

Web Performance

Contentsquare

Impact Quantification

Uncover which issues are affecting revenue and conversion

Let's `
`
the boundaries
of page speed

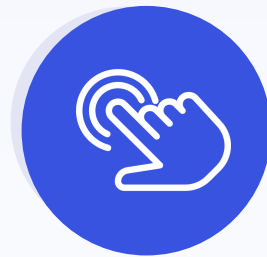
Web performance: three UX aspects

Fast-loading, responsive and visually stable websites help users achieve their goals



Loading speed

How fast the content of a web page loads and is visible to users.



Responsiveness

How quickly a page responds to user interactions and visually confirms this to the user



Visual stability

Are layout and content displayed on a page without shifting during loading and navigations

Google Core Web Vitals

Google Core Web Vitals is a set of user-centric metrics for evaluating user experience. To be successful in search and ensure a great user experience, Google recommends that website owners focus on achieving good Core Web Vitals.

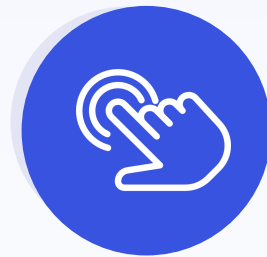


Loading speed

Time To First Byte

First Contentful Paint

Largest Contentful Paint



Responsiveness

First Input Delay

Interaction to Next Paint

Total Blocking Time



Visual stability

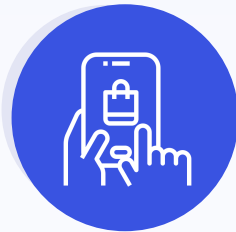
Cumulative Layout Shift

Why a fast website is important?



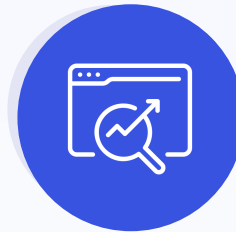
Optimise UX

Enhance website performance to provide users with a **seamless and delightful** browsing experience.



Drive Conversions

Streamline the user journey, reduce friction points and improve usability to **increase the likelihood of users taking desired actions.**



Boost SEO

Improve website performance factors (Core Web Vitals) that influence **search engine rankings.**



Gaining Competitive Advantage

Differentiate your brand by providing a high-performing website that **surpasses competitors' offerings.**



Ensure Scalability and Future Readiness

Build a solid foundation and infrastructure to **support the website's scalability** and handle spikes in user demand.

Compare segments with Impact Quantification

Use Impact Quantification to compare positive vs negative segments.

Example of a comparison:

'Users who experience a Largest Contentful Paint (LCP) of less than 2,5 s on their Landing Page' compared against 'Users who experienced a LCP of more than 2,5 s on their Landing Page'

Ask yourself the question:

What happens if we are able to move 1% of users from one segment to the other?

Setup scenario 1

1. Head over to Journey Analysis

- Open the Analysis Context and set up the segment based on **Largest Contentful Paint**
- E.g. Users who experienced a LCP of less than 2.5 seconds on landing page

2. Set up the comparison

- Select Compare to set up the comparison segmentation so you can view the comparison in a single screen
- E.g. Users who have experienced a LCP of more than 2.5 seconds on landing page

The screenshot displays the Contentsquare Journey Analysis interface for setting up a comparison scenario. It is divided into two sections, each with a filter bar at the top showing 'Mobile', 'Apr 14 → 29 2024 (16 days)', and '1 Condition'.

Top Section: Shows 16.1% of analysed traffic (442,919 sessions). The filter bar includes: 41.3% on desktop (182,977 sessions), 0.96% on tablet (4,243 sessions), and 57.4% on mobile (254,107 sessions). The condition is set to: LCP (Largest ...), User who experienced a LCP less than 2,5 seconds on a specific page or page group. There are buttons for '+ Add condition' and '+ Add a group of conditions'.

Bottom Section: Shows 3.33% of analysed traffic (91,388 sessions). The filter bar includes: 41.9% on desktop (38,275 sessions), 2.20% on tablet (2,011 sessions), and 55.8% on mobile (50,998 sessions). The condition is set to: LCP (Largest ...), User who experienced a LCP more than 2,5 seconds on a specific page or page group. There are buttons for '+ Add condition' and '+ Add a group of conditions'.

At the bottom of the interface, there are buttons for 'Apply', 'Save as new Segment', and 'Cancel', along with a 'Compare' toggle switch that is currently turned on.

Setup scenario 2

1. Head over to Journey Analysis

- Open the Analysis Context and set up the segment based on **Interaction to Next Paint**
- For example, you could set up a segment for users who have experienced an INP of less than 200 milliseconds on the landing page

2. Set up the comparison

- Select Compare to set up the comparison segmentation so you can view the comparison in a single screen
- For example, users who have experienced an INP of more than 200 milliseconds on the landing page

The screenshot displays two comparison scenarios in the ContentSquare interface. Both scenarios are set for Mobile, Apr 14 → 29 2024 (16 days), and 1 Condition.

Scenario 1 (Top): 11.3% of analysed traffic (309,828 sessions) in the period Apr 14 → 29 2024 (16 days) of the site. The condition is: INP (Interaction...) User who experienced a INP less than 200 milliseconds on a specific page or page group. The traffic is split: 44.3% on desktop (137,273 sessions), 0.65% on tablet (2,013 sessions), and 55.0% on mobile (170,252 sessions).

Scenario 2 (Bottom): 7.64% of analysed traffic (209,612 sessions) in the period Apr 14 → 29 2024 (16 days) of the site. The condition is: INP (Interaction...) User who experienced a INP more than 200 milliseconds on a specific page or page group. The traffic is split: 20.2% on desktop (42,262 sessions), 1.79% on tablet (3,751 sessions), and 78.0% on mobile (163,565 sessions).

At the bottom, there are buttons for 'Apply', 'Save as new Segment', 'Cancel', and a 'Compare' toggle switch which is currently turned on.

Setup scenario 3

1. Go to Journey Analysis

- Open the Analysis Context and set up the segment based on **Time to First Byte**
- E.g. Users who have experienced a TTFB of less than 600 milliseconds on landing page or any page

2. Set up the comparison

- Select Compare to set up the comparison segmentation so you can view the comparison in a single screen
- E.g. Users who have experienced a TTFB of more than 600 milliseconds on landing page

The screenshot displays the Contentsquare Journey Analysis interface for setting up a comparison. It is divided into two sections, each with a 'COMPARE TO' header.

Top Section:

- Filters: Mobile, Apr 14 → 29 2024 (16 days), 1 Condition
- Summary: 57.8% of analysed traffic (1,584,535 sessions) in the period Apr 14 → 29 2024 (16 days) of the site
- Device Breakdown: 16.0% on desktop (253,568 sessions), 0.89% on tablet (14,169 sessions), 83.0% on mobile (1,315,055 sessions)
- Condition: TTFB (Time T...), User who experienced a TTFB less than 600 milliseconds on any page
- Buttons: + Add condition, + Add a group of conditions

Bottom Section:

- Filters: Mobile, Apr 14 → 29 2024 (16 days), 1 Condition
- Summary: 24.7% of analysed traffic (676,551 sessions) in the period Apr 14 → 29 2024 (16 days) of the site
- Device Breakdown: 17.5% on desktop (118,253 sessions), 0.96% on tablet (6,509 sessions), 81.5% on mobile (551,550 sessions)
- Condition: TTFB (Time T...), User who experienced a TTFB more than 600 milliseconds on any page
- Buttons: + Add condition, + Add a group of conditions

Bottom Bar:

- Buttons: Apply, Quantify, Save as new Segment, Cancel
- Toggle: Compare (checked)

Example of scenario

Landing page: Improve TTFB < 600 ms

Result is statistically significant

Segment B converted **22.6% less** than **Segment A** against the goal **Ecommerce**

This corresponds to **9,048 missed conversions** and **€1,176,240 missed revenue** based on the median cart per session **€130**

If only **25.0%** of **Segment B** sessions converted as well as **Segment A** sessions, you would gain **2,262 additional conversions** and **€294,060 additional revenue**

Segment	Sessions	Conversion rate
A TTFB < 400 ms	4,342,980	2.04%
B TTFB > 600 ms	1,962,705	1.57%

Goal	Goal description
Ecommerce	Visitor behaviour that actually leads to a purchase on the web site

Correlation vs. Causation

Watch out for these two things: If two things happen at the same time, it doesn't mean that one causes the other.

Best practice: Always think of a third factor that could explain this joint evolution.

For Example: If your Core Web Vitals are degrading during Peak Season, don't necessarily assume the increased traffic is slowing down your servers. You may have just attracted a different typology of visitors than usual, who have lower quality web access conditions.

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Appendices

Web Performance Initiative - Next Phase

Performance metrics

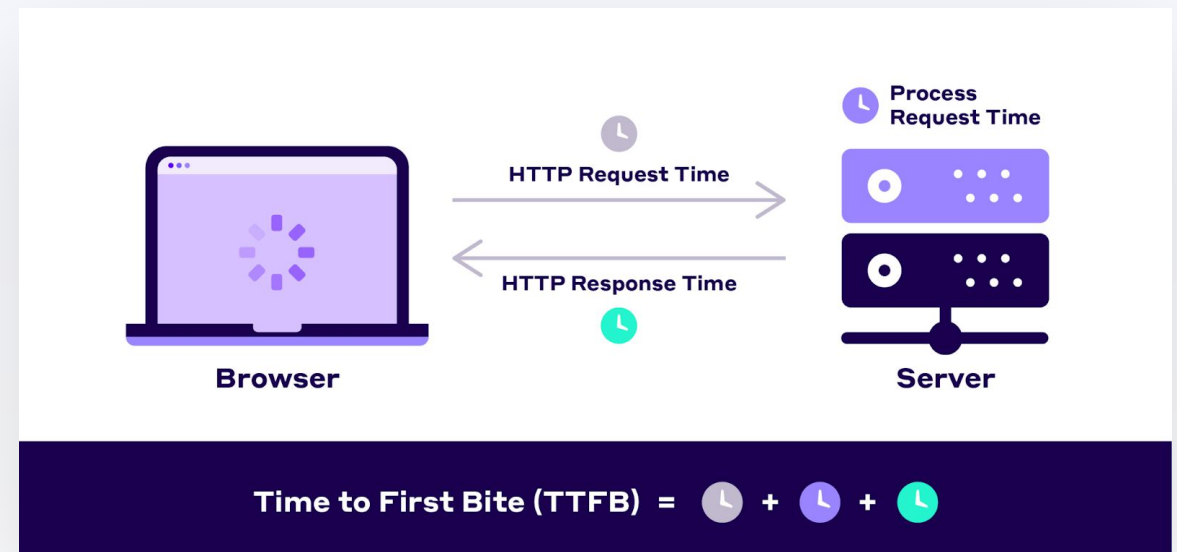
Thresholds Web Vitals - field data

Metrics			Good	Poor
Time to First Byte	TTFB	Other Web Vital	< 800 ms	≥ 1.8 sec
First Contentful Paint	FCP	Other Web Vital	< 1.8 sec	≥ 3.0 sec
Largest Contentful Paint	LCP	Core Web Vital	< 2.5 sec	≥ 4.0 sec
Cumulative Layout Shift	CLS	Core Web Vital	≤ 0.1	> 0.25
Interaction to Next Paint	INP	Core Web Vital	< 200 ms	≥ 500 ms

Time to First Byte (TTFB)

"When does a browser receive the first byte of a response?"

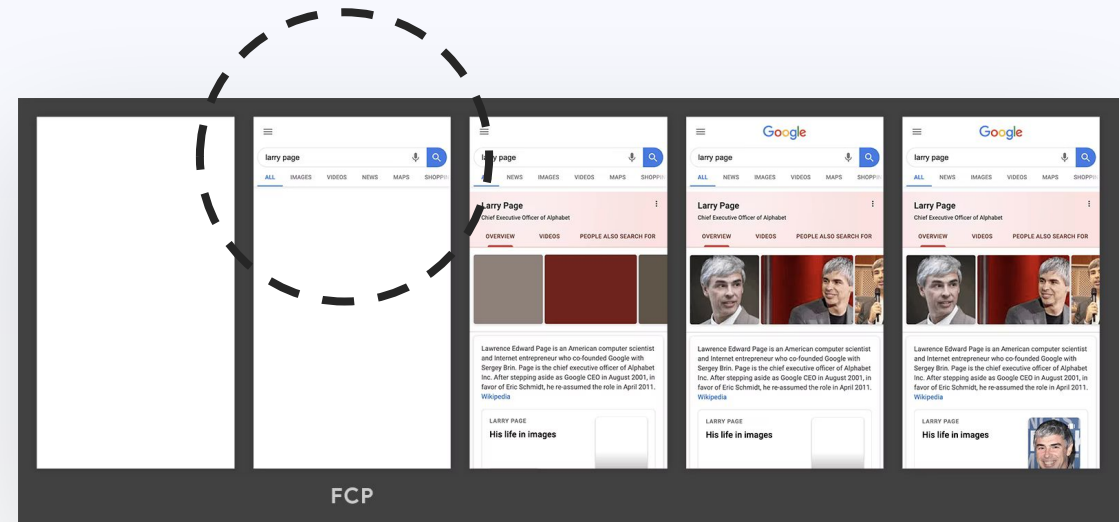
- TTFB is a metric that measures the time between the request for a resource and when the first byte of a response begins to arrive (server response time)
- Important for every resource, but especially for the HTML (the first resource)
- TTFB precedes user-centric metrics such as First Contentful Paint (FCP) and Largest Contentful Paint (LCP)
- Must be faster than 0.8 sec



First Contentful Paint (FCP)

"When can a visitor see anything on the screen or in the viewport?"

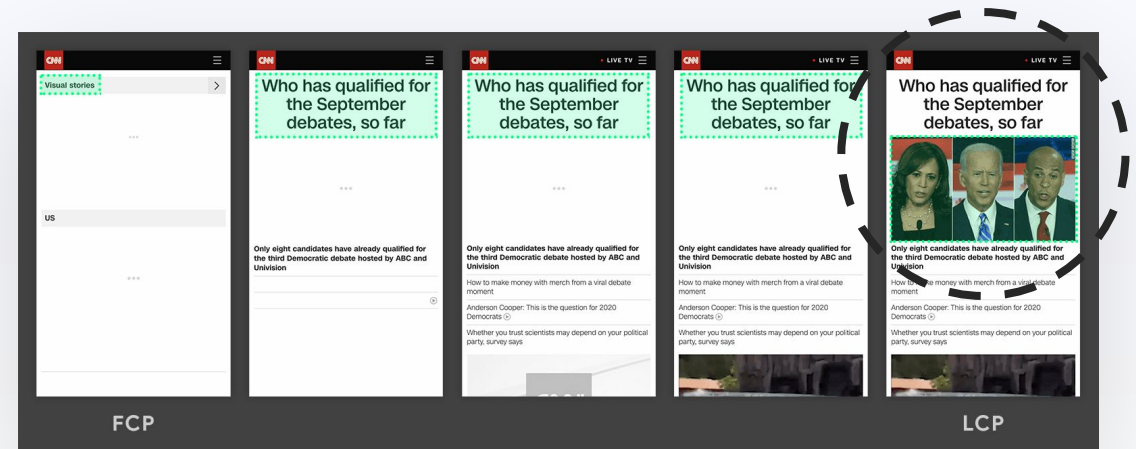
- A fast FCP helps reassure the user that something is happening
- Measures elements such as images and text
- In the load timeline (see image), FCP happens in the second frame, as that's when the first text and image elements are rendered to the screen
- Must be faster than 1.8 sec



Largest Contentful Paint (LCP)

"When is the largest content element in the viewport visible to visitors?"

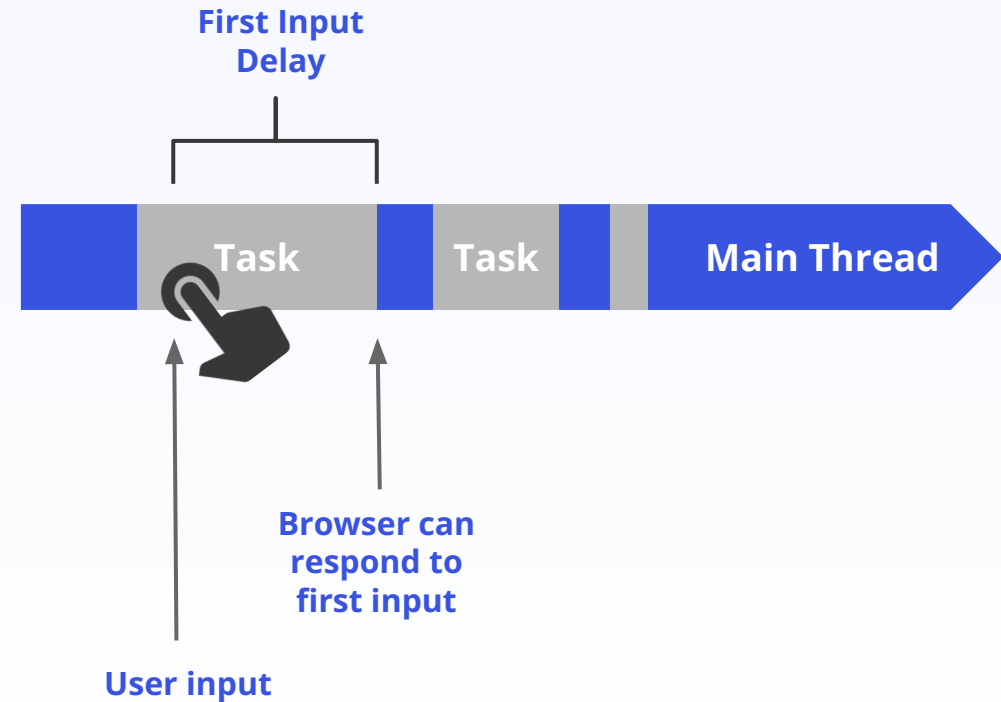
- LCP marks the point in the page load timeline (see images) when the page's main content has likely loaded—a fast LCP helps reassure the user that the page is useful
- Measures elements such as images, video and text
- The largest element may change over time as a larger element is loaded later (see images)
- Must be faster than 2.5 sec



First Input Delay (FID)

"How long is the response time of a page to the first interaction of users?"

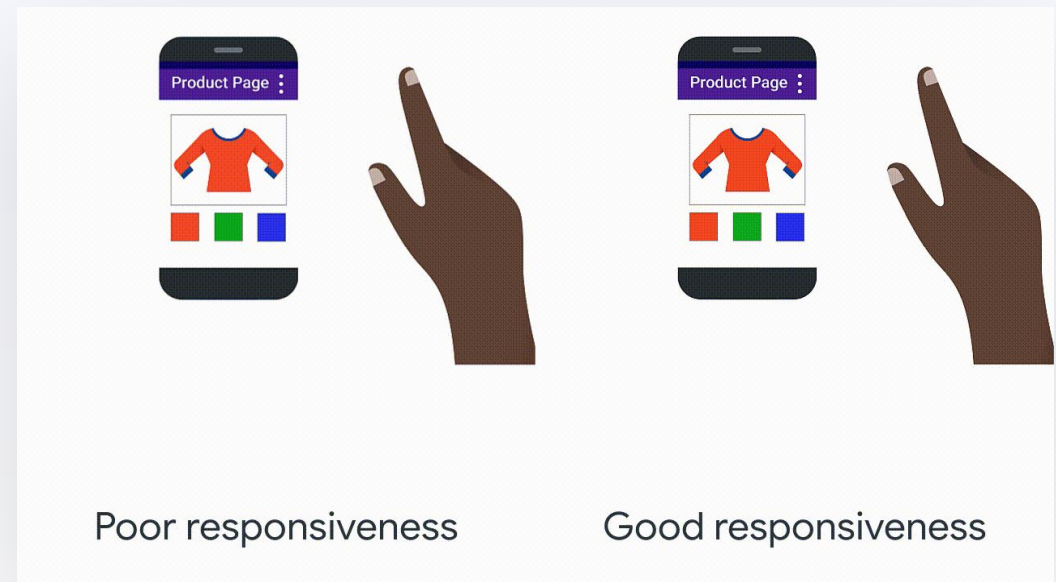
- FID quantifies the experience users feel when trying to interact with unresponsive pages—a low FID helps ensure that the page is usable
- FID measures the time from when a user first interacts with a page (i.e. when they click a link, tap on a button, or use a custom, JavaScript-powered control) to the time when the browser is actually able to respond to that interaction.
- Must be faster than 100 ms



Interaction to Next Paint (INP)

"How responsive is a page to interactions of users?"

- INP logs the latency of all interactions throughout the entire page lifecycle.
- The highest value of those interactions—or close to the highest for pages with many interactions—is recorded as the page's INP. A low INP ensures that the page will be reliably responsive at all times.
- Must be faster than 200 ms

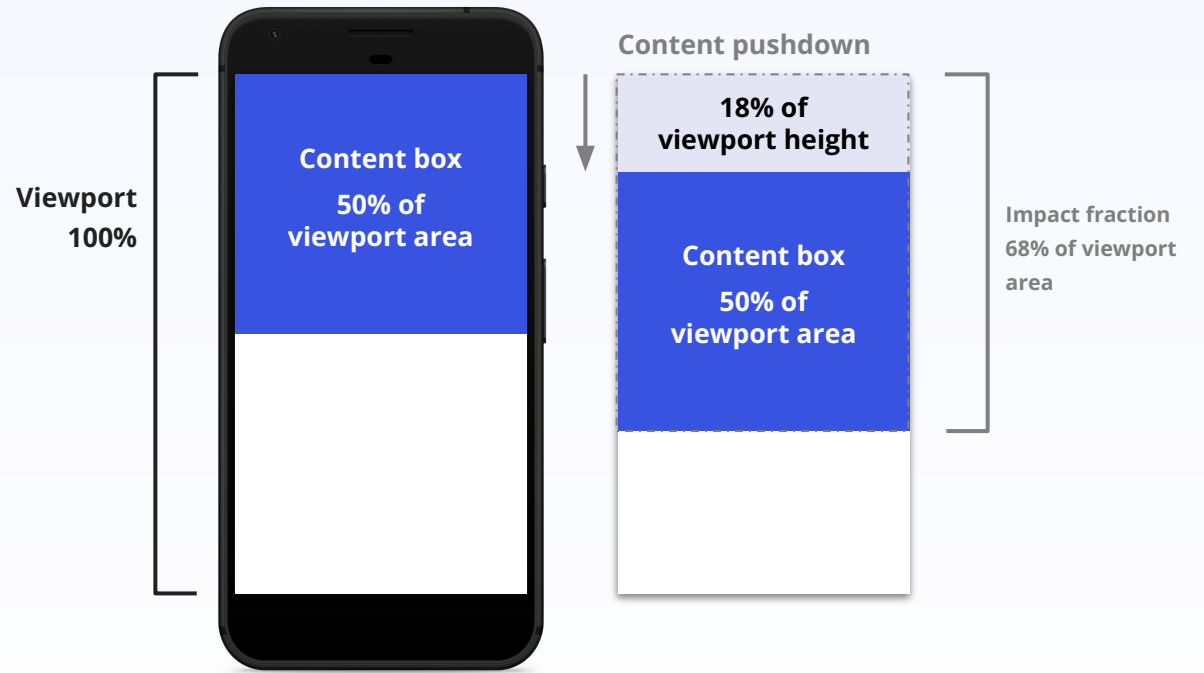


Visual feedback underscores the importance of communicating a result of an interaction

Cumulative Layout Shift (CLS)

"How much of the content shifts while users interact with the page?"

- CLS helps to quantify how often users experience unexpected layout shifts—a low CLS helps ensure that the page is delightful
- Measured while loading and while interacting with the page
- Must be lower than 0.10



$$\begin{array}{l} \text{impact fraction} \quad * \quad \text{distance fraction} \quad = \quad \text{layout shift score} \\ 0.68 \quad \text{affected area} \quad * \quad 0.18 \quad \text{moved distance} \quad = \quad 0.1224 \end{array}$$