Understanding Progressive Web Apps

and Why You Should Care

mediacurrent

September 13, 2019

Today's Agenda

Mark Shropshire

Senior Director of Development

in /in/markshropshire

🐦 @shrop

Over his 20 plus year career leading technical teams, Shrop gained experience in IT roles at a large urban research university and nationally recognized award-winning graphic communications company. Through these experiences, Shrop has learned to lead others with an eye on the big picture, while getting into the details as a software developer, systems architect, and system administrator. One of his proudest accomplishments has been his role in building a stronger technical community in the Charlotte region. For the past several years, Shrop has served as the community co-organizer for the Charlotte Drupal Drive-In event, hosted by CharDUG (Charlotte Drupal User Group) where Shrop is a co-founder. He is a frequent public speaker around meetups and conferences, talking about leadership, technology, productivity, and mentorship.

About Mediacurrent

Who We Are

Mediacurrent is a full-service digital agency that implements world class open source software development, strategy, and design to achieve defined goals for enterprise organizations seeking a better return on investment.

What Are Progressive Web Apps (PWAs)?

Progressive Web Apps

In 2015 [Alex Russell](#) and [Frances Berriman](#) coined the name Progressive Web Apps to describe a collection of open web APIs and progressive enhancement strategies that allow for cross-platform compatibility. PWA user experience rivals that of native applications.

"

These apps aren't packaged and deployed through stores, they're just websites that took all the right vitamins.
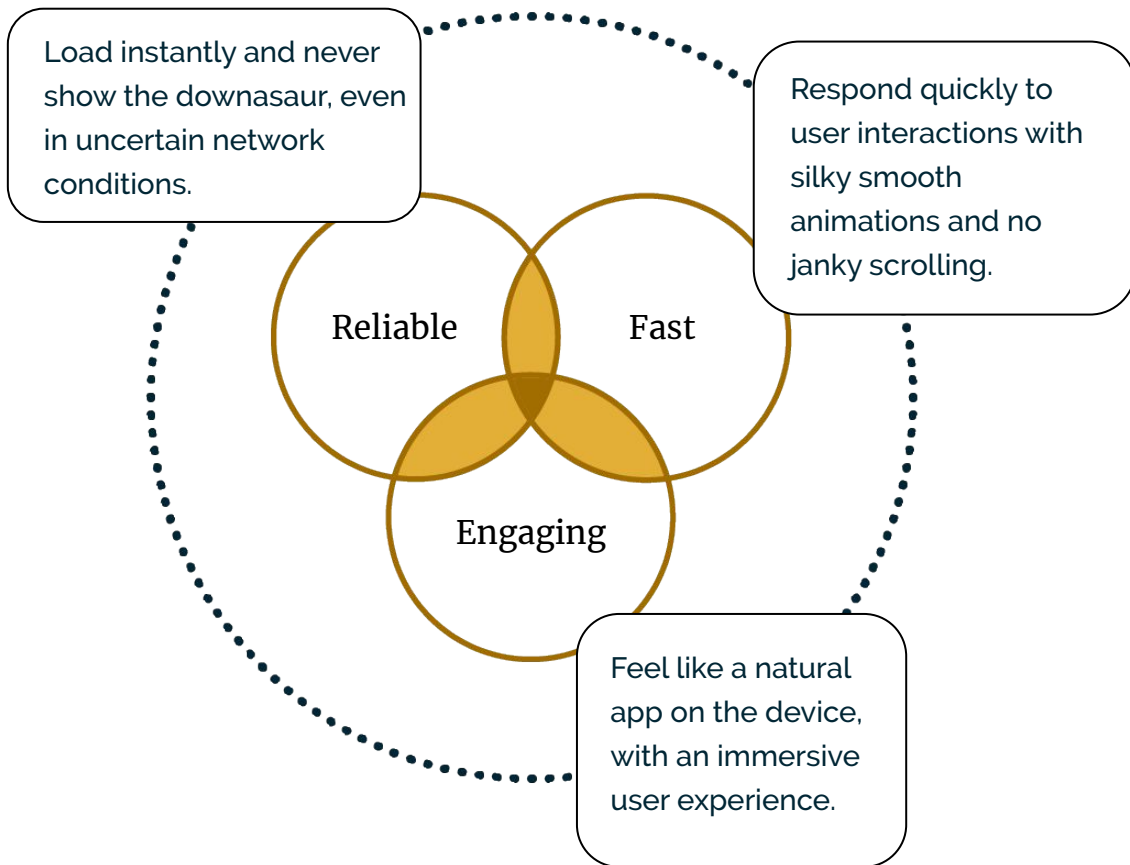
Alex Russell
Senior Staff Software Engineer at Google

PWA UX

Google defines Progressive Web App user experience with these three core tenets

Load instantly and never show the downasaur, even in uncertain network conditions.

Respond quickly to user interactions with silky smooth animations and no janky scrolling.

Feel like a natural app on the device, with an immersive user experience.

Reliable

Fast

Engaging

PWA Principles

Discoverable

Installable

Linkable

Network
independent

Progressive

Re-engageable

Responsive

Safe

Demos

Lighthouse: https://app.starbucks.com

Browser features: https://whatwebcando.today

Offline: https://offline-plugin.now.sh

Appscope - Progressive Web Apps Examples

A selection of Progressive Web Apps
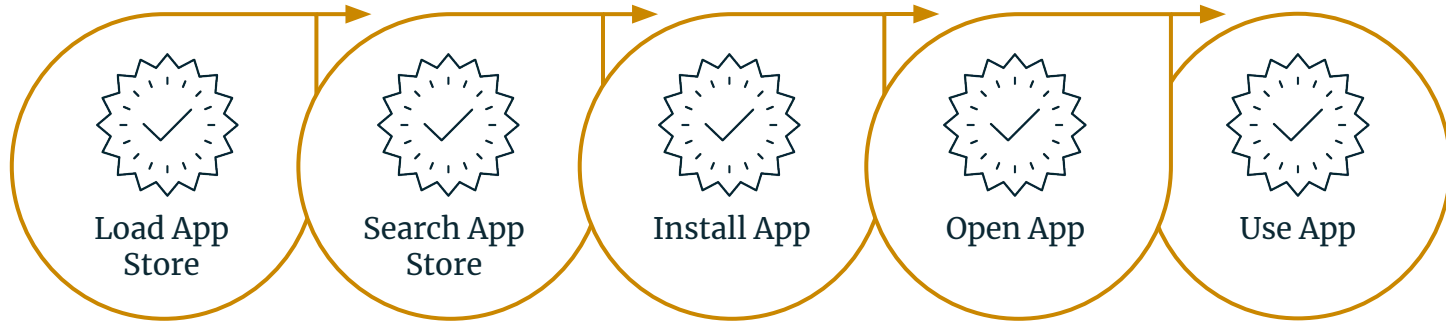
Why PWAs Are Important to Your Users

"

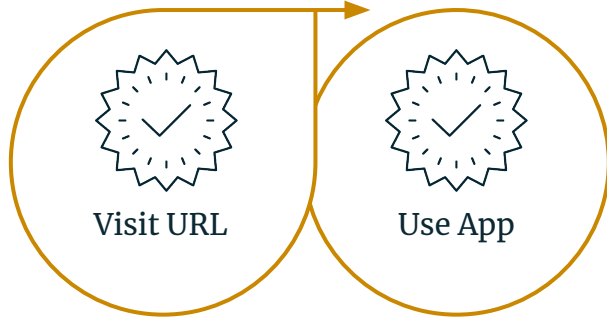In a consumer mobile app, every step you add to your onboarding flow will cost you about 20% of users.

Gabor Cselle
Partner at Area 120

Native App Flow

Load App Store → Search App Store → Install App → Open App → Use App

PWA Flow

Visit URL → Use App

Twitter Lite PWA

https://mobile.twitter.com

"Twitter Lite is now the fastest, least expensive, and most reliable way to use Twitter. The web app rivals the performance of our native apps but requires less than 3% of the device storage space compared to Twitter for Android."

- 65% increase in pages per session
- 75% increase in Tweets sent
- 20% decrease in bounce rate

- Weekly active users on mobile web have increased 103% year-over-year overall
- 156 percent increase in Brazil and 312 percent increase in India
- Pins seen increased by 401 percent and people were 295 percent more likely to save a Pin to a board

https://medium.com/pinterest-engineering/a-one-year-pwa-retrospective-f4a2f4129e05

When You Should Build a PWA

When You Should Build a PWA

A: Always!

Seriously, you can always use PWA patterns even if you don't go in 💯

When to Build a PWA

User Experience

PWAs allow users to have native-like application experience. Applications can work and feel more like native applications on mobile and desktop. PWAs have Improved performance and offline access vs. traditional web sites.

Conversions

PWAs can help improve conversions through performance and native-like functionality. They can also improve conversion of users to your fully native mobile applications.

Budget

PWAs are good when there is a lack of budget for native application development. Existing web development team can build PWAs much easier than native applications because they can continue to use HTML, CSS, and JavaScript.

When to Develop Native Applications

Speed

When you need maximum speed of the target devices(s). Generally, PWAs will not be as fast as native application languages and SDKs.

App Stores

Native applications make sense when you need to be in a App Store such as Apple App Store or the Google Play Store.

Note: There are ways to migrate PWAs to app stores.

Feature Access

Native application SDKs provide direct access to the latest hardware and features available in each platform. Some platform features are only accessible from native applications (e.g. Push notifications in iOS).

How to Build a PWA

Baseline Criteria for PWAs

HTTPS   Web App Manifest   Service Worker
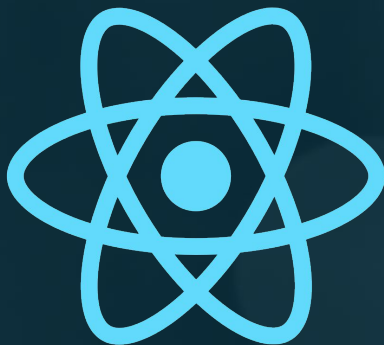
PWA Builder Demo

PWA Builder

- It must run under HTTPS
- It must include a Web App Manifest
  - https://www.gatsbyjs.org/packages/gatsby-plugin-manifest
- It must implement a service worker
  - https://www.gatsbyjs.org/packages/gatsby-plugin-offline

https://www.gatsbyjs.org/docs/progressive-web-app

- It must run under HTTPS
- It must include a Web App Manifest
  - Update the provided public/manifest.json as desired
- It must implement a service worker
  - Switch serviceWorker.unregister() to serviceWorker.register() in src/index.js

    https://create-react-app.dev/docs/making-a-progressive-web-app

Drupal PWAs?

Progressive Web App module

See the DrupalCamp Atlanta talk: Meet the Progressive Web App module

Tools and Resources

PWA Documentation

https://developers.google.com/web/progressive-web-apps

https://www.youtube.com/watch?v=psB_Pjwhbxo&list=PLNYkxOF6rcIB2xHBZ7opgc2Mvoo9X87Hh

https://developer.mozilla.org/en-US/docs/Web/Progressive_web_apps

Tools

https://developers.google.com/web/tools/lighthouse

https://www.pwabuilder.com

https://whatwebcando.today

Tools

https://letsencrypt.org

https://realfavicongenerator.net

https://developers.google.com/
web/tools/workbox/

Thank you!

@Mediacurrent

Facebook.com/mediacurrent

@Mediacurrent

Mediacurrent.com