

Are Progressive Web Apps the Future of Web Development?



Format of this talk

- 5 minutes Ignite style (20 slides, auto-run mode, 15 secs each).
- 30 minutes of mob programming (4 engineers will be working on the app together using github to send PRs).
- 5 minutes for questions.

```
return (  
  <Profile  
    name="Oren Golan">  
    job="SDM, Amazon Video"  
    location="Seattle"  
    website="oren.github.io"  
  </Profile>  
)
```



What are PWAs

(the developer's version)

Native-level experience that works reliably on both desktop & mobile. Key concepts are performance & responsiveness.

What are PWAs

(the product manager version)

A way to improve the following:

- Conversion rate
- Page visits
- User time spent on app
- Quicker time to market

Show Case 1 - AliExpress

AliExpress increases conversion rate for new users by 104% with new Progressive Web App

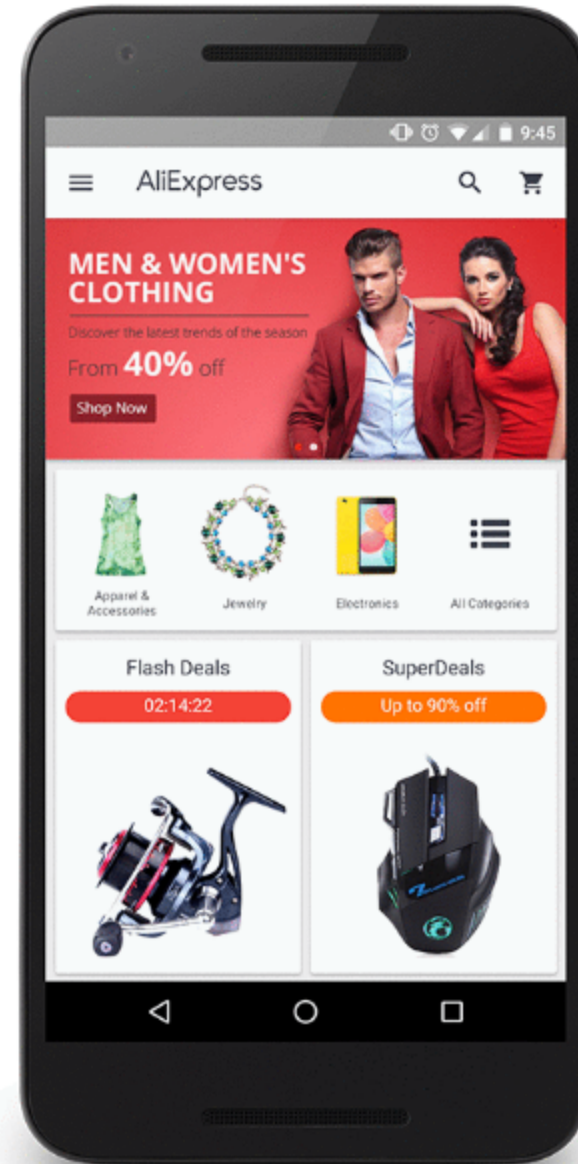
Results

- ✓ 104% for new users across all browsers; 82% increase in iOS conversion rate
- ✓ 2X more pages visited per session per user across all browsers
- ✓ 74% increase in time spent per session across all browsers

[DOWNLOAD PDF CASE STUDY](#)

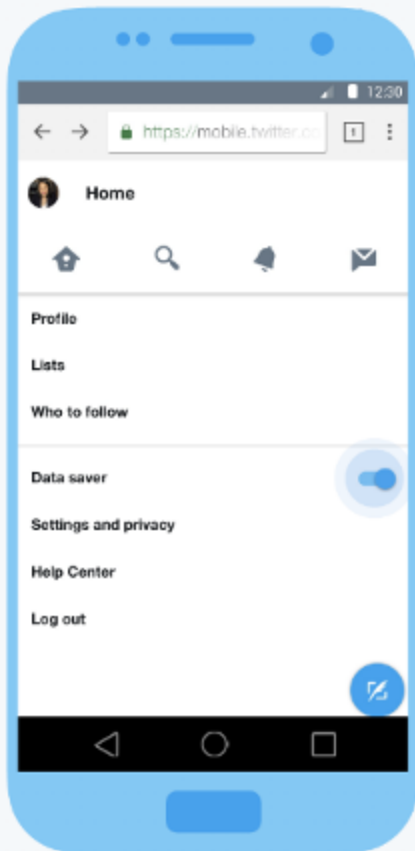
About AliExpress

"Smarter shopping, better living!" is the motto of AliExpress, a website where shoppers can buy everything from baby clothes to refrigerators directly from China. Part of the Alibaba Group, the global online retail marketplace is now a popular e-commerce site in America, Russia, and Brazil.



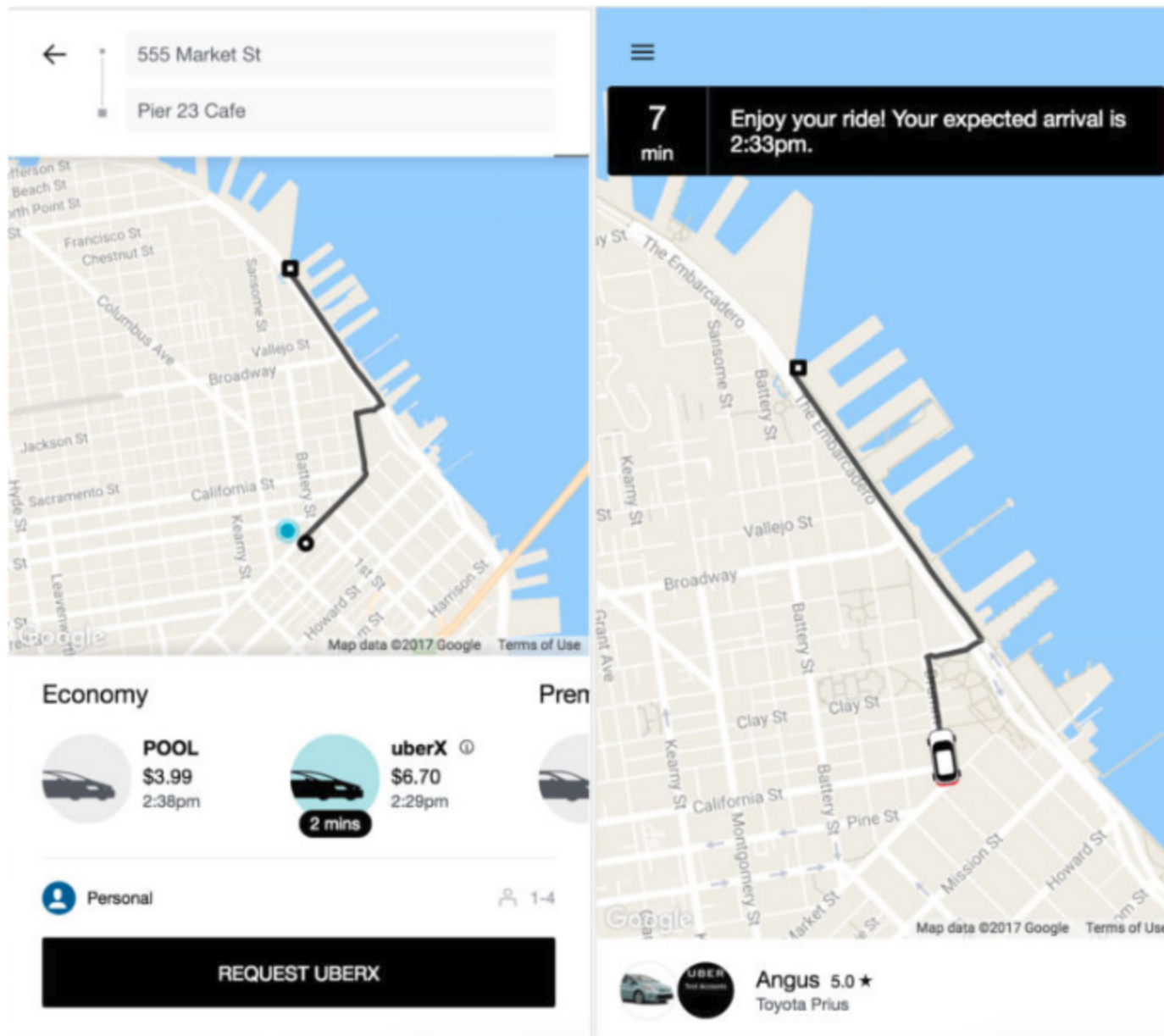
Show Case 2 - Twitter

- 1 Tap your profile picture. Turn on the new “Data saver” setting.



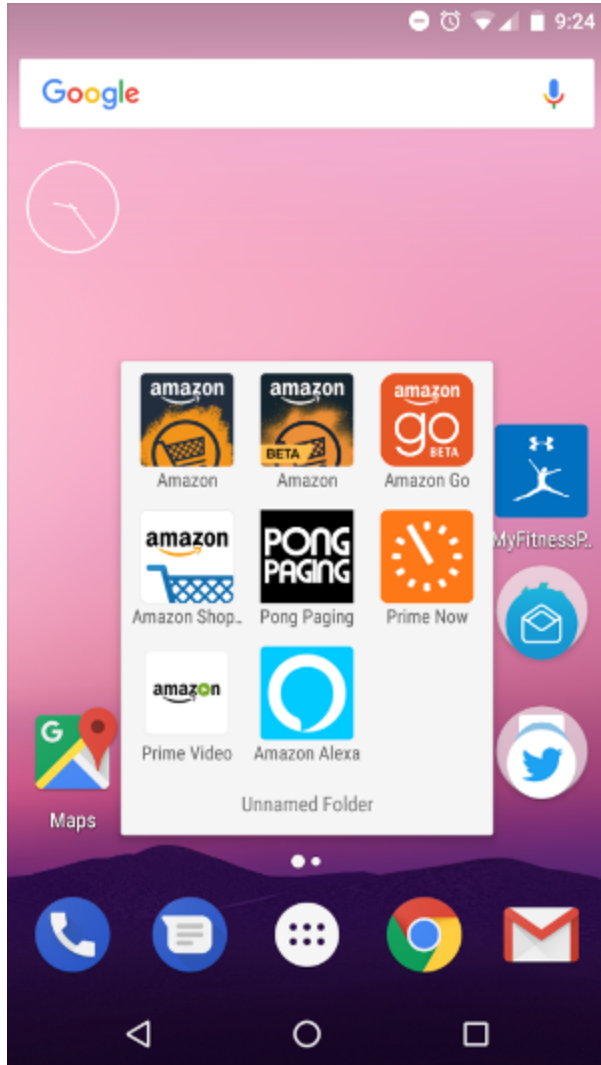
2 Images will now appear blurred for preview. Tap on any image to load and view.





m.uber mimics the native Uber app flow, allowing riders to specify their ride request and track driver location after being matched.

Not Everyone Lives in a Wealthy Nation



How to Achieve a Native-like Experience?

- Available offline/weak network using Service Worker.
- Measure performance with the tool Lighthouse.
- Icon on home screen.
- (Android/Mozilla/IE) App-like 'loading' page, no URL, push notification and more.

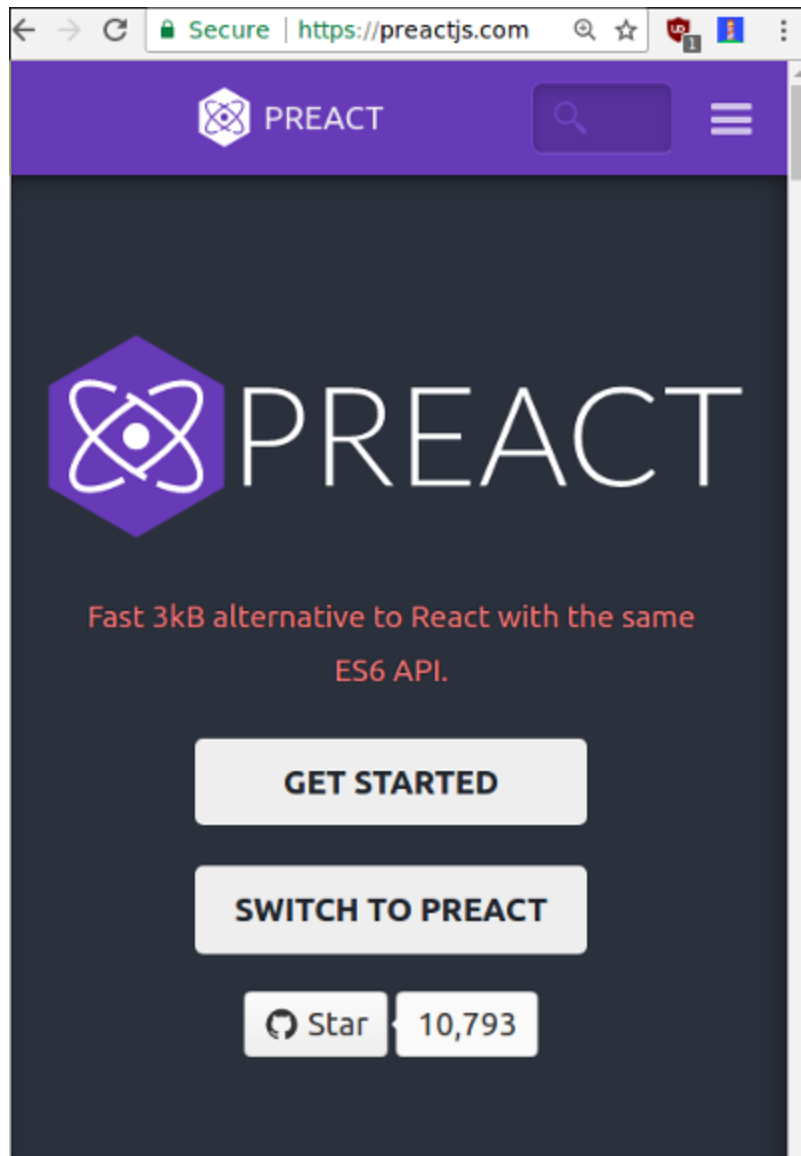
Apple



The PRPL Pattern

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

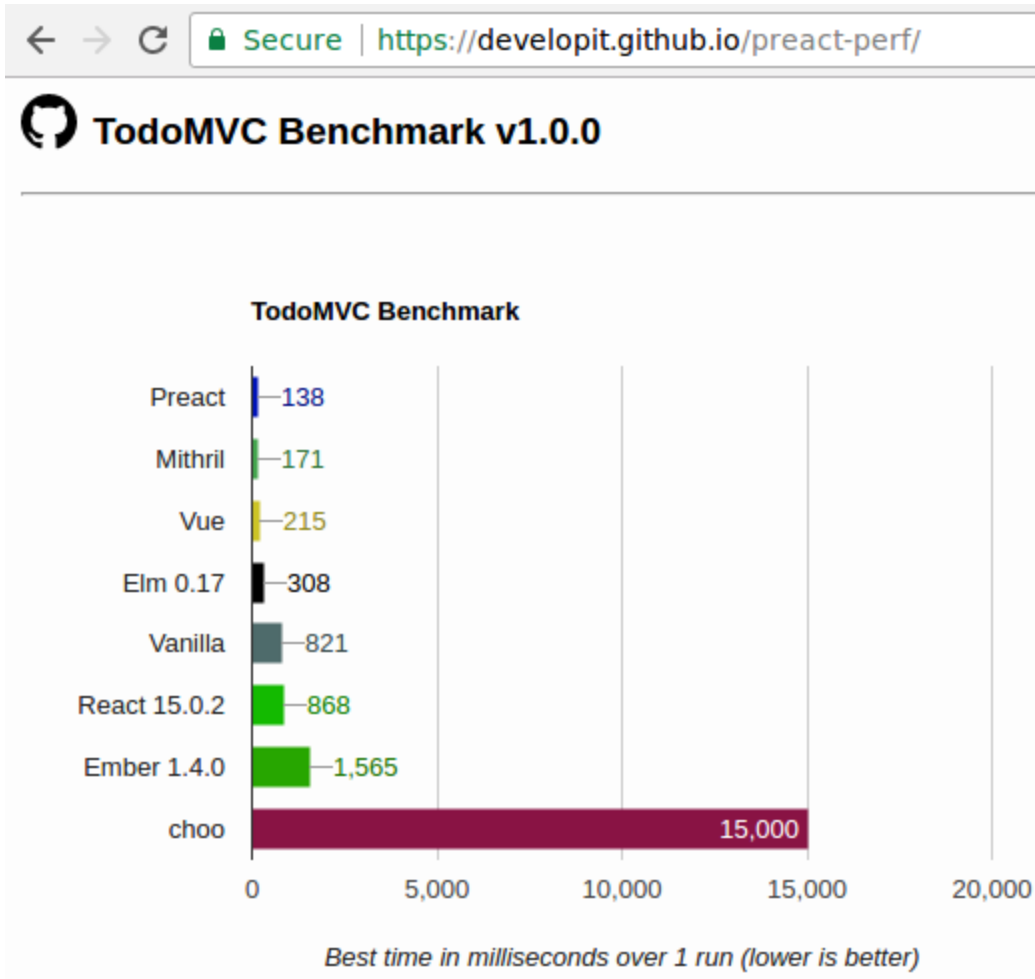
Preact



Preact - Baked in PRPL

- **Precache:** The service worker is configured for offline use.
- **Render initial route:** prerender
- **Push:** serve (by default) creates a simple HTTP2 server, which is a HTTP2/Push server. You can check the console for verification.
- **Lazy-Load:** Automatic code-splitting for routes and shared "chunks" are optimized for reuse. Navigating from `/about` to `/contact` will dynamically (or "lazily") load the "contact" bundle and any associated chunks. This is all thanks to webpack.

Preact - Performance



<https://developit.github.io/preact-perf>

Preact - Webpack

- Creates a single js file from all the JavaScript files.
- Lets me use the dev server and it enables the hot module reloading feature.
- Dynamic bundle splitting - <https://webpack.js.org/guides/code-splitting-async>
- Tree-shaking capabilities - <https://webpack.js.org/guides/tree-shaking>

Preact - Babel

Converts ES2015 syntax to ES5 so my browser will be able to render the JavaScript. Things like import, let, require, arrow function, and also converts jsx to JavaScript.

Preact - CSS Module

(removes the C from the CSS)

index.js

```
import style from "./style"  
<div class={style.rounded}>
```

style.css

```
.rounded {  
  display: block;  
  background: #FFF;  
  margin: 0px auto 0 auto;  
  border-radius: 8px;  
  padding: 10px;  
}
```

<https://github.com/css-modules/css-modules>

Preact CLI

```
npm i -g preact-cli
```

```
preact create app  
cd app  
preact watch
```

Resources

- How Twitter light was built - https://blog.twitter.com/official/en_us/topics/product/2017/introducing-twitter-lite.html
- How M.UBER was built - <https://eng.uber.com/m-uber>
- Financial times PWA - <https://app.ft.com>
- AliExpress PWA - <https://m.aliexpress.com>
- Preact-cli - <https://github.com/developit/preact-cli>