Single Page Applications - The failure of the web

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1 Background

The web in the current age is hailed as the platform that exists everywhere. If you need an application to work everywhere, and not worry about rewriting your application to support new platforms, you generally choose the browser as your targetted platform. This is enhanced even more by mobile frameworks which execute web based code within the application, and provide access to mobile phone features from within the app[1].

The only problem is navigating to new pages requires loading the page from the server, constructing a DOM[2] and downloading styles and images. While web browsers are becoming faster, this still takes a noticeable amount of time, especially on a slow internet connection.

Single Page Applications solve this problem by downloading the entire website all in one go. Clicking on a link no longer requires fetching any html or styles, and the DOM is already built. Applications such as G-Mail[**?**] are built completely upon this concept, and it gives them the feel of a native application.

2 Why is SPA needed?

If we look at Table 1
[3]

[1] Phonegap is one of the many frameworks which allow you to do this

[2] Document Object Model - A tree which represents the HTML document and allows access to it

[3] http://aosabook.org/en/posa/high-performance-networking-in-chrome.html

Action	Time Taken	Notes
DNS	50ms	
TCP handshake	80ms	1 round-trip
SSL handshake	160ms	2 round-trips
Request to Server	40ms	
Server Processing	100ms	
Reponse from Server	40ms	

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Table 1: Time taken for a typical web request