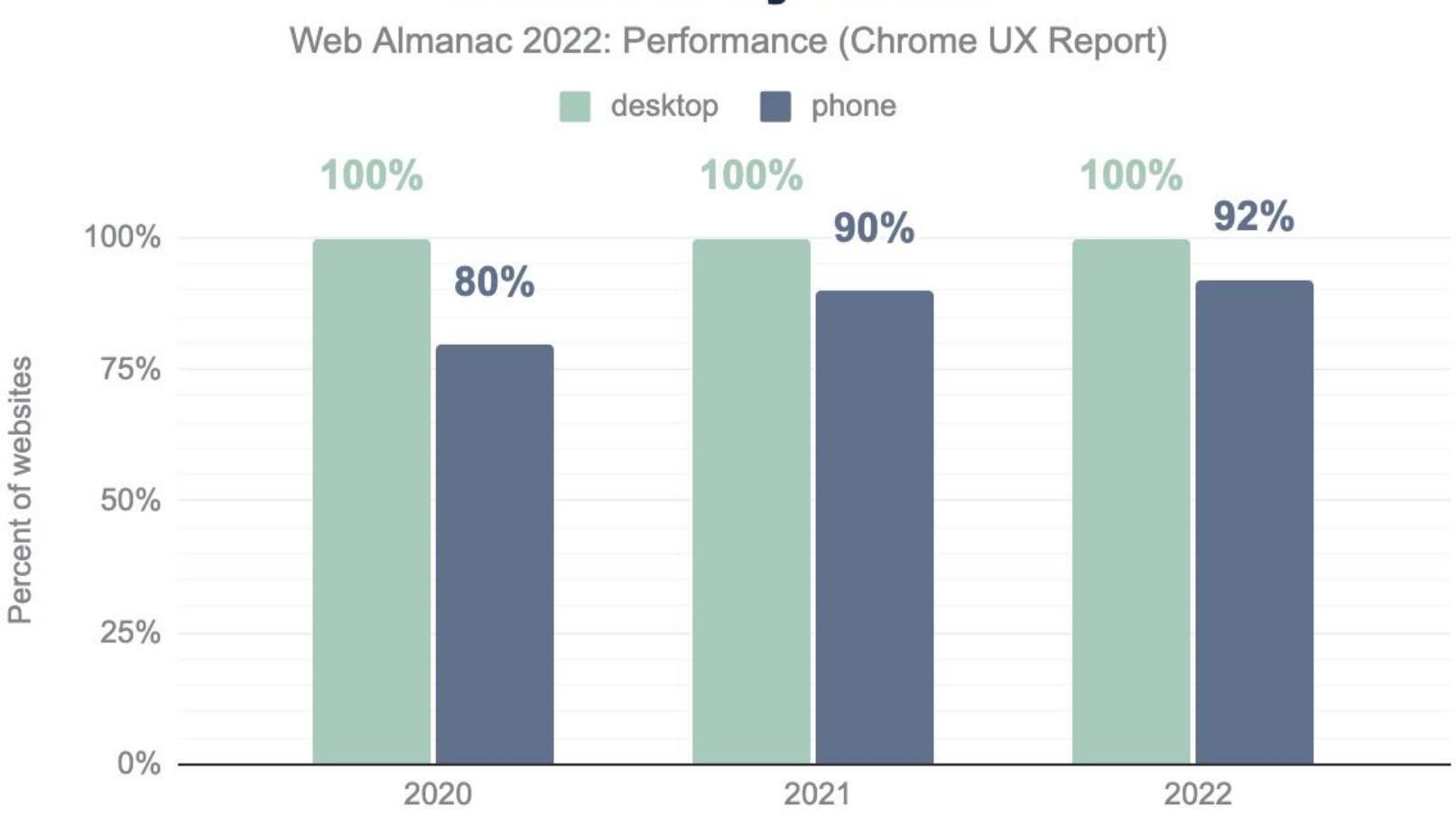
Good Core Web Vitals by device

Web Almanac 2022: Performance (Chrome UX Report)

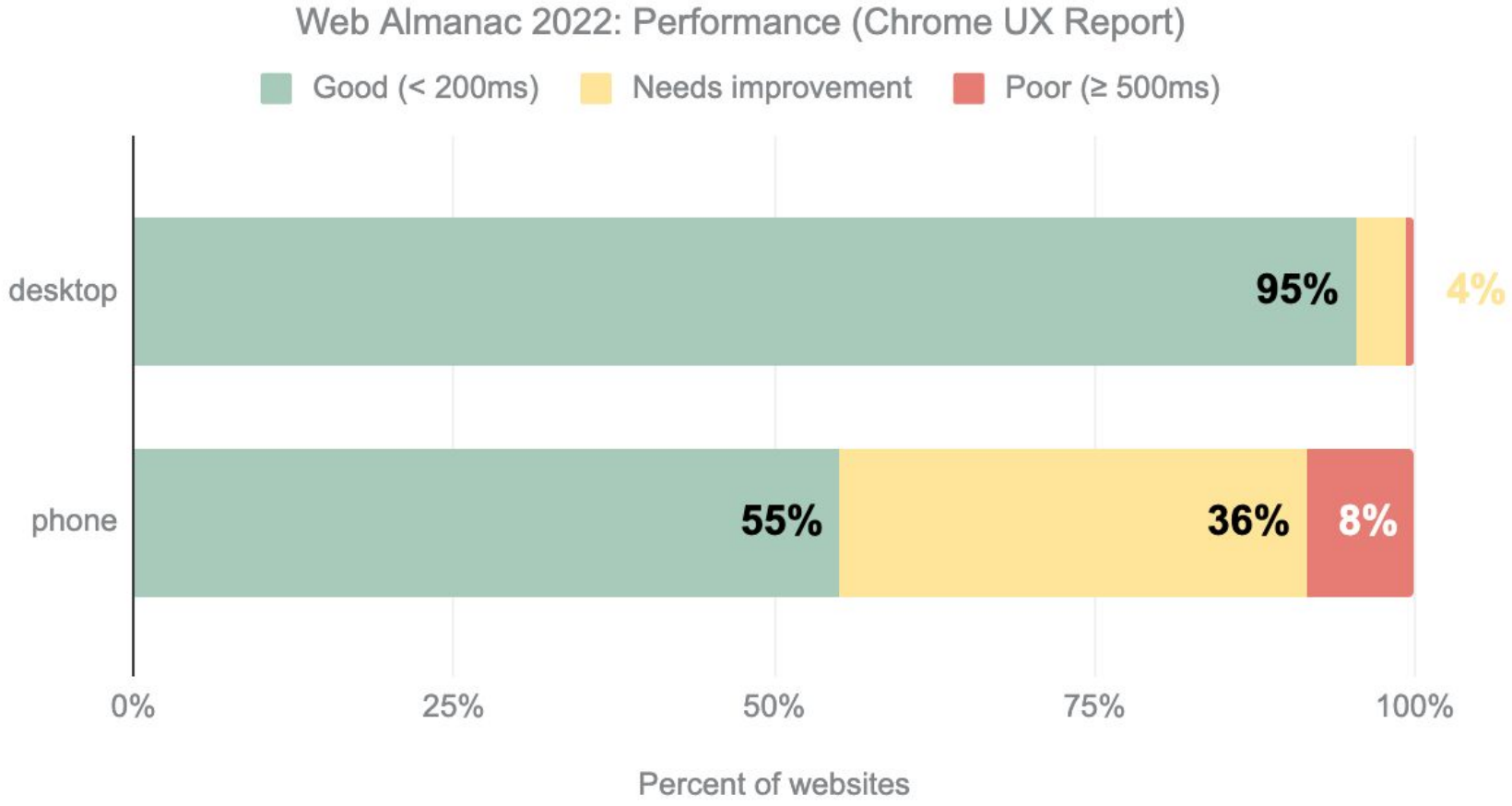


One number isn’t the whole story

Good FID by device



INP performance by device



STEP 1:
VERIFY

VERIFY THE PROBLEM IS A PROBLEM

- Cross reference RUM (p75)
- Historic data

```
if (userAgent === synthetic) {
  // Load images synchronously
} else {
  // Lazy load images if
  // user opens module
}
```

STEP 2:
ASSESS

Prioritization Factors

Effort

- Solution Clarity
- Technical blockers
- Business blockers

Impact

- Level of confidence

LOW EFFORT / HIGH IMPACT

- Solution Clarity: **Clear**
- Technical blockers: **Minimal**
- Business blockers: **Minimal**
- Level of confidence: **High**

PRIORITY HINTS

0.3%

Sites use `fetchpriority=high` on LCP element

DON’T LAZY LOAD LCP RESOURCE

9.8%

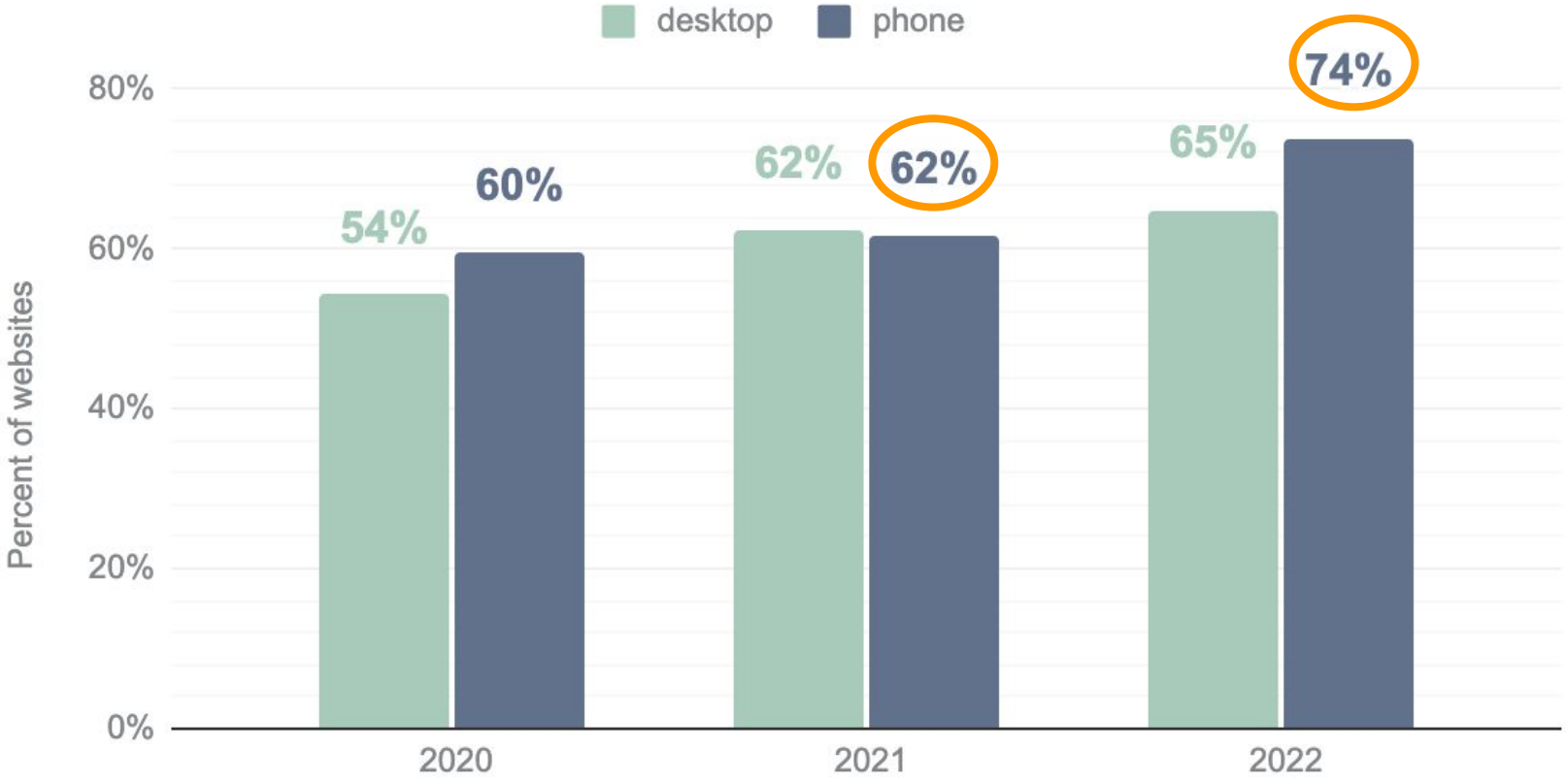
Mobile sites lazy load their LCP element

LOW EFFORT / HIGH CONFIDENCE

- Impact: **Low - High**
- Solution Clarity: **Clear**
- Technical blockers: **Minimal**
- Business blockers: **Minimal**

Good CLS by device

Web Almanac 2022: Performance (Chrome UX Report)



bfcache ineligibility from unload handlers

bfcache eligibility

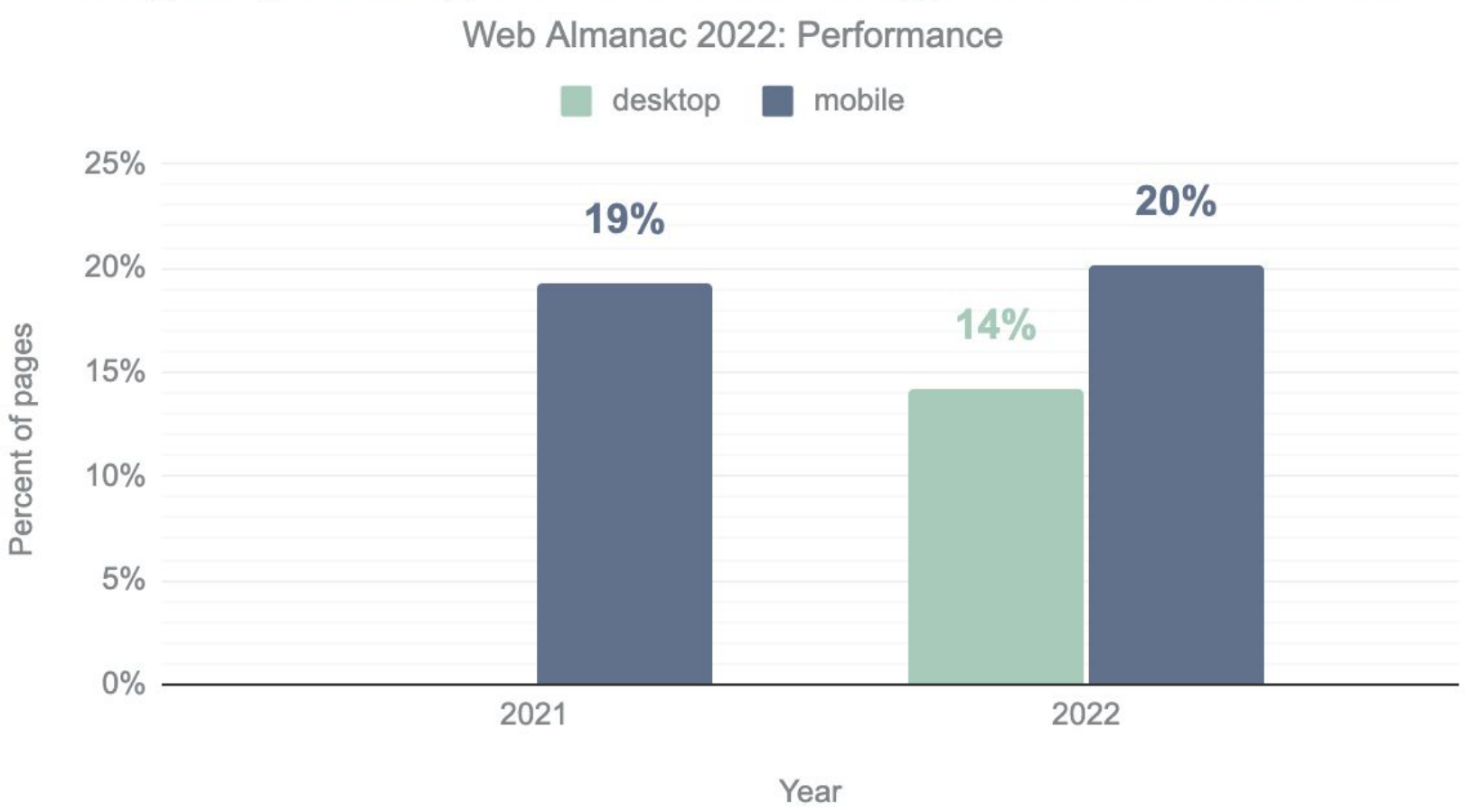
```
addEventListener("unload", (event) => {});
```

```
addEventListener("pagehide", (event) => {});
```

MEDIUM EFFORT / HIGH IMPACT

- Solution Clarity: **Clear - Fuzzy**
- Technical blockers: **Some**
- Business blockers: **Minimal**
- Level of confidence: **High**

Pages passing render-blocking resources audit



REDUCE RENDER BLOCKING RESOURCES

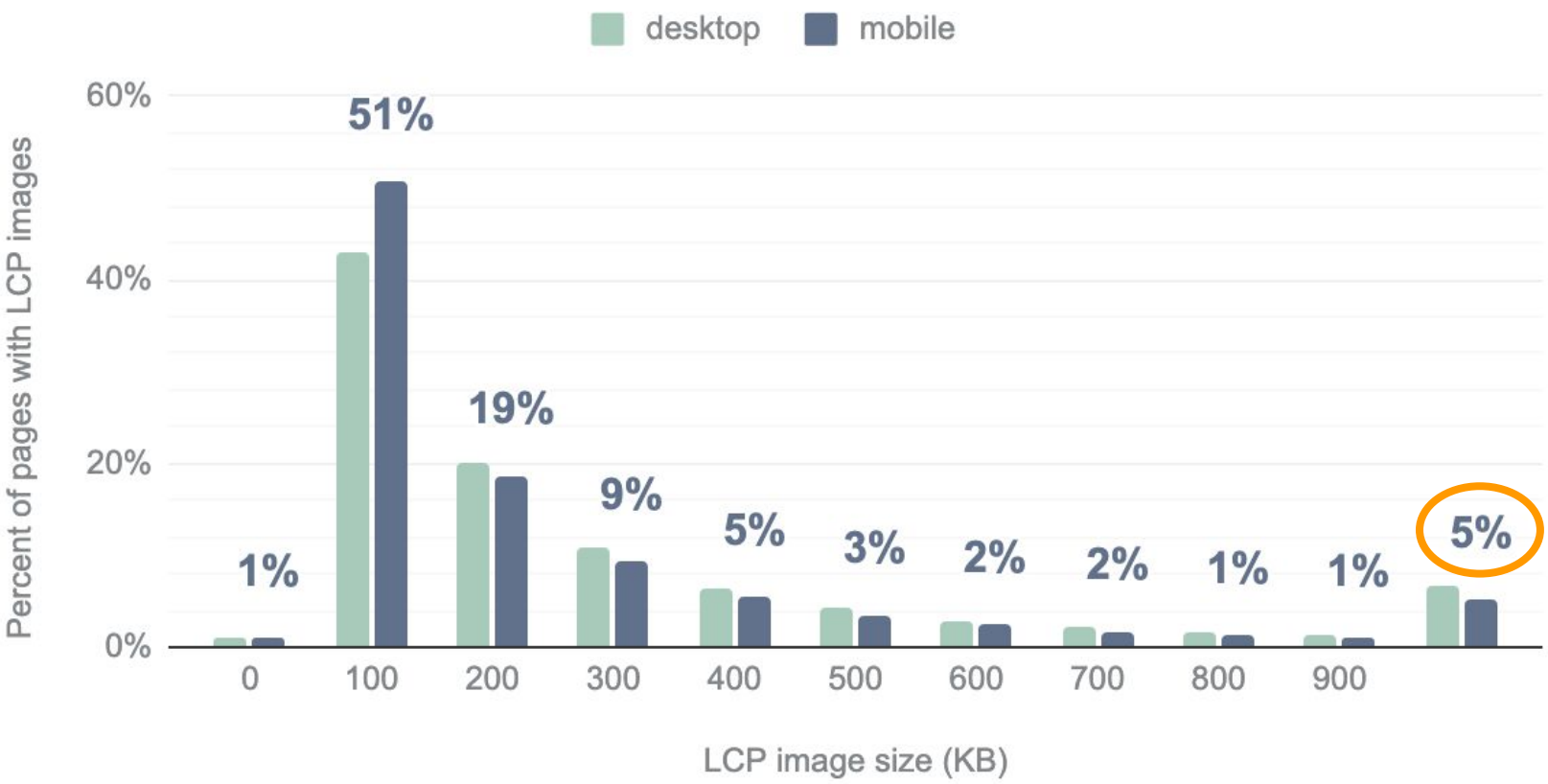
- Inline only critical CSS & JS
- Remove Unused Code

```
<script src="myFile.js" async></script>

<script src="myFile.js" defer></script>

<img src="myFile.jpeg" decoding="async" alt="We Love Speed 2023"/>
```

LCP image size histogram



RESPONSIVE IMAGES

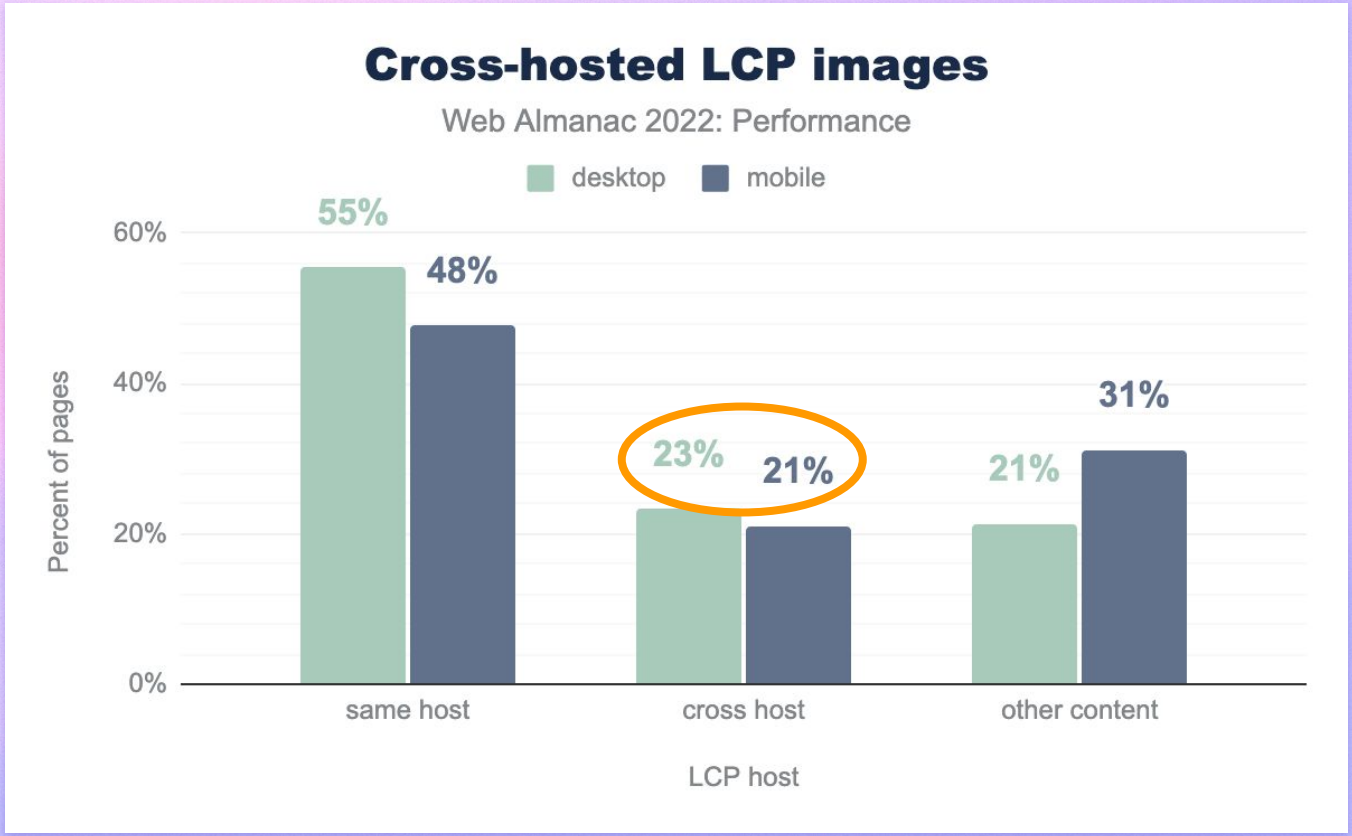
- **Intrinsic Size:**
  Dimensions of the image that is served to the browser

- **Rendered Size:**
  Dimensions that the image is rendered on the page

HIGH IMPACT / HIGH EFFORT

- **Cross collaboration**
  - Ownership at the feature level, performance is page level
- **Infrastructure tracks of work**

AVOID DOMAIN SHARDING



CLOSING THOUGHTS

- Experience is the best teacher
- Cherish the easy wins
- Make it sustainable
- Have Fun

THANK YOU!

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