

WHAT IS A WEB PAGE MADE OF?

Authors and date

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SUMMARY

The awareness of the environmental impact of digital technology invites us to put our uses in context. In particular, it is important to understand the problems related to web pages. The starting point is simple: web pages are increasingly large and are now several MB in size (2 MB on average, compared to 1.5 MB in 2017 and 700 KB in 2012).

- Evolution of the weight of web pages (HTTP Archive)¹

Even if our Internet connections are getting faster, our web browsing is getting slower, and the impact on the amount of data we consume keeps rising (keeping in mind that not everyone is lucky enough to have an unlimited data package!²). As you will see in this MOOC, the environmental impact increases with the size of the pages.

WHAT IS A WEB PAGE MADE OF?

In the beginning, web pages had only text, presented as HTML³(HyperText Markup Language), a content structuring language. Then came CSS⁴(Cascading Style Sheets): style sheets to define the appearance of content. Then, various languages appeared to add some dynamism as JS (JavaScript)⁵ and its weight which has become very important⁶ and even business logic (filling out your tax return online, for example). The content found on websites has also been enriched with images, music, videos, files, etc. The overall idea is to offer more content, in more varied forms, and to take advantage of the ever-increasing possibilities offered by the Web.

In addition to all this, the business model has changed. To keep the Web free, trackers and advertisements have appeared.

ONLINE ADVERTISING

A few years ago, online advertising already represented 39% of the weight of web pages:

- study on privacy and performance via Mozilla Firefox⁷
- study on the environmental impact of online advertising⁸

On average, nowadays a person sees between 4000 and 10000 ads **per day**⁹. However, this economic model is starting to show its limits¹⁰, especially because it remains difficult to estimate the revenues generated. Many newspapers have taken this path to compensate for the announced decline of the paper press. Today, more and more newspapers are going back to more traditional subscription models¹¹, which provide incentives to produce quality content.

TRACKERS

Trackers are pieces of code designed to collect information about Internet users and in particular about their browsing (pages visited, searches performed, etc.). Google, in particular, provides many tools for this data collection, starting with Google Analytics. Its primary cause for adoption is to allow website owners to know more about the uses of their visitors in order to optimize websites. But it is mainly a way for the web giant to accumulate even more information. However, Google Analytics has a significant environmental impact and these trackers are now present on almost all websites:

- estimation of the environmental impact of Google Analytics¹²
- distribution of trackers on the web (WhoTracks.me¹³)
- 2020 state of play on the collection of personal data on the web¹⁴

Google Analytics has even been deemed illegal in some european countries¹⁵.

WHAT TO DO?

As we have seen, newspapers are paving the way to a lighter web by looking for other incomes than online advertising. More generally, those who create sites must keep in mind as a priority sobriety (less media, more relevant and updated content) but also the optimization of media (images, videos) and tools used.

As a user, it is advisable to look at the side of tools allowing to block ads (uBlock¹⁶) and trackers (Blacklight¹⁷, Ghostery¹⁸).

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