

HOW TO STAY RELEVANT AS GOOGLE TRANSFORMS THE WEB



The Retailer's Guide to Progressive
Web Apps, Accelerated Mobile Pages,
and Web Payments



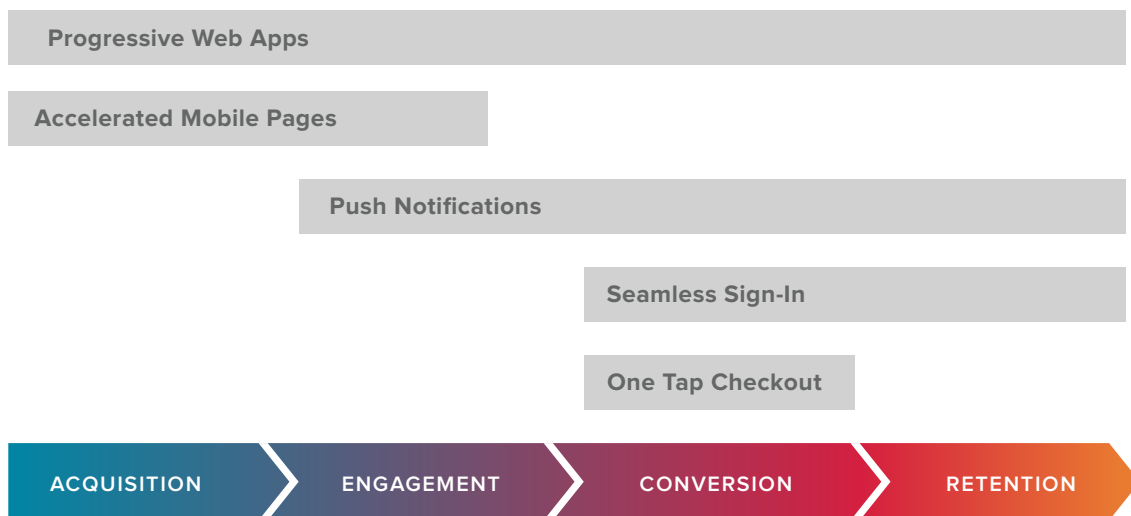
Introduction

Google is changing the way the web works, from search to SEO to performance to the shopping cart. Retailers who aren't adjusting their strategy will struggle to stay relevant.

Google's latest announcements around Accelerated Mobile Pages (AMP), Progressive Web Apps (PWA), and Web Payments are threads in a larger pattern. The world's biggest shopping platform – the web – is fundamentally transforming to meet the demands and opportunities of mobile.

Spanning the Entire Customer Journey

The emerging set of new technologies span the entire customer journey from customer acquisition to engagement, conversion, and retention.



The New Web Experience: Progressive Web Apps

The new web experience is reliable, fast, and engaging – thanks to Progressive Web Apps.

Progressive Web Apps bring app-like speed, interactions, and engagements to the web. Shoppers no longer need to download an app for a fast, frictionless shopping experience. These next-generation web apps have been in the market for over a year now and there's a long list of brands seeing very strong results – showing that Progressive Web Apps are maturing and no longer limited to early adopters.

A SAMPLE OF BRANDS EMBRACING PROGRESSIVE WEB APPS INCLUDE:



Alibaba recently smashed sales records on Singles Day, attributing a 76% increase in mobile conversions to its Progressive Web App.¹



CNET notably features offline capabilities and rich app-like navigational experiences (think Tinder).



PureFormulas saw a 23% increase in revenue per session with its Progressive Web App.



Lyft drastically reduced the sign-up funnel for new users. When the 40kb web app is at the customer's disposal (along with push notifications and web payments) there's no need for a large 75mb app download and payment registration process.



Housing.com cites 30% faster page loads, 10% longer sessions, 40% lower bounce rates, and 38% more conversions since switching to a Progressive Web App.



FlipKart's Progressive Web App doubled its conversions during sales events, significantly reduced bounce rates, and resulted in 70% less support tickets.²

Overall, Progressive Web App momentum is building. There are now 2 billion active Chrome installs, and Microsoft Edge, Mozilla, Firefox and Opera have all declared support for Service Workers in 2017 – which means supporting Progressive Web Apps in their entirety.

Over the next year, Progressive Web App support across browsers will see a significant shift, to the point where the iOS Safari team won't be able to ignore the quantifiably better user experience that Android users will be benefiting from.

What's a Service Worker?

A service worker enables features that don't require a web page or user interaction. It's a script the browser runs in the background, independent of the web page, to bring app-like features to the web such as offline experiences, background syncs, and push notifications.³

1. <https://techcrunch.com/2016/11/11/alibaba-singles-day-2016/>

2. Chrome Dev Summit 2016

3. <https://developers.google.com/web/fundamentals/getting-started/primers/service-workers>

Ramp Up Customer Acquisition with Accelerated Mobile Pages

Accelerated Mobile Pages (AMP) is a Google-led open source initiative for creating and publishing mobile-optimized content. Traditionally, AMP has been geared towards publishers who create and publish content, but it's expanding to other use cases, most notably, mobile commerce.

The Chrome team is gearing up to release a first cut of ecommerce-enabled AMP components by building off the open source contributions from companies such as Pinterest, Shopify and Microsoft.

All AMP pages are cached by Google, so the landing page appears to load instantaneously when customers click through. Because Google exposes AMP pages within their search results, and then creates instant mobile experiences, it will play an important role in customer acquisition.

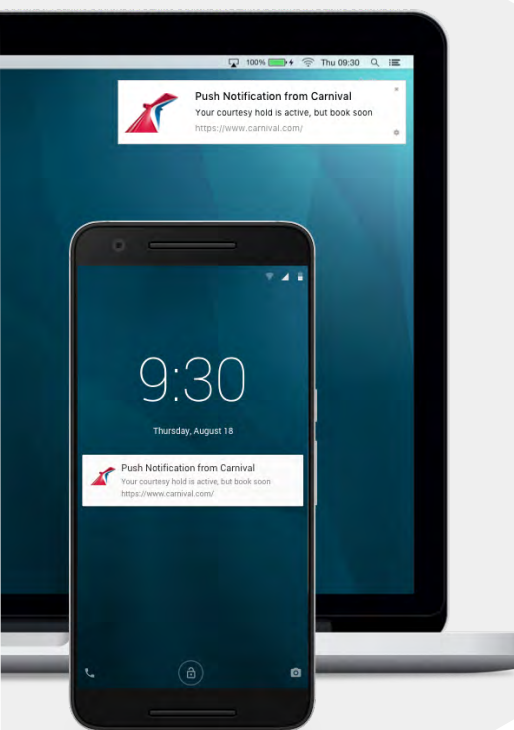
AMP will reduce bounce rates on first time visits, and then preload the associated Progressive Web App so that the rest of the shopping experience is just as seamless. The transition from AMP pages to Progressive Web Apps, labeled the “AMP down” model, will introduce a blazingly fast user experience given that the majority of the Progressive Web App resources can be downloaded in the background while the shopper views the cached AMP page.

Given that the average mobile website takes 19 seconds to load and contains 214 server requests, AMP is a welcomed initiative to bring mobile performance back in line with customer expectations.⁴

Drive Engagement and Revenue with Web Push Notifications

Web push notifications can be used to engage, convert, and even retain customers. This engagement tool sends timely, contextual messages to shoppers on the web – even when their browser isn't open. The low noise channel is a great opportunity for retailers to bypass the customer's overflowing inbox.

Adoption of web push is growing, evidenced by the 18 billion web push notifications sent daily from 50,000 different domains. Retailers that aren't incorporating web push notifications into their engagement strategy are missing out on a big opportunity to build stronger customer relationships and drive revenue.



4. https://docs.google.com/viewerng/viewer?url=https://storage.googleapis.com/doubleclick-prod/documents/The_Need_for_Mobile_Speed_-_FINAL.pdf

Eliminate Drop-offs with One Tap Checkout

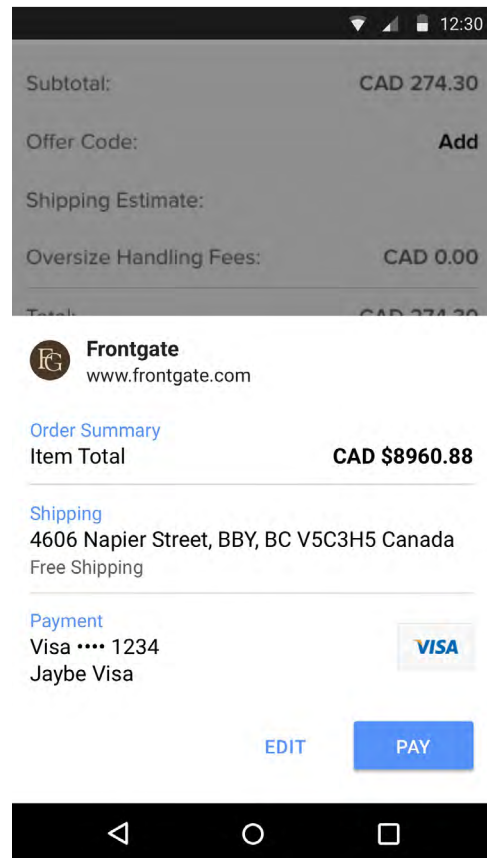
One Tap Checkout (via Payment Request API), along with Seamless Sign-In (via Credentials Management), will tackle the two highest friction points where customers drop-off on mobile: remembering passwords to sign in, and filling out complex payment forms. Both introduce native browser capabilities to standardize a process that has been fractured across proprietary offerings from payment and social sign-in providers.

One Tap Checkout is currently more widely available than Seamless Sign-In, as evidenced by a large set of launch partners including Mobify customer PureFormulas. With the Payment Request API, a one tap checkout is possible for straight-forward checkouts, but it doesn't support more complex use cases just yet.

To expand the ability for retailers to adopt One Tap Checkout, the Chrome team is working with partners like Mobify to expand the specification to support further use cases.

We can expect to see enhancements in 2017, such as 3rd party payment support beyond Android Pay, Optical Character Recognition (OCR) scanning of credit cards, and address type support.

Firefox, Mozilla, Opera, Microsoft Edge and desktop Chrome have all declared support for One Tap Checkout in 2017.



Identify Your Customer with Seamless Sign-In

The cross-device Seamless Sign-In demo was the most impressive [demo](#) at the 2016 Chrome Dev Summit, but realistically, the furthest of these technologies from wide adoption.

Fulfilling a marketer's dream, anyone signed into a Chrome browser with their Google ID will be automatically logged into sites that support the new Credentials Management API. This Seamless Sign-In works even on devices that have not logged into the specific site before, thanks to the syncing of credentials information by the browser.

This feature is great news for marketers as session management is challenging. Unlike native apps that can keep you logged in forever, traditional web apps have had to manage session tokens and cookies to keep track of the customer's identity on a single browser. Early results have been significant as AliExpress has cited a 11% increase in conversion rate, while the Guardian has seen a 44% increase in cross-device logins.⁵

The main impediment for this feature will be the lack of cross-browser support, as other browser vendors like Mozilla and Firefox won't have the same single ID as Google to support cross-device syncing. But given the dominant market share of Android devices, retailers implementing Seamless Sign-In will see a significant impact regardless.

Overall, retailers should be excited by how the web is transforming to eliminate common barriers to conversion in the customer journey. As adoption of these latest browser standards expands in 2017, implementing these features will result in increased engagement, revenue and customer loyalty.

A New Era for Performance on the Web

Mobile customers are goal-driven, which means they'll drop-off if they can't achieve their objective quickly. Despite the high performance expectations from shoppers, mobile performance in retail is in a poor state. A recent study from Double Click found that, "3 out of 4 mobile sites take longer than 10 seconds to load and the average time to load is 19 seconds."⁶

The Chrome Challenge

At the 2016 Chrome Dev Summit, the Chrome team issued a challenge to all brands:

Deliver a mobile experience that is **interactive in 5 seconds over a 3G network on an average device.**

ACHIEVING THIS REQUIRES:

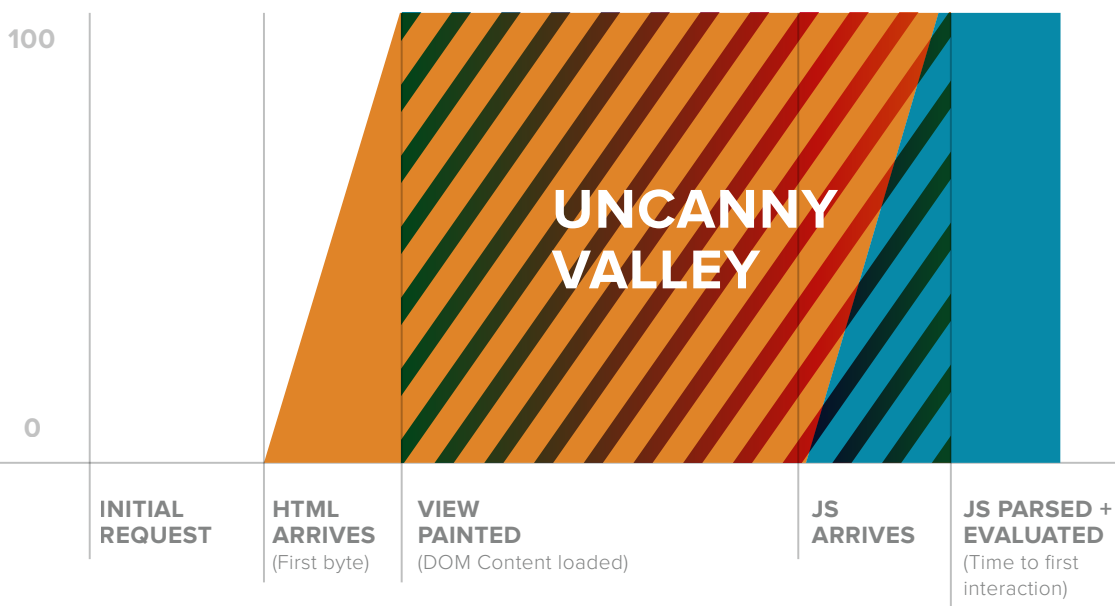
1. **Testing on real devices.** Teams are guilty of testing on desktop simulators or their shiny new \$600 smartphone, but the real world uses an average Android device over a 3G network.

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5. Chrome Dev Summit 2016

6. https://docs.google.com/viewerng/viewer?url=https://storage.googleapis.com/doubleclick-prod/documents/The_Need_for_Mobile_Speed_-_FINAL.pdf

2. **Testing on real networks.** Corporate wifi, and even simulated network throttling, may not uncover performance issues that your customers will experience. As the next billion mobile users come online, the mobile environment will become even more hostile to performance.
3. **Measuring time to first meaningful interaction.** Teams are good at measuring time to first byte, time to DOM (Document Object Model) content loaded, or time to page load, but what really matters is when the shopper can interact to initiate their journey. Google cites the time between the request and interaction as the “uncanny valley.”



Source: Chrome Dev Summit 2016

Getting your website interactive in under 5 seconds on a 3G network seems daunting, especially considering most mobile sites send the entire desktop payload over the 3G network. Luckily, the Chrome team and early adopters of Progressive Web Apps have a variety of techniques that your team can implement to achieve these lightning fast speeds – some have gotten the time to interactive down to as low as 1.7 seconds over a 3G network.

Caching for Speed

Your caching strategy can have a big impact on performance. The spectrum of caching typically ranges from Browser Only Caching (just letting your browser handle it) to Full Cache Control, which uses service workers to provide offline and caching capabilities. Offline would be fully enabled to cache everything and still function.

The recommendation is to use a combination of these two. Use service workers and offline features to cache the app shell and critical assets, and let the browser handle the rest.

Low Time to Interactive with PRPL

Caching itself is built into a pattern the Progressive Web App team is promoting called PRPL.⁷ Fundamentally, PRPL combines several recent techniques to achieve a low time to interactive metric:

- Utilize the new capabilities of HTTP/2 server push or preload links to load resources from the server to the browser ahead of time. This is a fundamentally different model as traditionally we see a waterfall pattern of resource loading that elongates the time to first interaction due to an unnecessary dependency chain.
- Implement route-based chunking via tools like WebPack to pre-cache and lazy-load routes.⁸ This technique essentially splits any underlying javascript code into smaller code chunks to support the “less code, loaded better” recommendation.

Measuring for Continuous Improvement

The top tools for measuring performance are Google’s [Lighthouse](#) for scoring against Progressive Web App best practices, and [Webpage Test](#) for real-world testing across devices and locations. Integrating both tools into your continuous integration pipelines can help identify issues that impact your time to interaction metrics.

Mobile web has come a long way in the last several years, and performance remains one of the major hurdles to overcome. With the growing popularity of Progressive Web Apps and underlying service worker support, the next year is critical for retailers to meet shopper expectations on experiences that feel instantaneous.

No Time to Waste

Google’s latest technology proves that the web as a platform is capable of creating reliable, fast, and engaging experiences that were previously limited to native apps. These new experiences are already shaping customer expectations, and as adoption of Progressive Web Apps (and the associated technologies from Google) continues to grow, retailers who aren’t up to speed will struggle to stay relevant.

7. <https://developers.google.com/web/fundamentals/performance/prpl-pattern/>

8. https://medium.com/@addyosmani/progressive-web-apps-with-react-js-part-2-page-load-performance-33b932d97cf2#.vpg0iu57hgoogleapis.com/doubleclick-prod/documents/The_Need_for_Mobile_Speed_-_FINAL.pdf



Partner with Mobify to take advantage of all the latest technologies from Google.

Mobify is always ahead of the curve thanks to our early-access partnerships, enabling us to build new features into the Mobify Platform so they're ready for launch day.

The Mobify Platform is a leading mobile customer engagement solution for retailers and brands that want to boost revenue, keep up with customer expectations, and protect their competitive edge. The core of Mobify's platform is Progressive Mobile and Engagement Marketing. Progressive Mobile delivers a unified customer experience across mobile web and apps, while Engagement Marketing builds customer relationships through push notifications and store drivers. Leading global brands including Burlington Coat Factory, Dollar Tree, Matalan, British Telecom, Crocs, Carnival Cruise Line, Bosch, Superdry, Eddie Bauer, PureFormulas, and Tommy Bahama generate extensive revenue through the Mobify Platform and rely on Mobify to grow their customer lifetime value.

To learn more about taking your mobile customer engagement strategy to the next level, visit www.mobify.com or contact us:

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