What's Up With Web Platform

With Special Guest Rick

Chrome is how people access the internet and the web, so what exactly is the web platform? Is it just the internet? Today's special guest is Rick, who has worked on input, scrolling and was formerly the director of the Blink web platform team. Currently he's working on transactions.

What is the web platform?

It's what web developers have in mind when writing code, encompassing the intersection of browsers users might use. There is a potential confusion in the term "platform" between Chrome engineers and web developers, where the former think about native platforms (Mac, Windows, Linux), while the latter considers the virtual operating system for web applications.

Web platform and the web ecosystem

Frameworks like React are part of the web ecosystem but not necessarily the web platform. Web platform as the lowest-level API surface area, representing the boundary between the user land and kernel of the web operating system. Open web, described as a consensus platform that is not owned by a specific company. The open web allows anyone to build a browser, convince users to adopt it, and contribute to the development of the web platform through browsers and web standards.

Compatibility across different browsers

The browser itself has become a meta-platform, and various browsers must work together to provide a seamless experience for users. Many factors contribute to cross-browser compatibility. While standards are recognized as crucial, there are additional elements, such as competition, cloning, and conformance test suites, that play significant roles. The role of conformance test suites, particularly the web platform test suite shared among browser vendors, is ensuring interoperability. Passing these tests is as important, if not more so, than adhering to standards. The line between standardization and flexibility is intentionally blurry to allow innovation and competition among browsers. Site isolation as a browser-specific feature impacts developers' code, the balance between standardization and the ability for browsers to vary their behavior.

"Breaking changes"

In the context of the web platform, breaking changes are alterations to the contract between developers and the platform, potentially causing previously written code to function differently. Making all code written for the web behave identically forever would hinder progress, especially when improving performance or addressing privacy concerns.
Trade-offs are there between keeping existing web pages functional and making necessary improvements or changes. It's difficult to find the right balance and mentions the responsibility to minimize breaking changes. It's complicated evaluating breakage severity and the importance of data-driven decisions. Some alterations may be necessary for security or privacy reasons. E.g. The need to involve users, such as removing third-party cookies for improved privacy, are driven by user preferences.

Web platform specs

Each web platform feature typically has a specification, and while there might be different versions or drafts, they generally follow a living standards philosophy. Chromium teams have the responsibilities to ensure consistency between the spec and the implementation. The ultimate goal is to have specs on a standards track, indicating that they are expected to become widely adopted standards with multiple conforming implementations. There is a delicate balance between maintaining the pace of web evolution and moving towards a more interoperable and standardized web. Different organizations play a role in creating specs, e.g. W3C, WHATWG, ECMA (for JavaScript), and IETF (for lower-level networking). The collaboration of HTML development between W3C and WHATWG eventually led to a unified approach. Many new APIs often start in more lightweight forums. The diversity of contributors in the standards world extends beyond browser vendors and includes individuals, hobbyists, and companies with specific API needs, e.g. Bloomberg's investment in the CSS Grid feature.

What is Igalia?

It's the leading contributor to Chromium outside of Google. Igalia is a collective of independent consultants and open-source experts for hire, specializing in web browsers. Google sometimes hires Igalia for specific projects, highlighting the collaborative nature of the open-source community.

Chrome vs. Chromium

Major differences are licensing such media codecs. Google has been trying the best to ensure changes in Chromium are well-documented and compatible, involving a public debate on specifications.
There are challenges of maintaining an open web while making changes in Chrome that might influence other browsers. Google aims for a delicate balance, being accountable to users while fostering interoperability and standards-based practices. There is a growing use of Chromium in various devices, such as cars and embedded systems. Expanding Chromium's use beyond web browsers can be hard due to difficulty defining reasonable repository boundaries to avoid maintenance burdens.

Video timestamps

0:25 What is the web platform?
1:35 Web ecosystem
3:32 Compatibility across different browsers
7:09 Breaking changes
14:31 Web platform specs
24:01 Igalia
29:54 Chrome vs. Chromium