

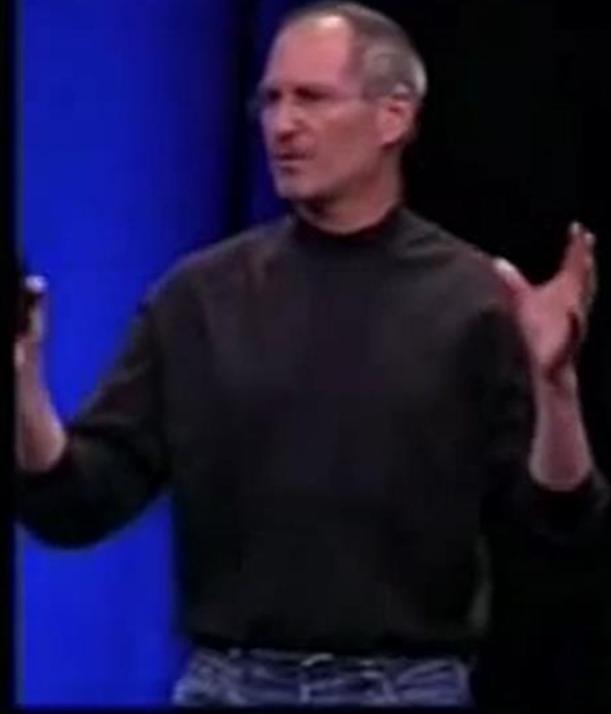
Progressive Web Apps

Are Native Apps Doomed?

Timmy Kokke
@sorskoot



Innovative new way
to create applications
for a mobile device





Web 2.0 + AJAX

Integrate with iPhone services

Instant distribution

Easy to update

Secure - same as transactions
with Amazon or a bank

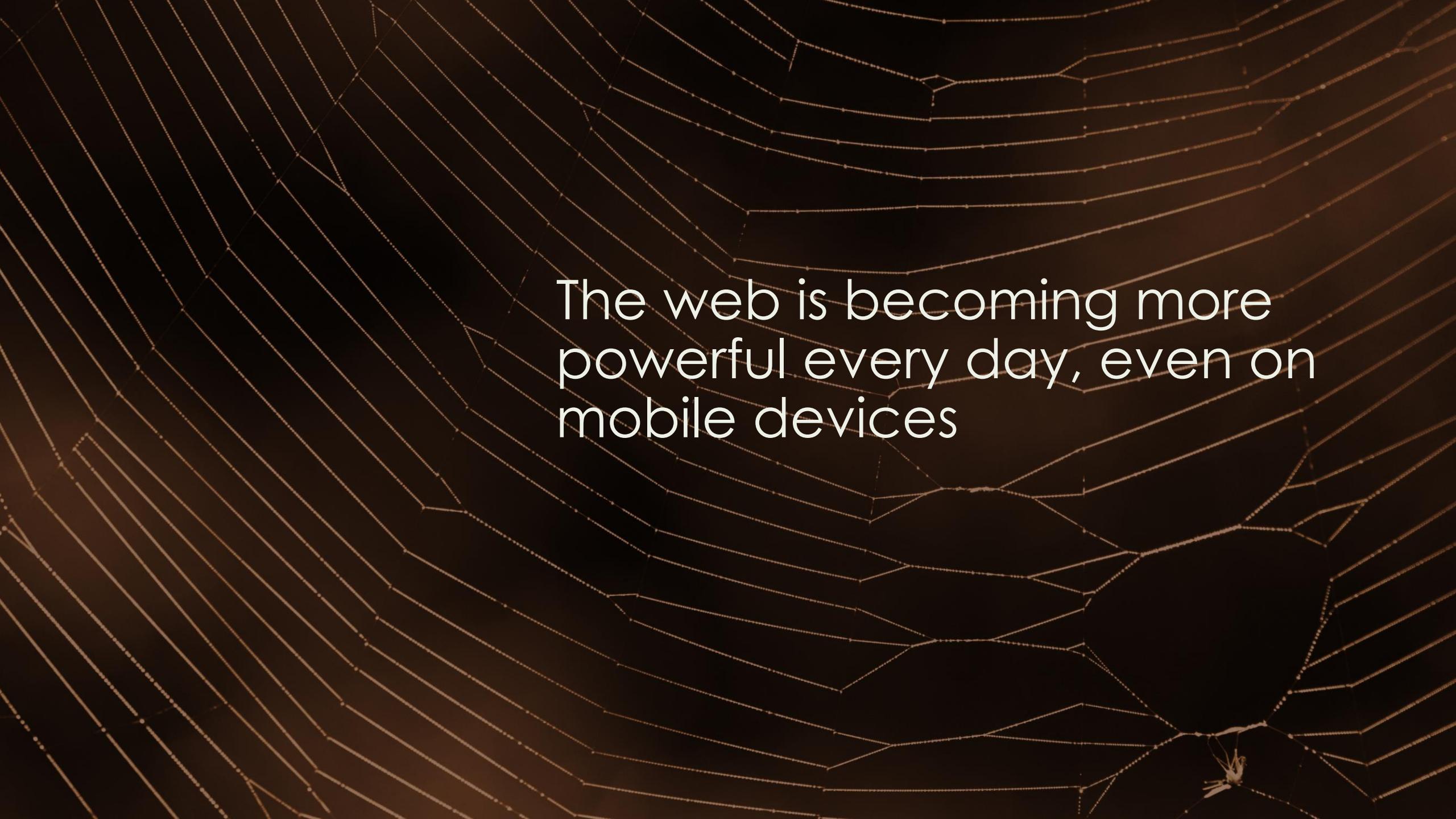
A photograph of Steve Jobs standing on a stage next to a massive projection of an iPhone. The iPhone is shown from a three-quarter perspective, displaying its home screen with various app icons. The background is dark, and the iPhone and Steve Jobs are illuminated by stage lights.

No SDK required

You've got everything you need if you know how to write
apps using the most *modern web standards* to write
amazing apps for the iPhone today

Steve Jobs, 2007

<https://www.youtube.com/watch?v=y1B2c3ZD9fk&feature=youtu.be&t=1h14m11s>

A large, intricate spider web is visible against a dark, textured background. The web is composed of numerous thin, light-colored threads that converge towards a central point, creating a complex geometric pattern of triangles and polygons.

The web is becoming more
powerful every day, even on
mobile devices

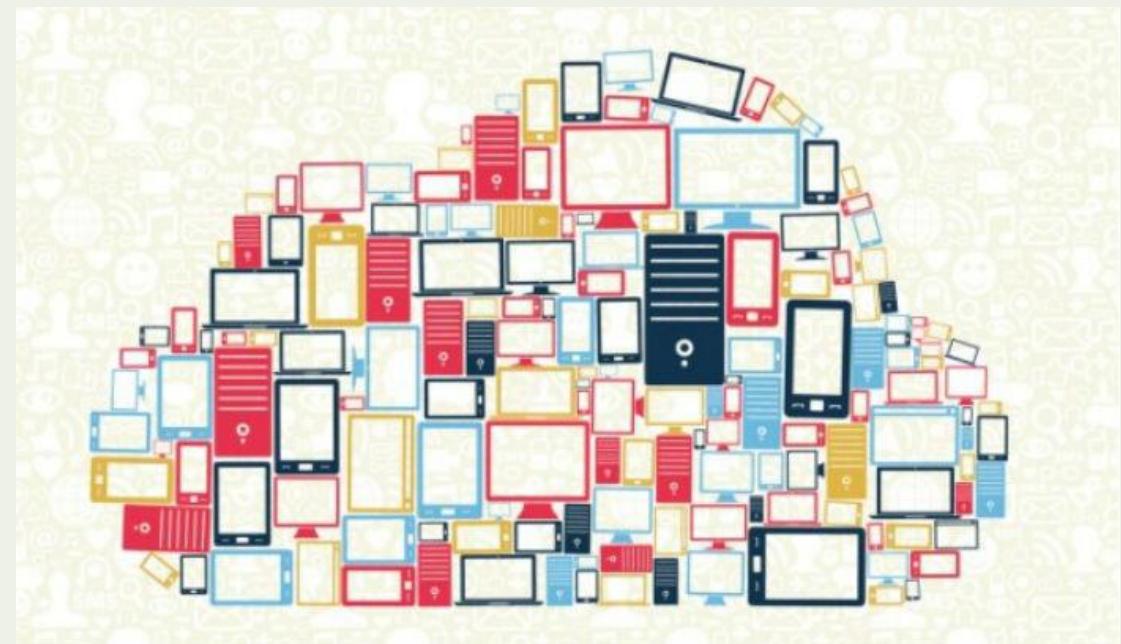
You want to develop the best experience for every user on every platform over every network



A close-up photograph of a person's hand holding a smartphone. The phone's screen is visible but appears blurred, suggesting motion or a low-quality camera sample. On the screen, there is a red circle containing a yellow circle, and the word "Dentist" is partially visible in white text.

Building native apps is expensive, and a responsive website
is often built anyway

You only want to build your application once and run it anywhere



Use modern web standards and tools to build amazing user experiences



Progressive Web apps are the future of web development



PWAs deliver experiences that have the reach of the web



Reliable



Unable to connect to the Internet

Google Chrome can't display the webpage because your computer isn't connected to the Internet.

[Details](#)

Fast



Engaging



PWAs use modern web capabilities to deliver an app-like user experience



Start with a good experience for everyone and improve based on what you know about the user



**Graceful
Degradation**



**Progressive
Enhancement**

W3C Standards are maturing and enabling more and more native features to the web



Can work in conjunction with Cordova + HWA to take the step into the various stores, use window APIs



Building a progressive web apps has incredible benefits



You can use what you know
already from building web
apps



You don't have to go to any complex app marketplace, so you can fix bugs easy and fast



They make it easy to delight your users, grow engagement and increase conversions



You can build progressive web apps today

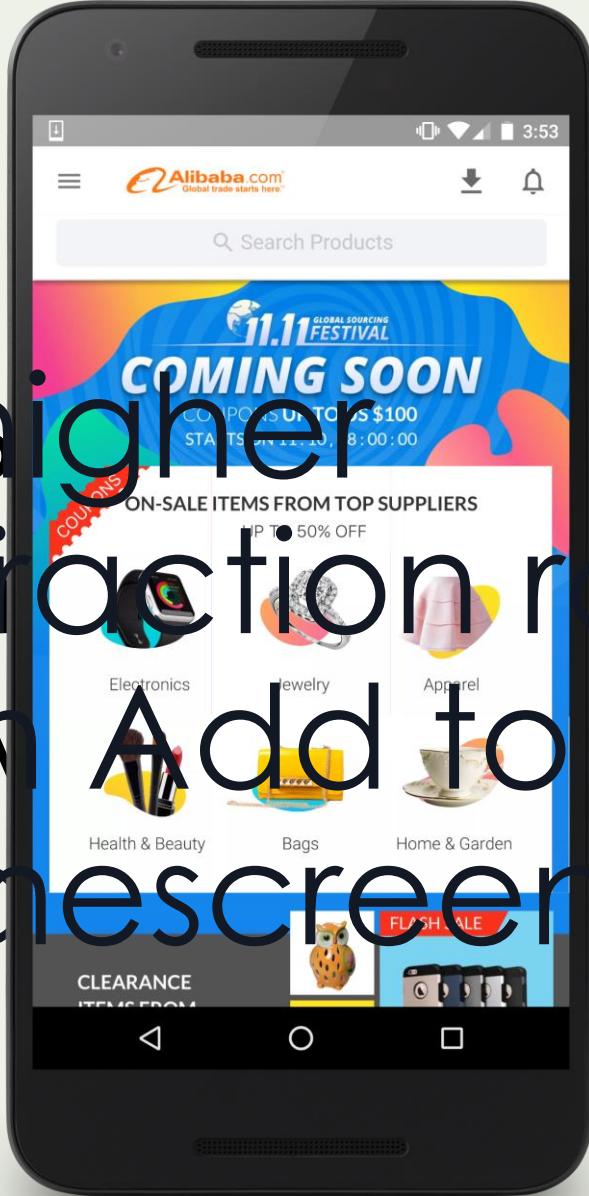




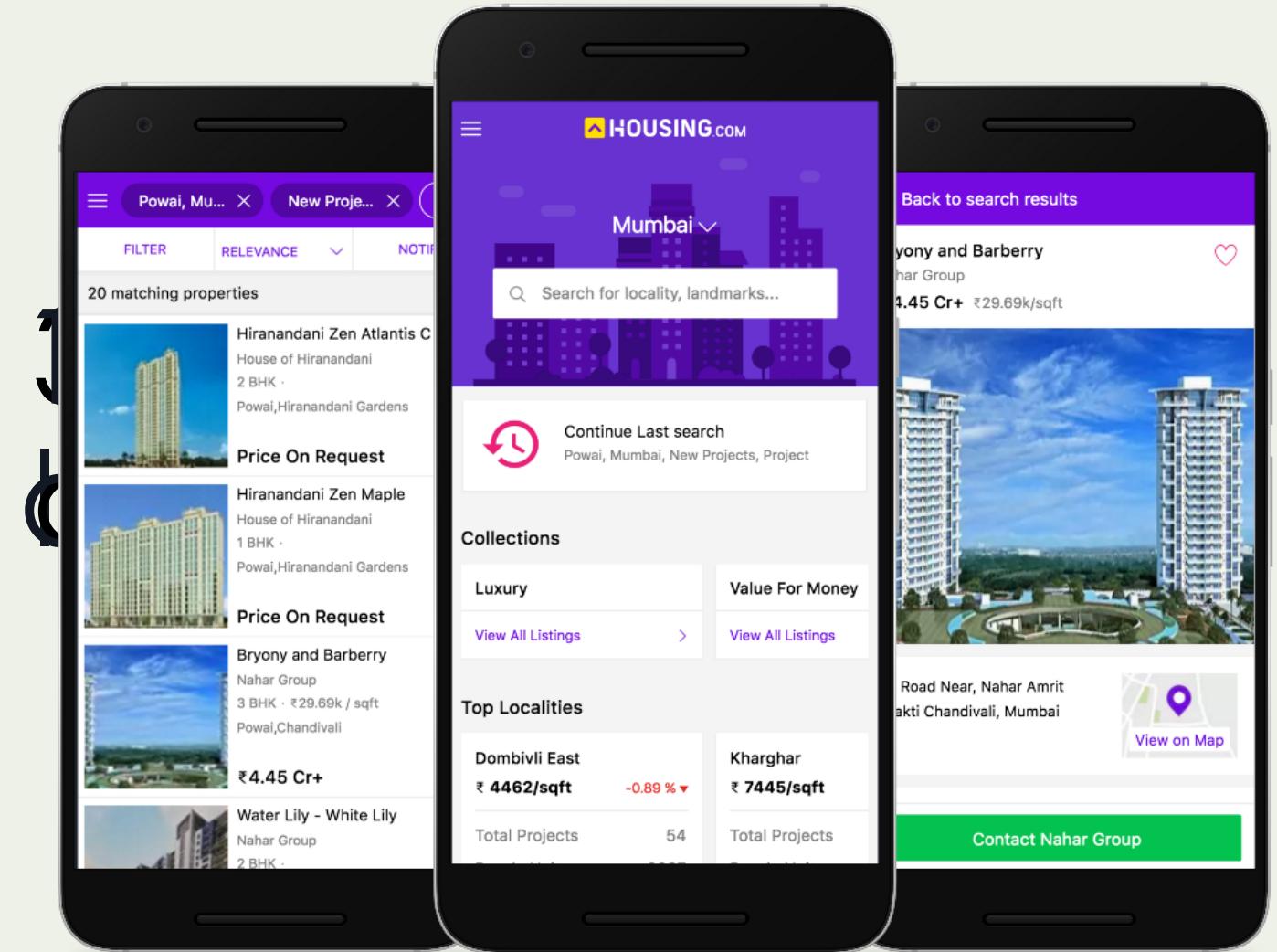
People are building
them already, with
success!

Alibaba

4x higher monthly interaction rate across food, Add to Home screen



Housing.com



Support is there



Many APIs are available or are planned



Hello New Features

Because of feature
detection you realize
progressive enhancement



Only Safari stays behind



It's good for you AND your users



User don't have to go to the appstores and apps use up less space



53%

Web traffic from mobile

Your web experience will improve as well

The user will be happy if you provide the best possible experience for them



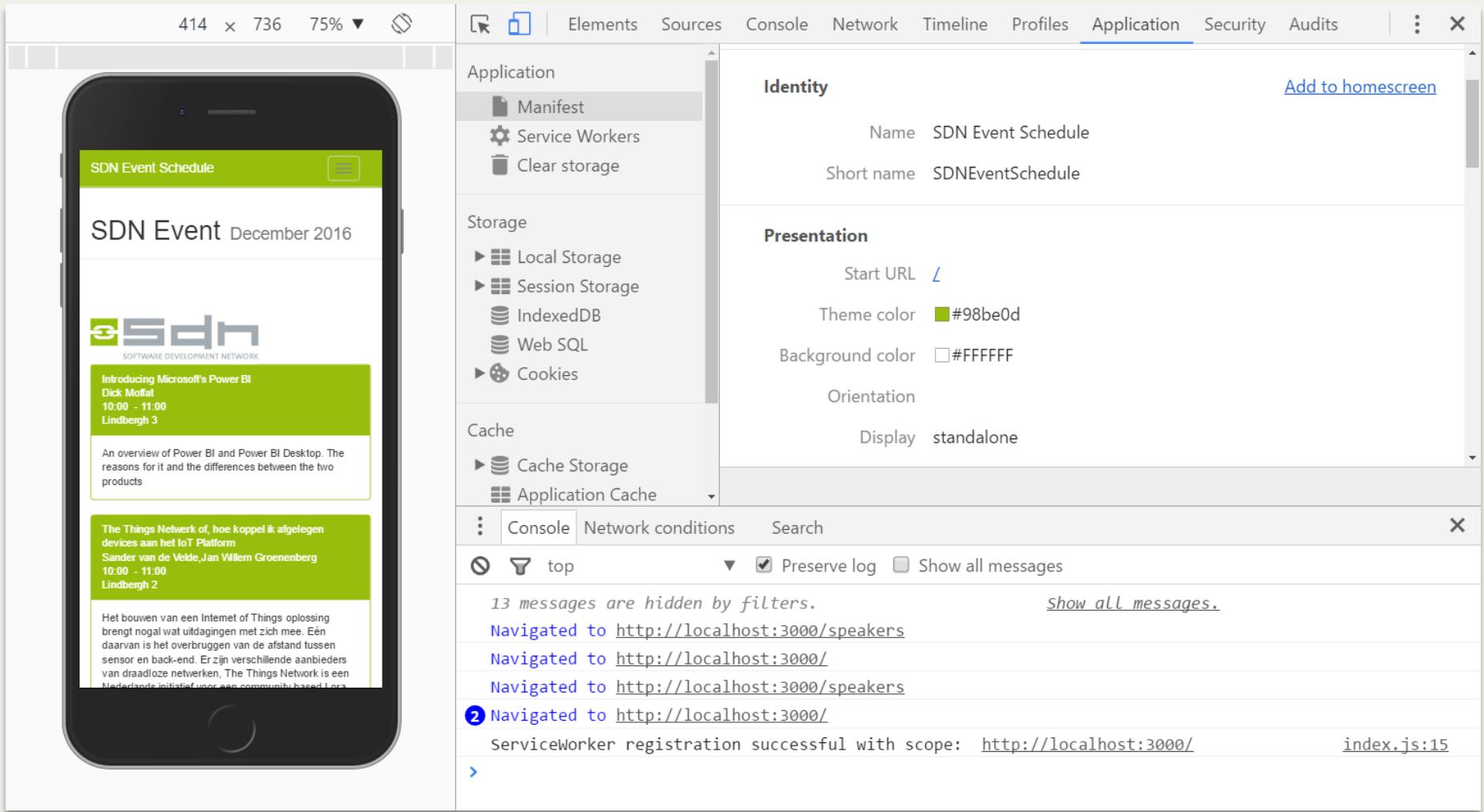
Progressive Web apps
are build using
modern tools and APIs



Tools



F12



The screenshot shows the Microsoft Edge DevTools interface with the Application panel open. The left pane displays a mobile device simulation showing the SDN Event Schedule page for December 2016. The right pane shows the configuration for the service worker:

- Identity**:
 - Name: SDN Event Schedule
 - Short name: SDNEventSchedule
 - Add to homescreen: [Add to homescreen](#)
- Presentation**:
 - Start URL: [/](#)
 - Theme color: #98be0d
 - Background color: #FFFFFF
 - Orientation:
 - Display: standalone
- Cache**:
 - Cache Storage
 - Application Cache

At the bottom, the DevTools console shows the following log entries:

- 13 messages are hidden by filters. [Show all messages.](#)
- Navigated to <http://localhost:3000/speakers>
- Navigated to <http://localhost:3000/>
- Navigated to <http://localhost:3000/speakers>
- ② Navigated to <http://localhost:3000/>
- ServiceWorker registration successful with scope: <http://localhost:3000/> index.js:15

Lighthouse

Results for: <https://pwa.rocks/>
Generated on: 11/17/2016, 2:58:57 PM PST 🖨️

96 / **100** **Progressive Web App**

These audits validate the aspects of a Progressive Web App.

App can load on offline/flaky connections

Ensuring your web app can respond when the network connection is unavailable or flaky is critical to providing your users a good experience. This is achieved through use of a [Service Worker](#).

- Has a registered Service Worker
- URL responds with a 200 when offline

Page load performance is fast

Users notice if sites and apps don't perform well. These top-level metrics capture the most important perceived performance concerns.

- First meaningful paint: **516.5ms** (target: 1,600ms)
- Perceptual Speed Index: **572** (target: 1,250)
 - First Visual Change: **486ms**
 - Last Visual Change: **661ms**
- Estimated Input Latency: **24.5ms** (target: 50ms) [?](#)
 - Content scrolls at 60fps (Coming soon)
 - Touch input gets a response in < 150ms (Coming soon)
 - App is interactive without jank after the first meaningful paint (Coming soon)
- Time To Interactive (alpha): **652.6ms** (target: 5,000ms)

Site is progressively enhanced

Progressive enhancement means that everyone can access the basic content and functionality of a page in any browser, and those without certain browser features may receive a reduced but still functional experience.

manifoldjs

[Generate](#) [Deploy](#) [Documentation](#) [App Image Generator](#) [Github](#)



manifoldjs

The simplest way to
create hosted apps across
platforms and devices

[Generate Now](#)

Start using manifoldJS as
part of your build process

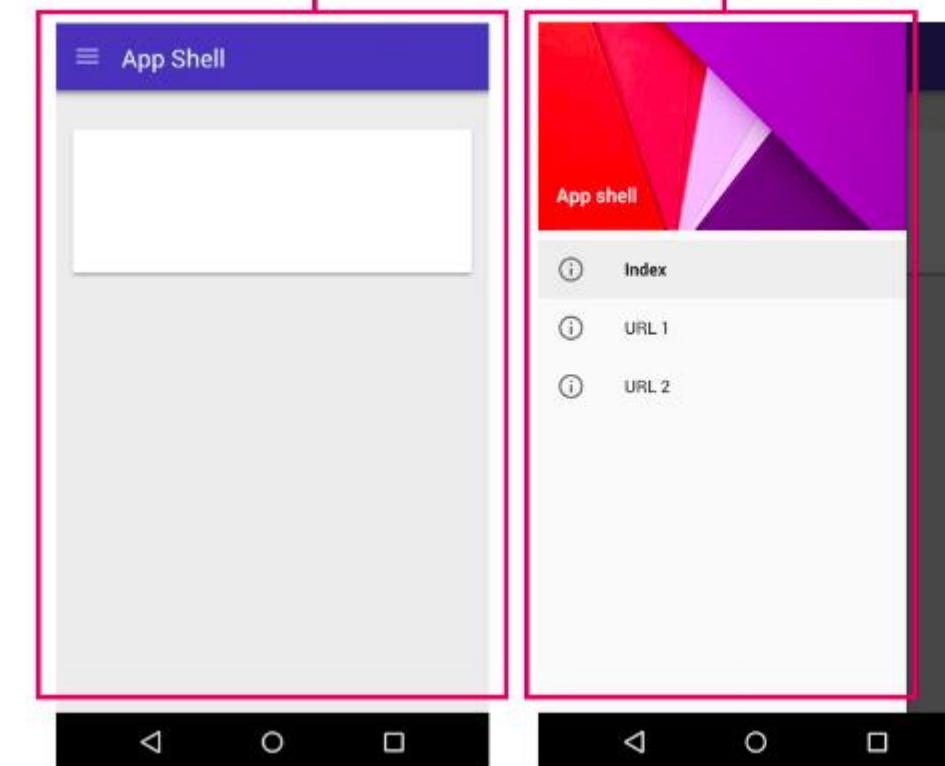
```
$ npm install -g manifoldjs
```

Patterns and pieces



Shell Architecture

Application Shell



Content



Manifest.json

<https://w3c.github.io/manifest/>

```
{  
  "name": "SDN Event Schedule",  
  "short_name": "SDNEventSchedule",  
  "icons": [  
    {  
      "src": "icons/icon-128x128.png",  
      "sizes": "128x128",  
      "type": "image/png"  
    }  
  ],  
  "start_url": "/",  
  "display": "standalone",  
  "gcm_sender_id": "840152970702",  
  "theme_color": "#98be0d",  
  "background_color": "#FFFFFF"  
}
```

Promises

```
$.getJSON('/api/sessions')
  .done(data =>
    handle(data.text)
  )
  .fail(() =>
    $('body').append('error')
  )
  .always(() =>
    $('body').append('done')
  );
};
```

Promises

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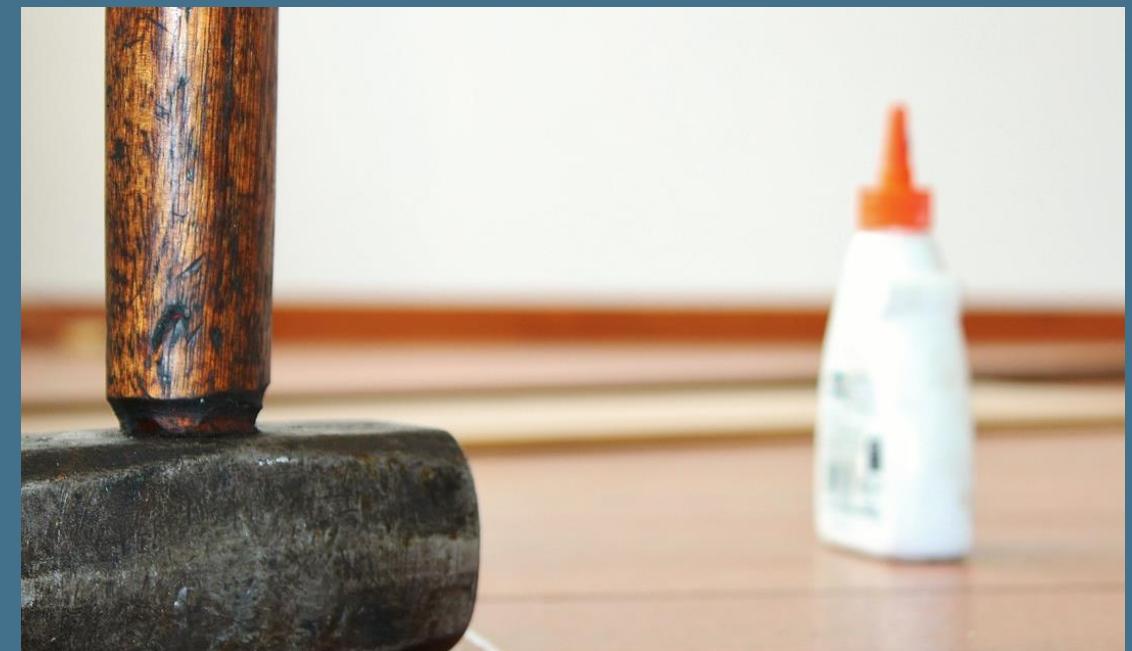
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APIs

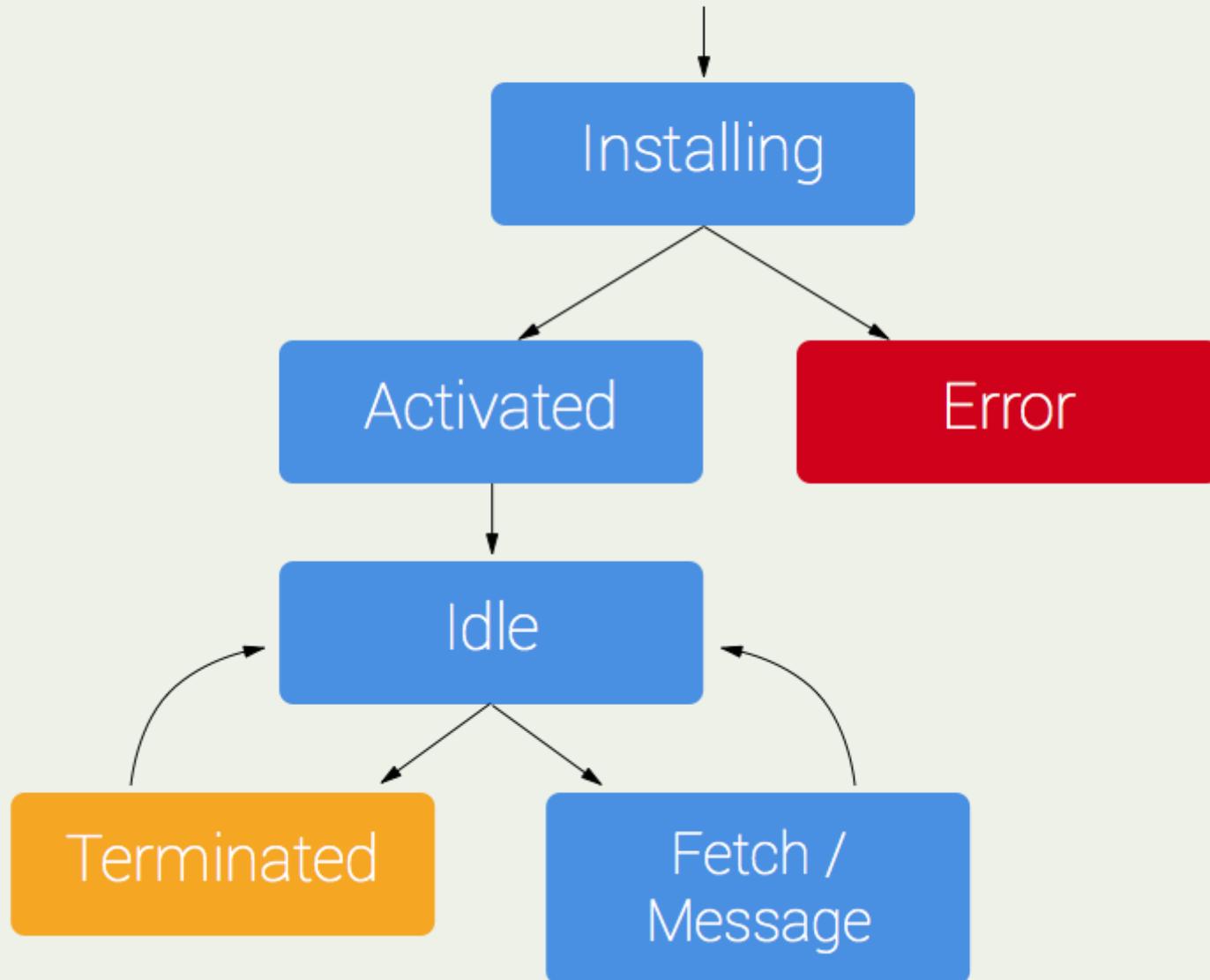


Service Workers



© Bettmann Collection/ Corbis

No Service
Worker



Fetch

```
fetch('./api/some.json')
  .then(response =>
    response.json().then(data =>
      console.log(data)
    )
  )
  .catch(err =>
    console.log(`Fetch Error :${err}`)
);

```

Fetch

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```

Cache API



A blacksmith is shown from the waist down, wearing a plaid apron and leather gloves. He is working on a piece of metal in a traditional forge setting. In the foreground, a large metal block sits on a workbench. The word "DEMO" is overlaid in white text at the bottom center.

DEMO

Conclusion



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Microsoft MVP

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<http://winjs.ninja>

<http://youtube.com/c/winjsninja>

<http://twitch.tv/sorskoot>



Usefull links

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

<https://serviceworkerjs.com/>

<http://manifoldjs.com/>

Resources

http://www.slideshare.net/cheilmann/progressive-web-apps-the-return-of-the-web-goto-berlin-2016?qid=d300a1c6-a160-4d7b-ba3c-b1aa0b755472&v=&b=&from_search=1

<https://serviceworker.js.org/>

<https://developers.google.com/web/showcase/2016/iowa2016>

<https://medium.com/javascript-scene/why-native-apps-really-are-doomed-native-apps-are-doomed-pt-2-e035b43170e9#.7988vvpl>

<https://www.smashingmagazine.com/2016/08/a-beginners-guide-to-progressive-web-apps/>

<https://developers.google.com/web/fundamentals/instant-and-offline/service-worker/lifecycle>

