Microsoft

Microsoft Build 2017

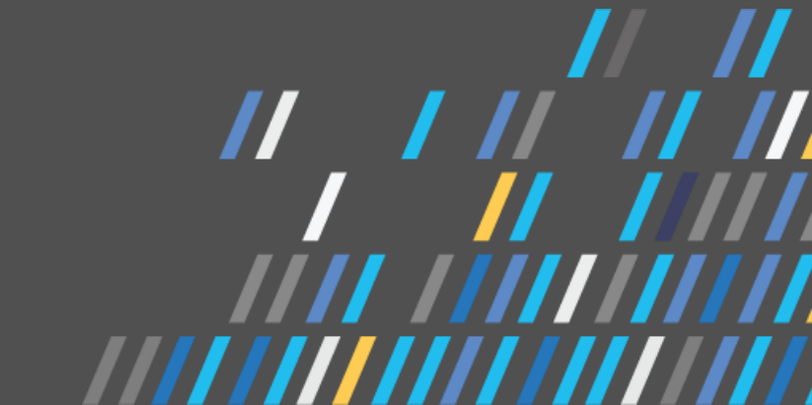
Microsoft

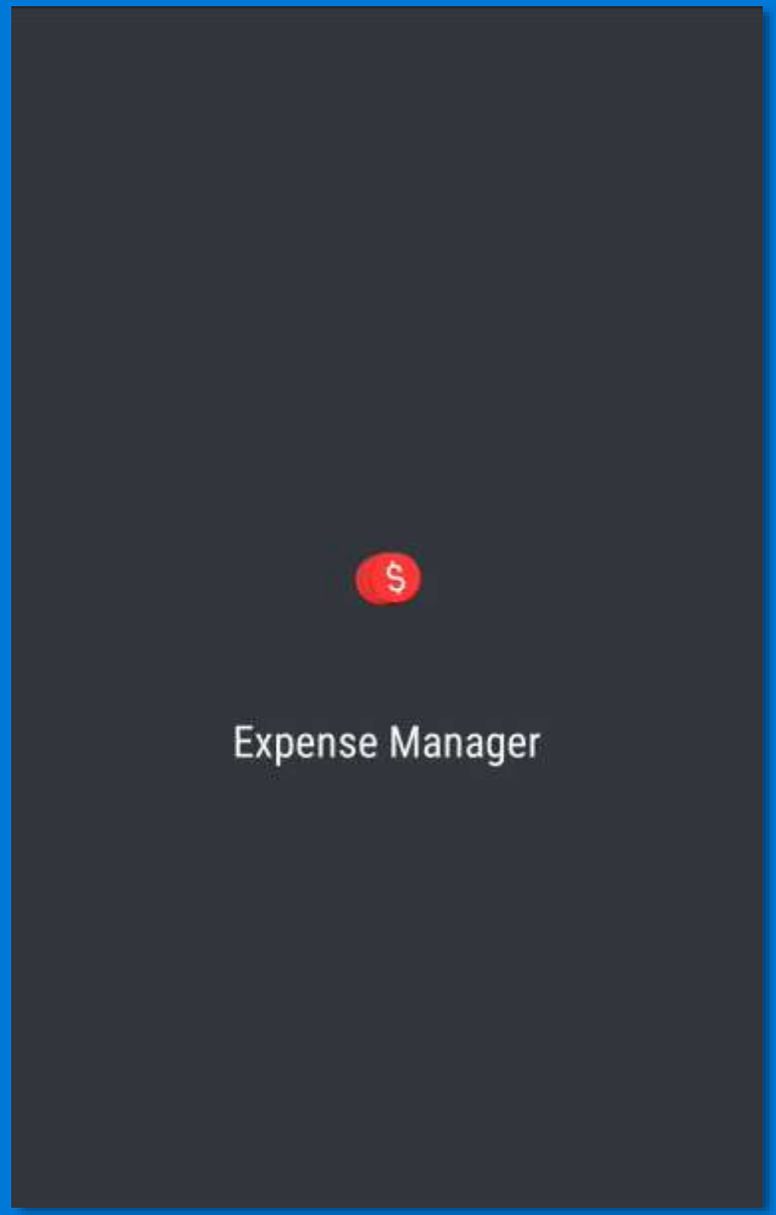
B8075

Progressive Web Apps and the Windows Ecosystem

Aaron Gustafson
Web Standards
& Accessibility Advocate

#MSBuild




$
Expense Manager

Expense Manager

INFO LOGOUT

Filter Expenses Clear Filters

From – To

Min Max

$ –

Merchant

Status

- [x] New
- [x] In Progress
- [x] Reimbursed

DATE	MERCHANT	TOTAL	STATUS	COMMENT
05/01/2017	Breakfast	$68.41	New	Expense from my business trip.
05/01/2017	EPB	$70.00	New	Gigabit internet
04/10/2017	Shuttle	$13.48	New	Expense from my business trip.
03/19/2017	Parking	$18.49	New	Expense from my business trip.
03/17/2017	Hotel	$327.61	New	Expense from my business trip.
02/25/2017	Fast food	$43.12	New	Expense from my business trip.
02/19/2017	Restaurant	$124.13	*In Progress*	Expense from my business trip.
02/16/2017	Fast food	$32.72	*In Progress*	Expense from my business trip.
02/11/2017	Restaurant	$253.22	*In Progress*	Expense from my business trip.
02/10/2017	Electronics	$81.40	*In Progress*	Expense from my business trip.
02/02/2017	Office supplies	$270.65	*In Progress*	Expense from my business trip.
01/15/2017	Shuttle	$22.05	*In Progress*	Expense from my business trip.
01/10/2017	Office supplies	$114.13	*In Progress*	Expense from my business trip.

To be reimbursed

$541.12

Last 12 Months in Total

https://demo.vaadin.com/expense-manager

What is a Progressive Web App?

Progressive Web App

a.k.a. “PWA”

Progressive Web App

Progressive Web App

Game
Gallery
Book
Newspaper
Art Project
Tool

Progressive Web Site

Progressive Web Site++

Promoted to being native-ish
similar to a “Hosted Web App”

PWA or Native?

“Web as native”
is not a new concept

PWA Principles

Progressive

Responsive

Network Independent

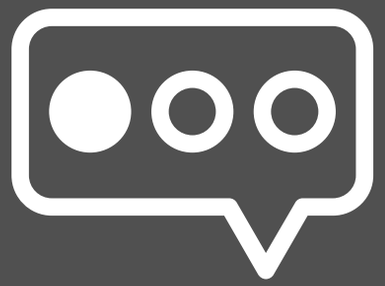
App-Like

Fresh

A PWA is

Safe

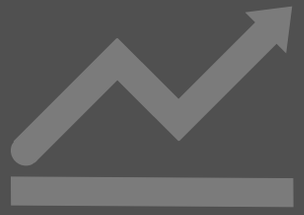
Discoverable



Re-engageable

Installable

Linkable



Progressive

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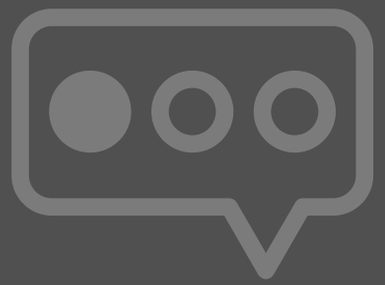


Re-engageable

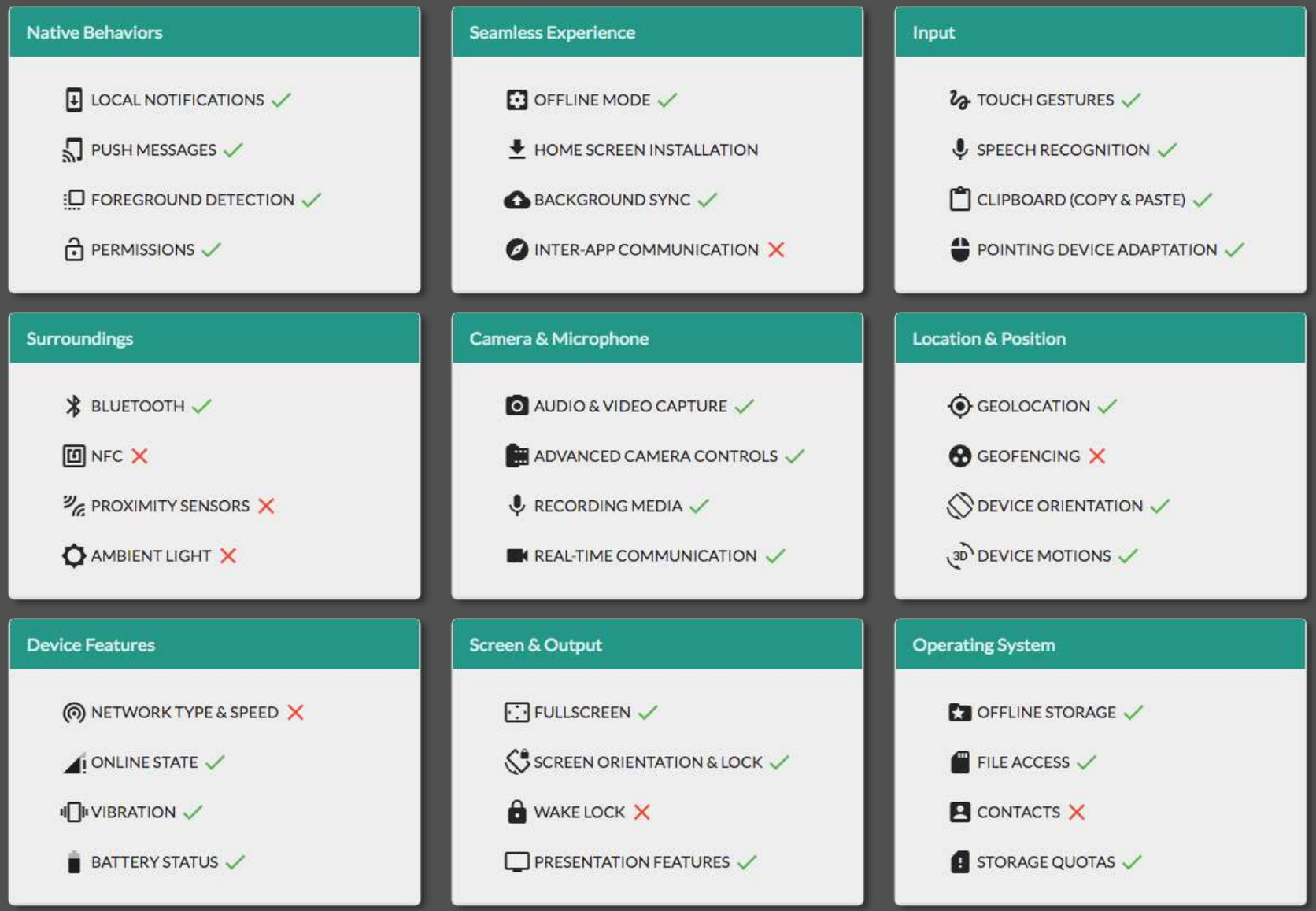
Installable

Linkable

PWA vs. Native

PWA or Native?
It depends.

whatwebcando.today

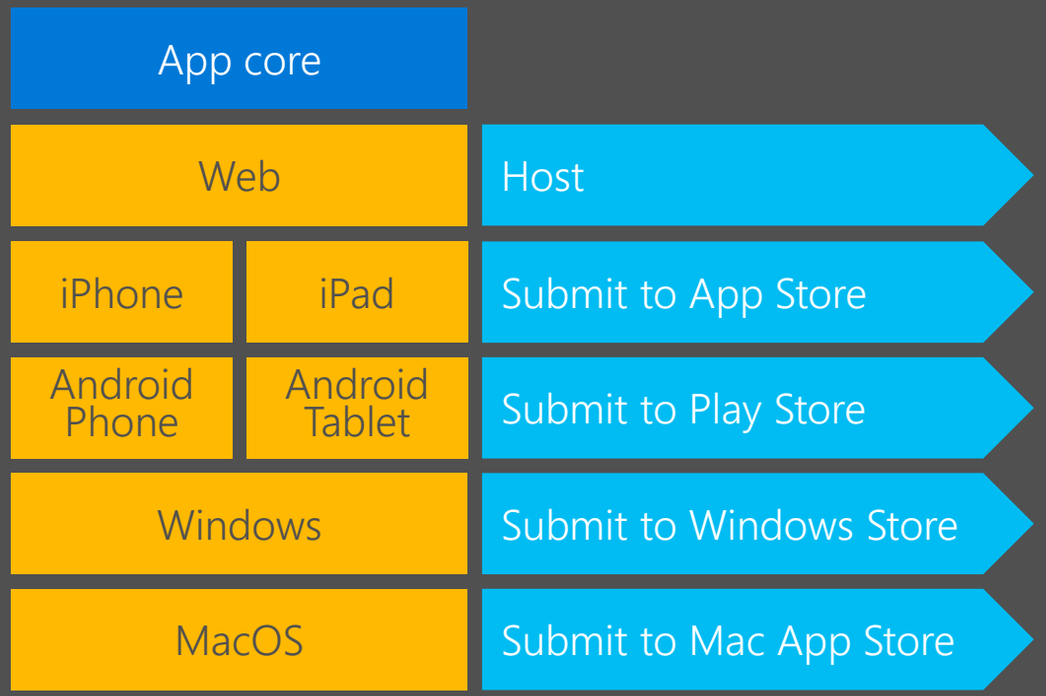


Which is which?

PWAs = Lower Cost (& Time) to Build

Native

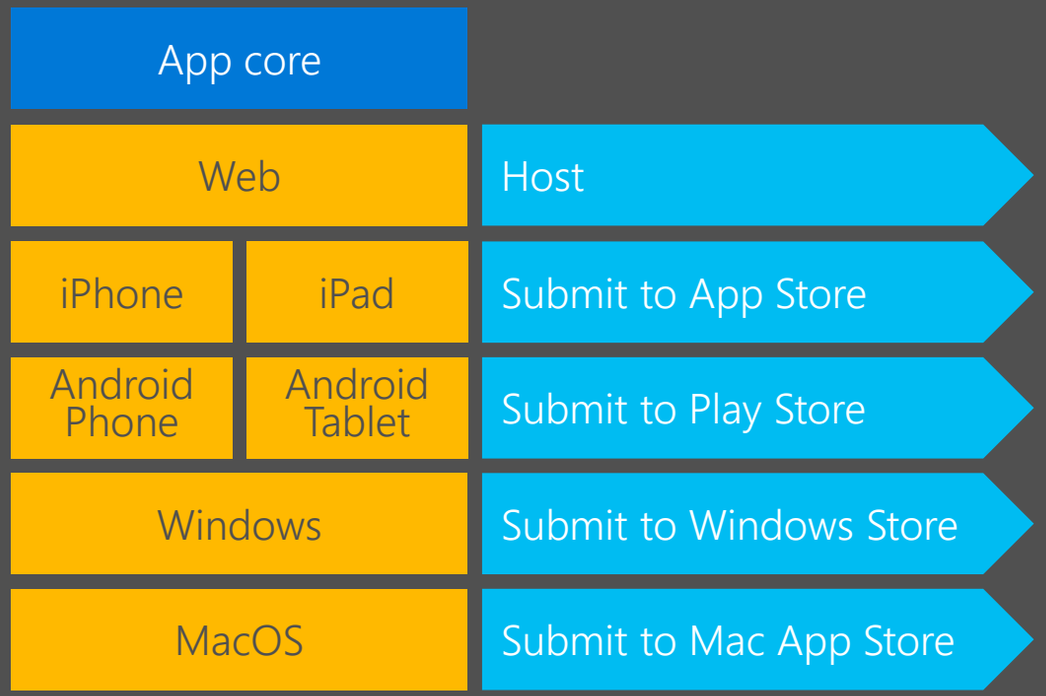
App store submission is largely required



PWAs = Lower Cost (& Time) to Build

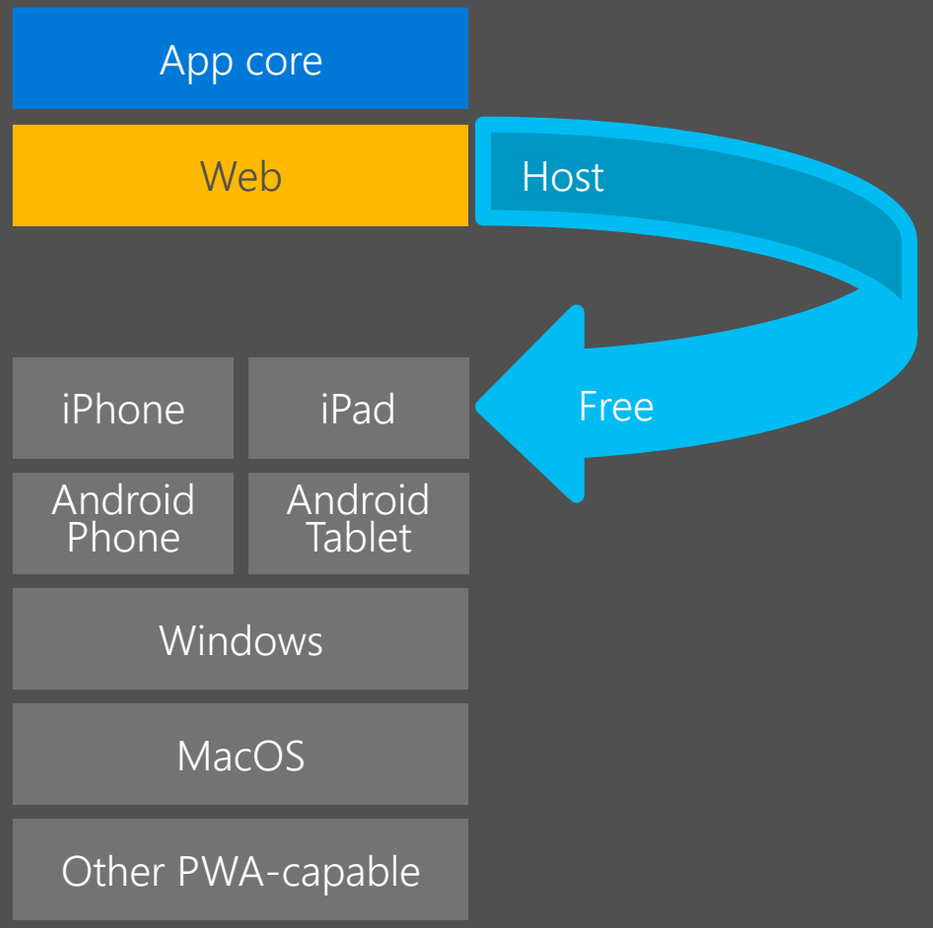
Native

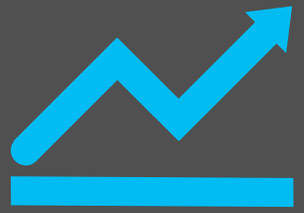
App store submission is largely required



PWA

App store submission optional (or one-time)





Progressive

Responsive

Network Independent

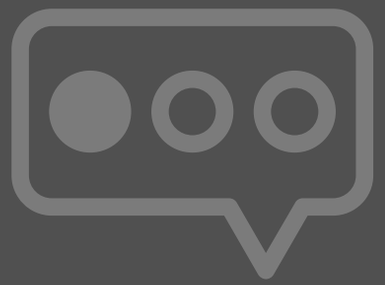
App-Like

Fresh

A PWA is

Safe

Discoverable



Re-engageable

Installable

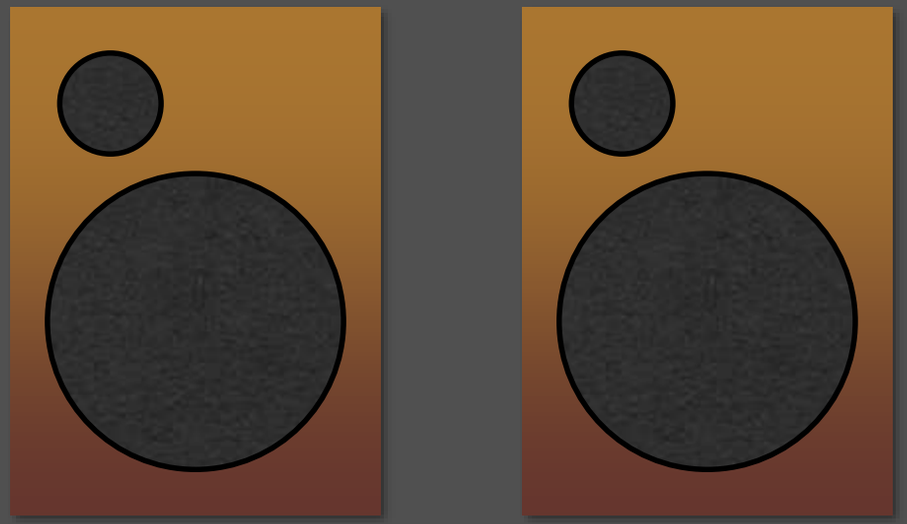
Linkable

Progressive Web App

What is Progressive Enhancement?

Mono

What is Progressive Enhancement?

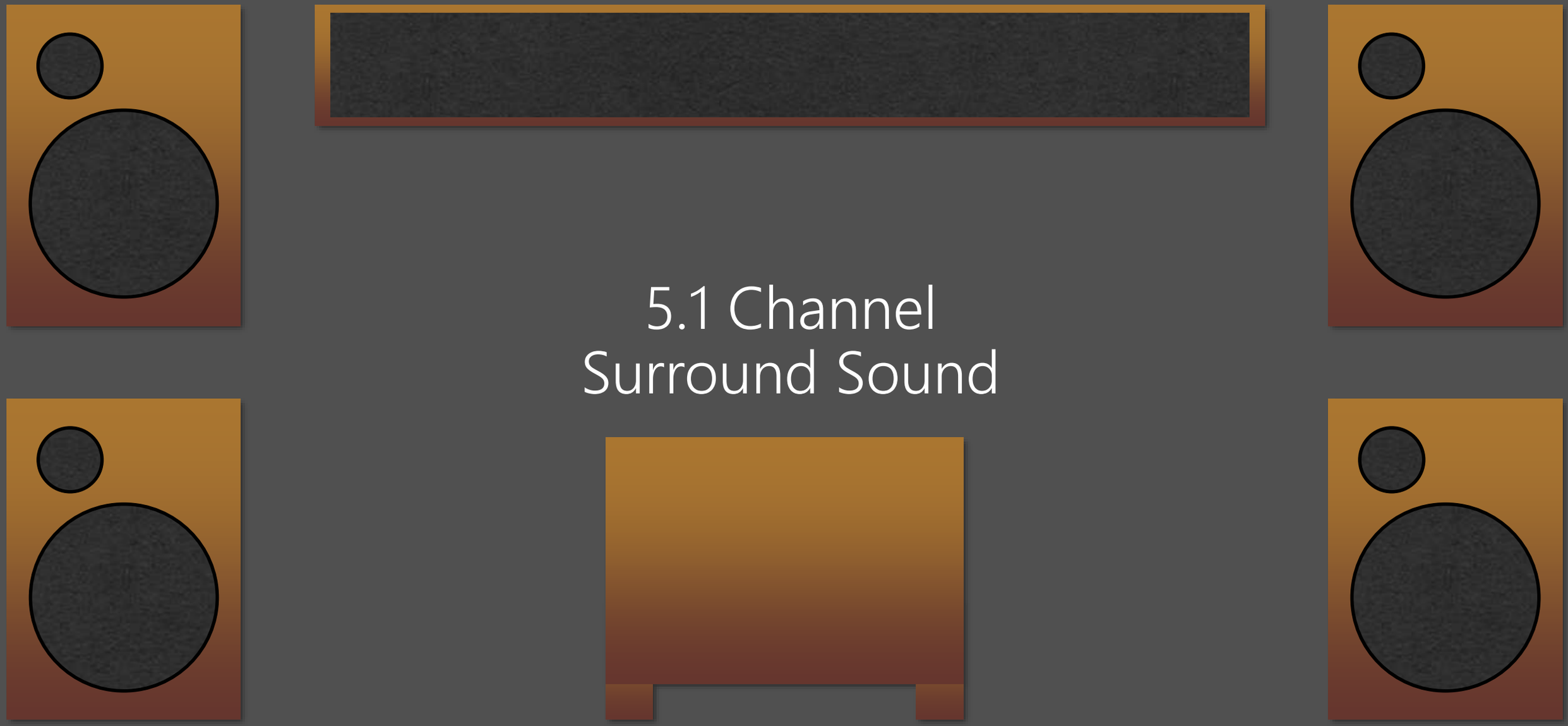


Stereo

What is Progressive Enhancement?

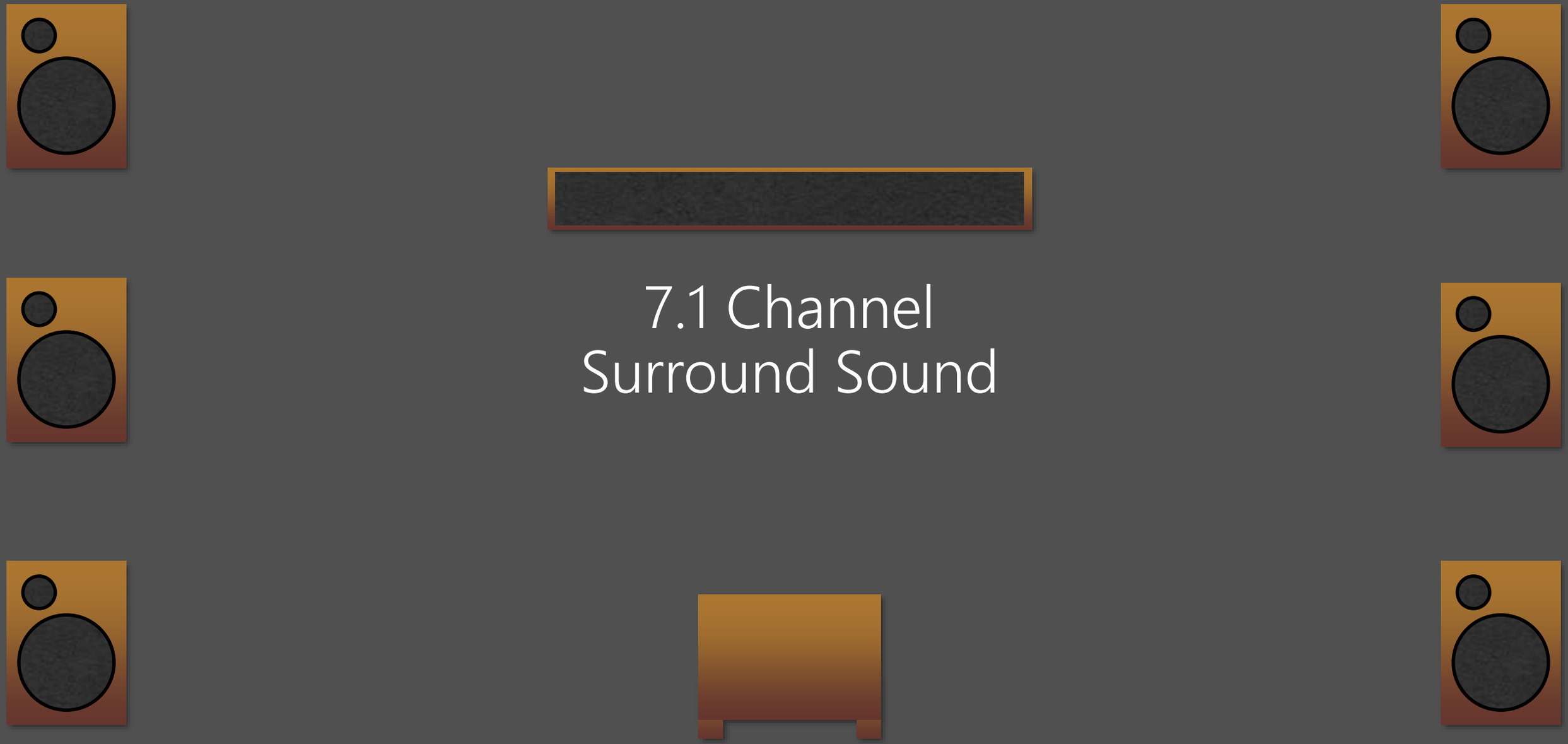
Surround Sound

What is Progressive Enhancement?



5.1 Channel
Surround Sound

What is Progressive Enhancement?



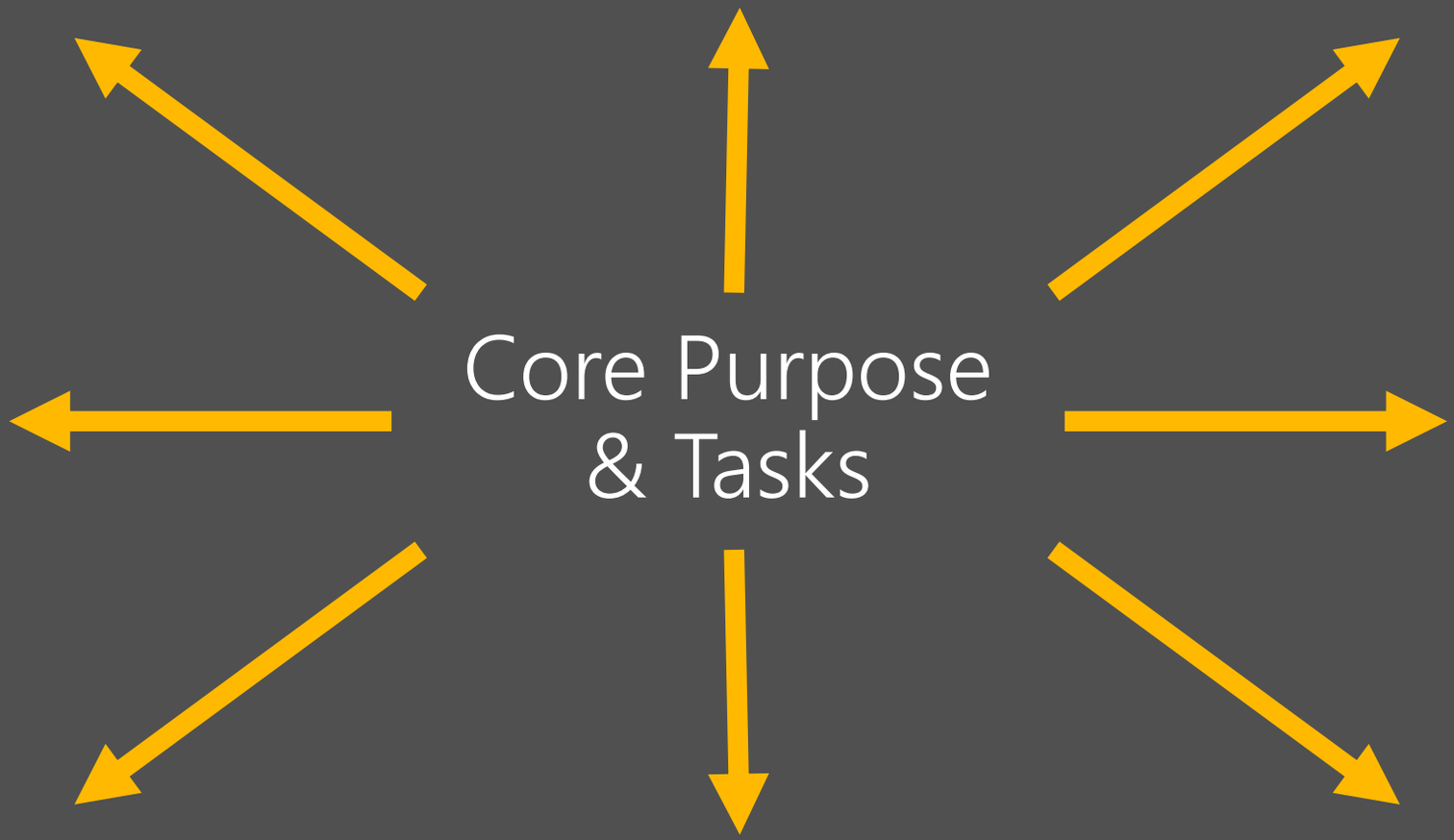
7.1 Channel
Surround Sound

What is Progressive Enhancement?

What is Progressive Enhancement?

Sometimes mono
is your only option

What is Progressive Enhancement?

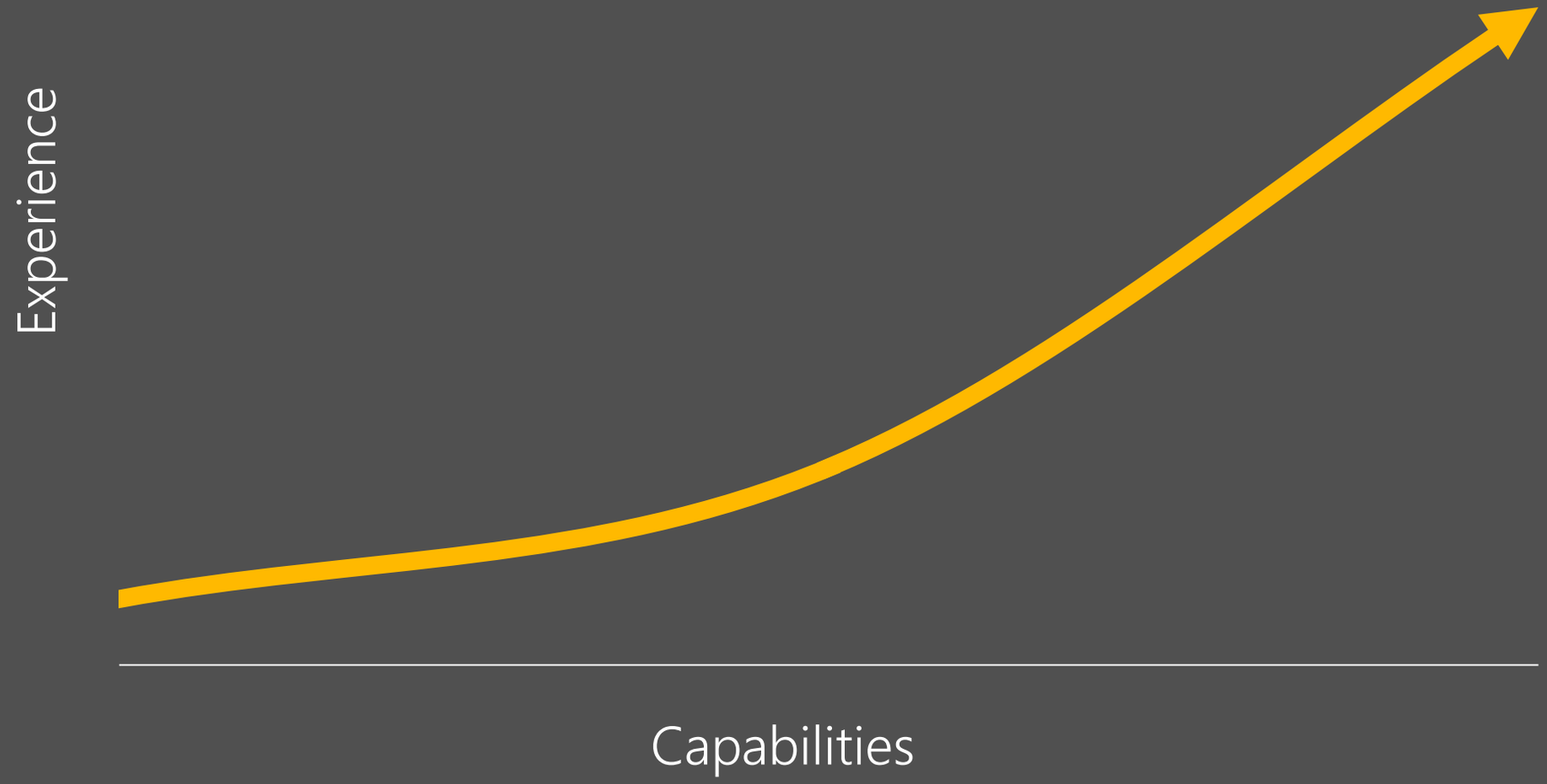


What is Progressive Enhancement?

Technological restrictions

Barriers to access

What is Progressive Enhancement?



PE ensures people
can use your product
no matter what

Progressive enhancement made simple

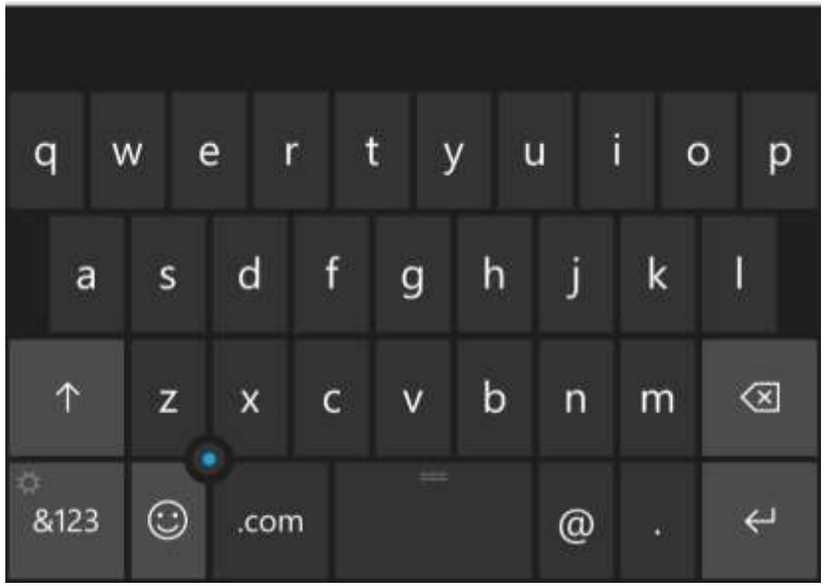
```
<input type="email" name="email" id="email"
       required aria-required="true">
```

Progressive enhancement made simple

```
<input type="email" name="email" id="email"
       required aria-required="true">
```

Experience deltas

1. Support for email input type?
2. Validation algorithm implemented?
3. Virtual keyboard?



Progressive enhancement made simple

```
<input type="email" name="email" id="email"
       required aria-required="true">
```

Experience deltas

1. Support for HTML validation?

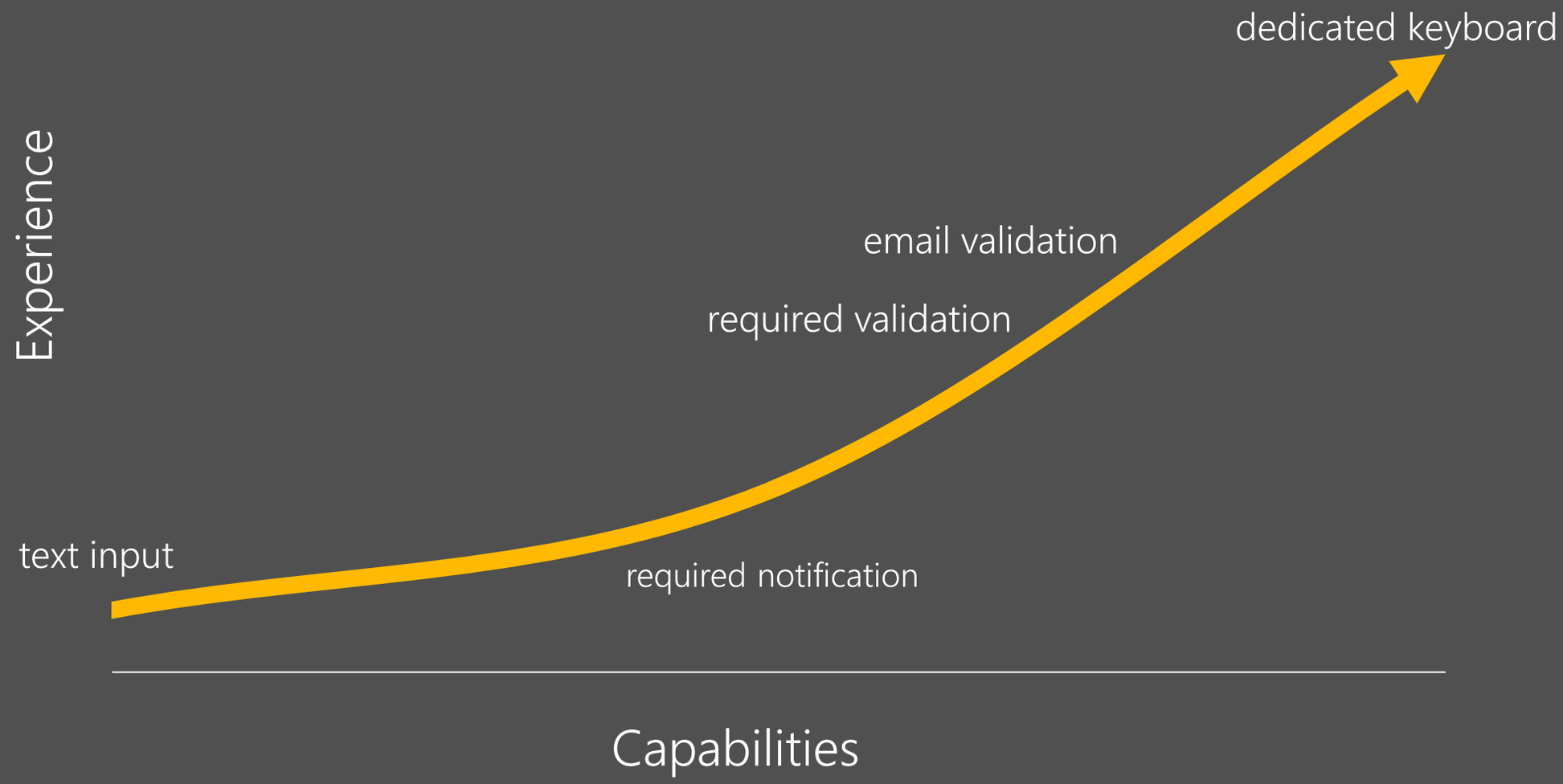
Progressive enhancement made simple

```
<input type="email" name="email" id="email"
       required aria-required="true">
```

Experience deltas

1. Browser exposure of `aria-required` property?
2. Assistive tech implementation of `aria-required`?

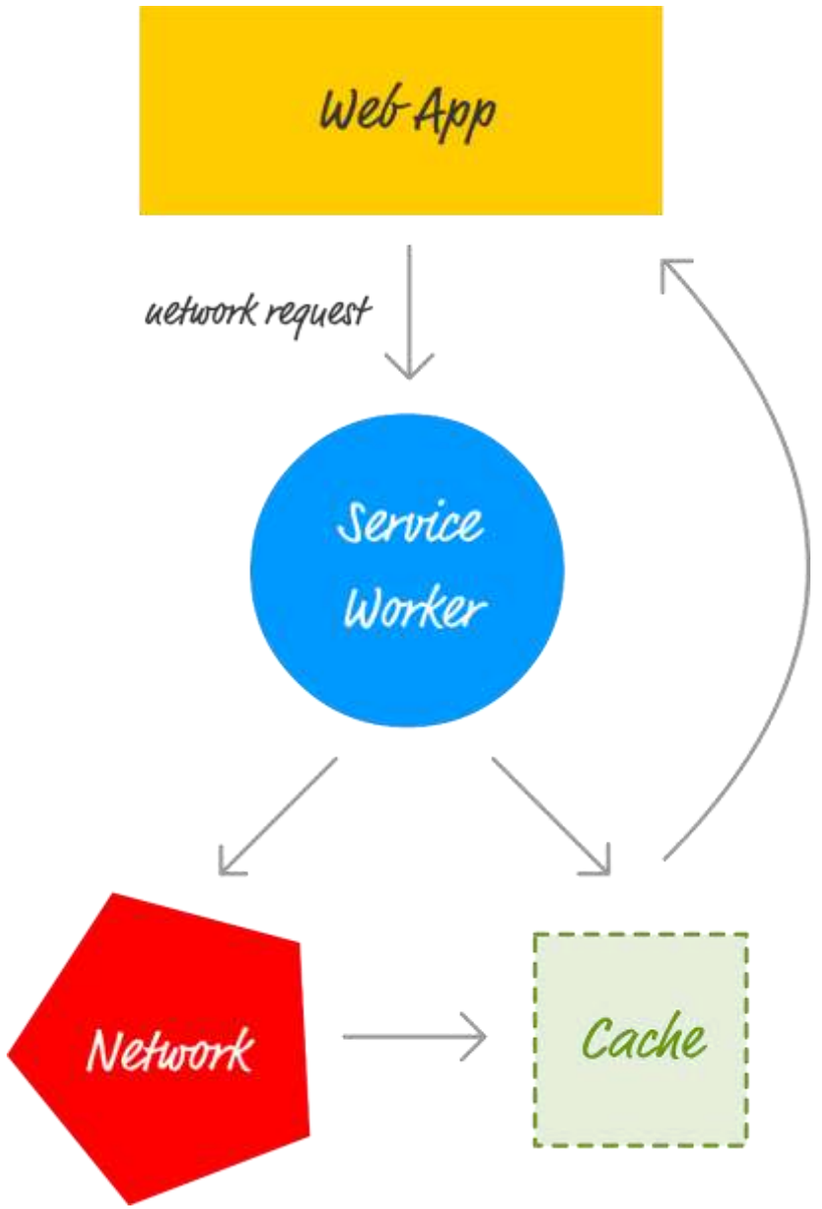
Progressive enhancement made simple



~~PE~~ ensures people
can use your product
no matter what

Service Worker

Act as proxy servers that sit between web apps, the browser, and the network (when available).



Intro to Service Worker

Jeff Burtoft

Progressive Web Apps in Windows

Web Apps in Windows

Pinned Sites
Windows 7

Packaged Web Apps
Windows 8

Hosted Web Apps
Windows 10

Progressive Web Apps
Windows 10

Progressive Web Apps in Windows

Available Now

- Fetch API
- Web app container
- Windows Runtime APIs (via JavaScript)

Coming soon

- Service Worker
- Cache API
- Push API

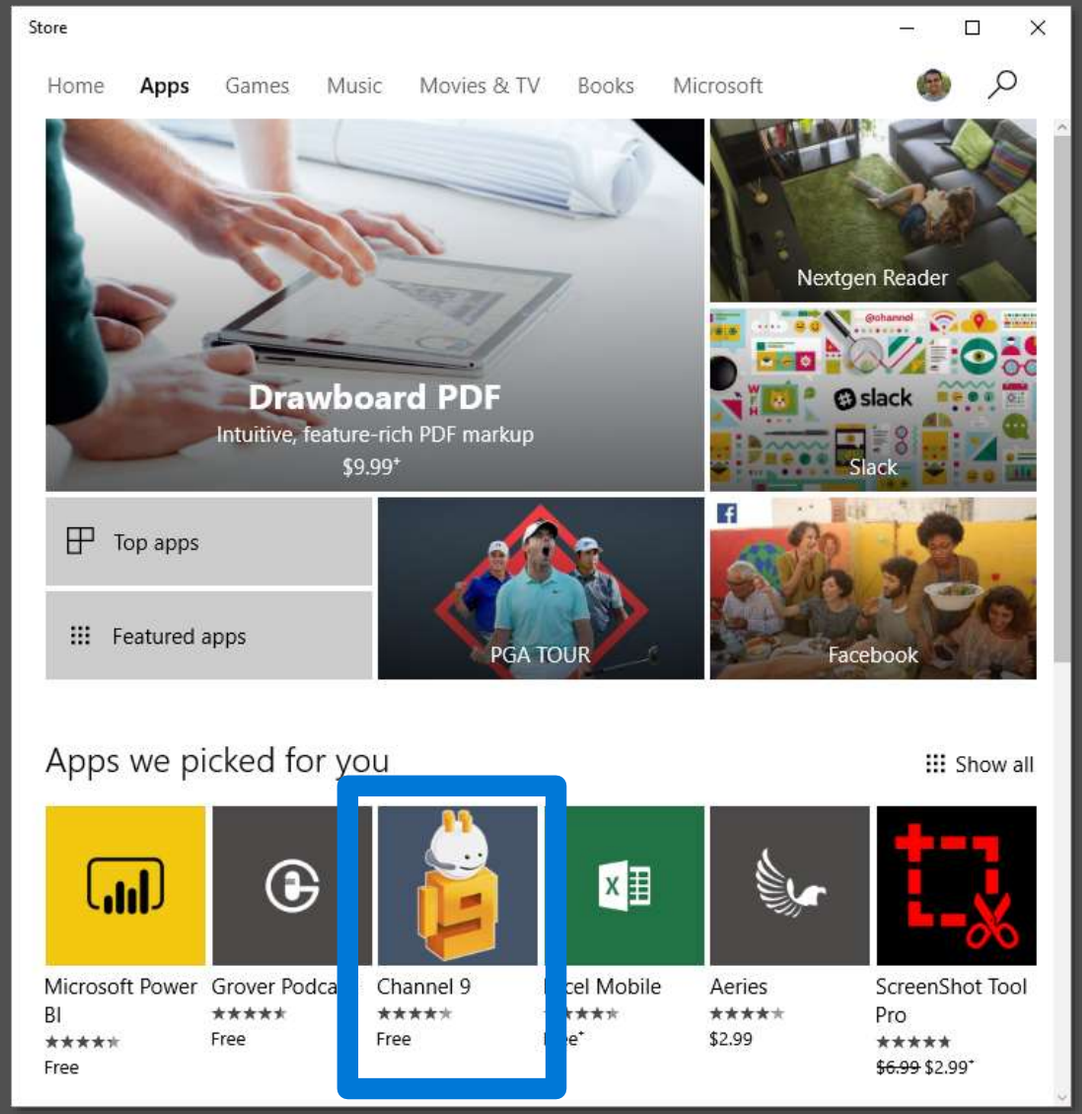
Web App Container

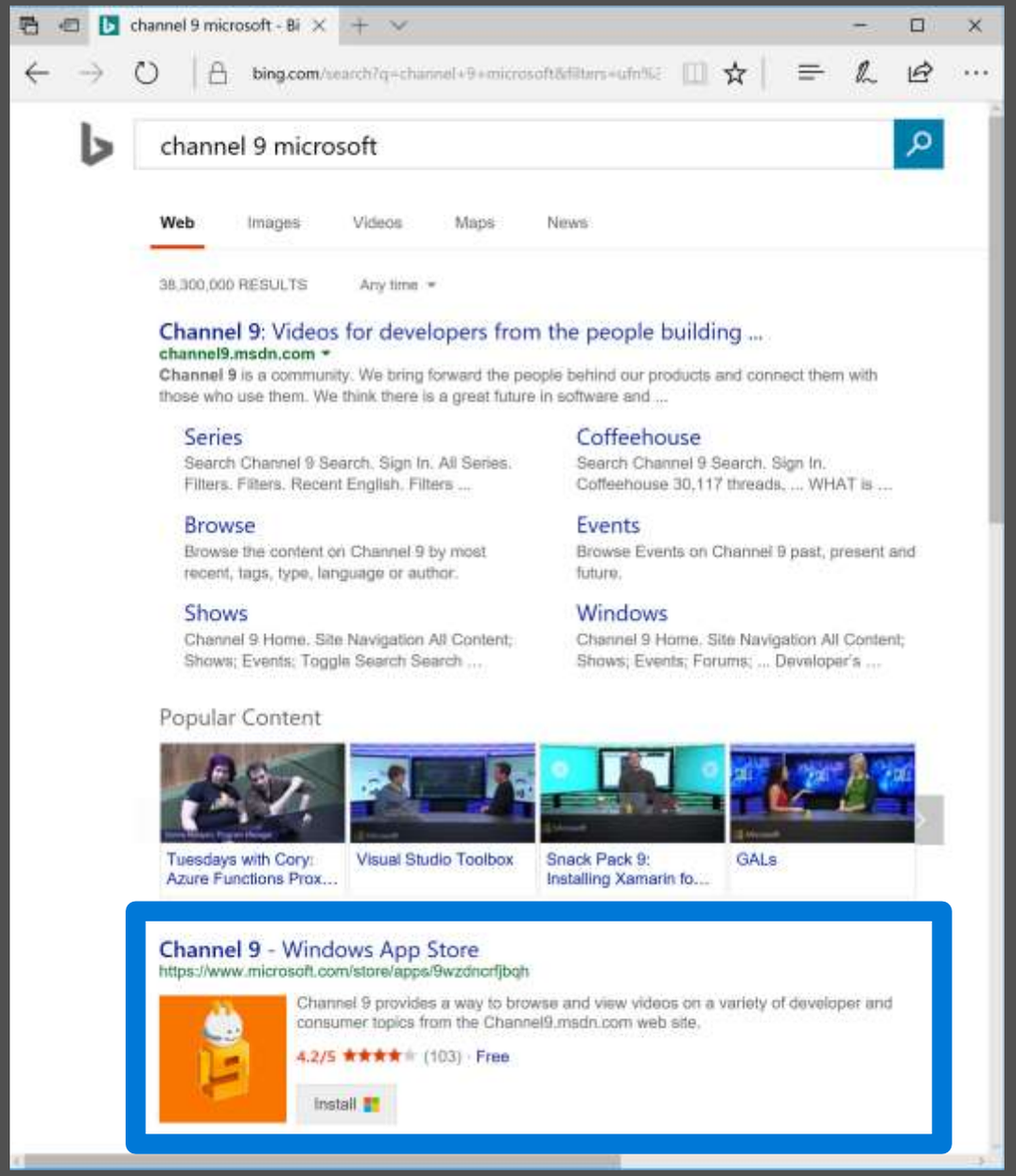
- Standalone Window
- Independent from browser process
  - Less overhead
  - Isolated cache
- Nearly unlimited storage (indexed DB, localStorage, etc.)
- Offline & background processes
- Access to Windows Runtime (WinRT) APIs via JavaScript
  - Calendar
  - Cortana
  - Address Book

Progressive Web Apps are Hosted Web Apps, evolved

How does a user discover a Progressive Web App?

Currently: Store & Bing





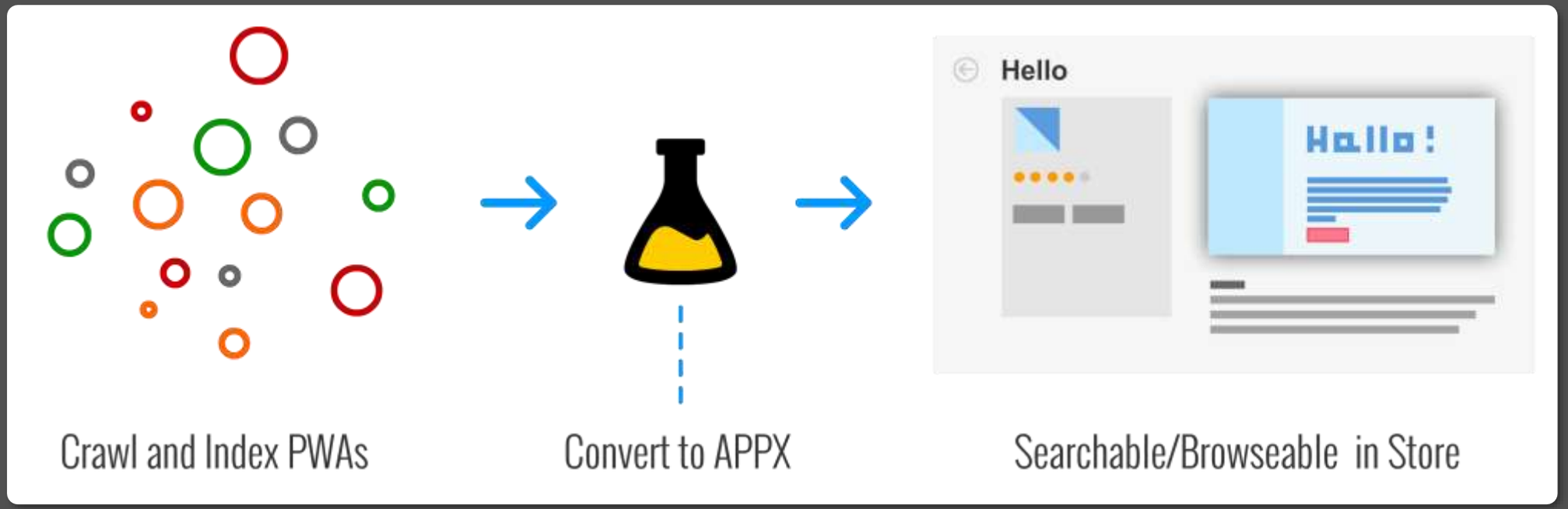
Progressive Web Apps in the Store?!?

Getting PWAs into the Windows Store

- Active Submission
- Passive Ingestion
  Do nothing and we will add your PWA automatically*

* You can opt out using robots.txt

PWA Ingestion Process (Passive)



Opting out with robots.txt

```
User-agent: bingbot
Disallow: /manifest.json
```

PWA Ingestion Process (Passive)

- Does this site have a Web App Manifest?
  (1.5 million manifests across 800k domains!)

PWA Ingestion Process (Passive)

- Does this site have a Web App Manifest?
- Does the Web App Manifest suggest quality?
  - Not boilerplate
  - name
  - description
  - icon >= $192px^2$

PWA Ingestion Process (Passive)

- Does this site have a Web App Manifest?
- Does the Web App Manifest suggest quality?
- Is the site secure?

PWA Ingestion Process (Passive)

- Does this site have a Web App Manifest?
- Does the Web App Manifest suggest quality?
- Is the site secure?
- Does the site have a valid Service Worker?

PWA Ingestion Process (Passive)

- Does this site have a Web App Manifest?
- Does the Web App Manifest suggest quality?
- Is the site secure?
- Does the site have a valid Service Worker?
- Is the site popular?
  - Alexa
  - Quantcast
  - etc.

PWA Ingestion Process (Passive)

- Does this site have a Web App Manifest?
- Does the Web App Manifest suggest quality?
- Is the site secure?
- Does the site have a valid Service Worker?
- Is the site popular?
- Does the site pass automated testing for quality?

PWA Ingestion Process (Passive)

- Does this site have a Web App Manifest?
- Does the Web App Manifest suggest quality?
- Is the site secure?
- Does the site have a valid Service Worker?
- Is the site popular?
- Does the site pass automated testing for quality?
- Is the app content free?

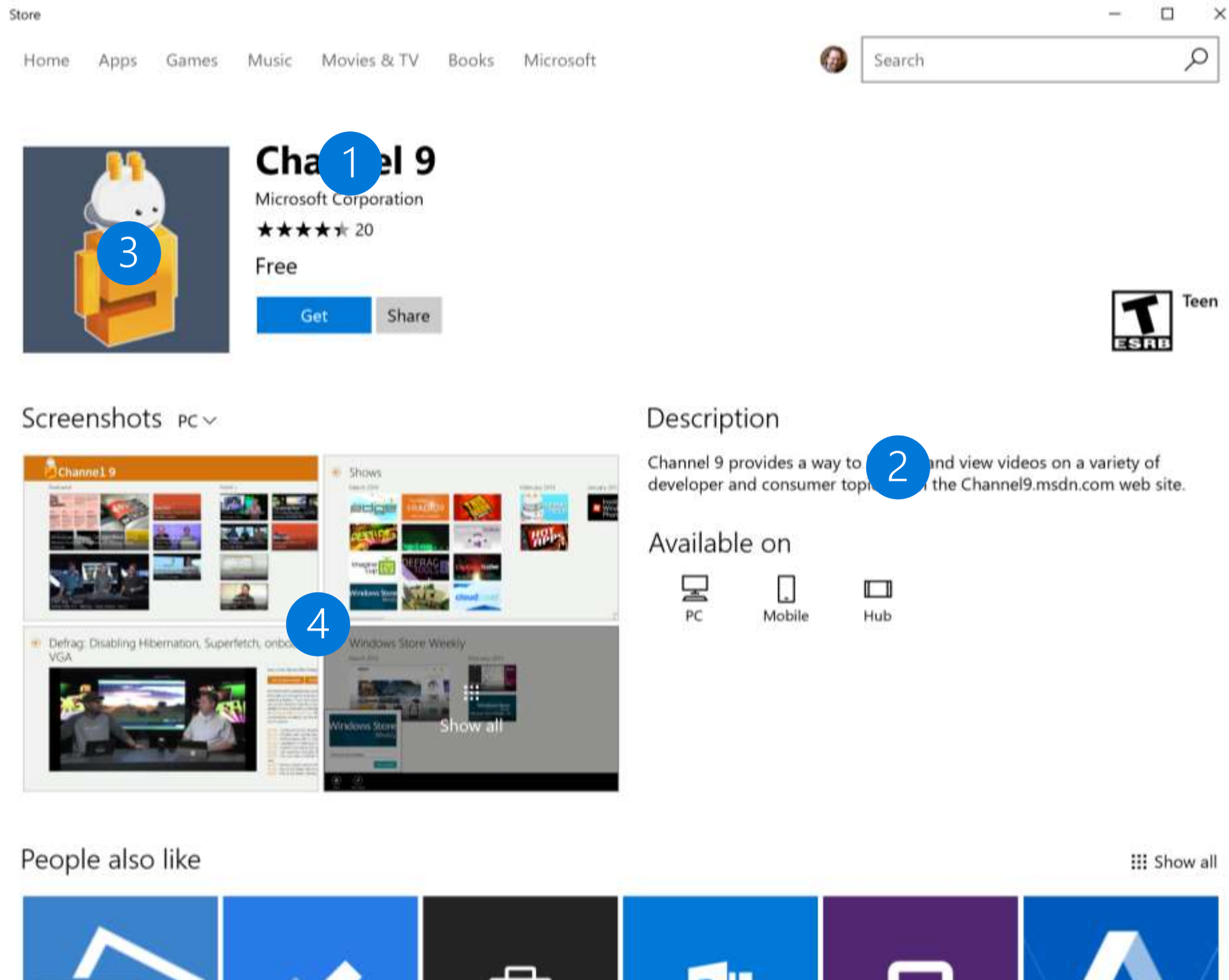
PWA Ingestion Process (Passive)

- Does this site have a Web App Manifest?
- Does the Web App Manifest suggest quality?
- Is the site secure?
- Does the site have a valid Service Worker?
- Is the site popular?
- Does the site pass automated testing for quality?
- Is the app content free?
- Does the app pass manual review?

PWAs in the Store

app.manifest populates the entry:

1. name
2. description
3. icons
4. screenshots



From a users' perspective,
a PWA will just be an app.

Should I forget everything I know & start building a Progressive Web App?

No.

Will Microsoft drop support for my favorite programming language in favor of Progressive Web Apps?

No.

Are Progressive Web Apps the right choice for my project?

Maybe.

Should I consider Progressive Web Apps as a solid option when developing software for Windows?

Definitely.

Related sessions

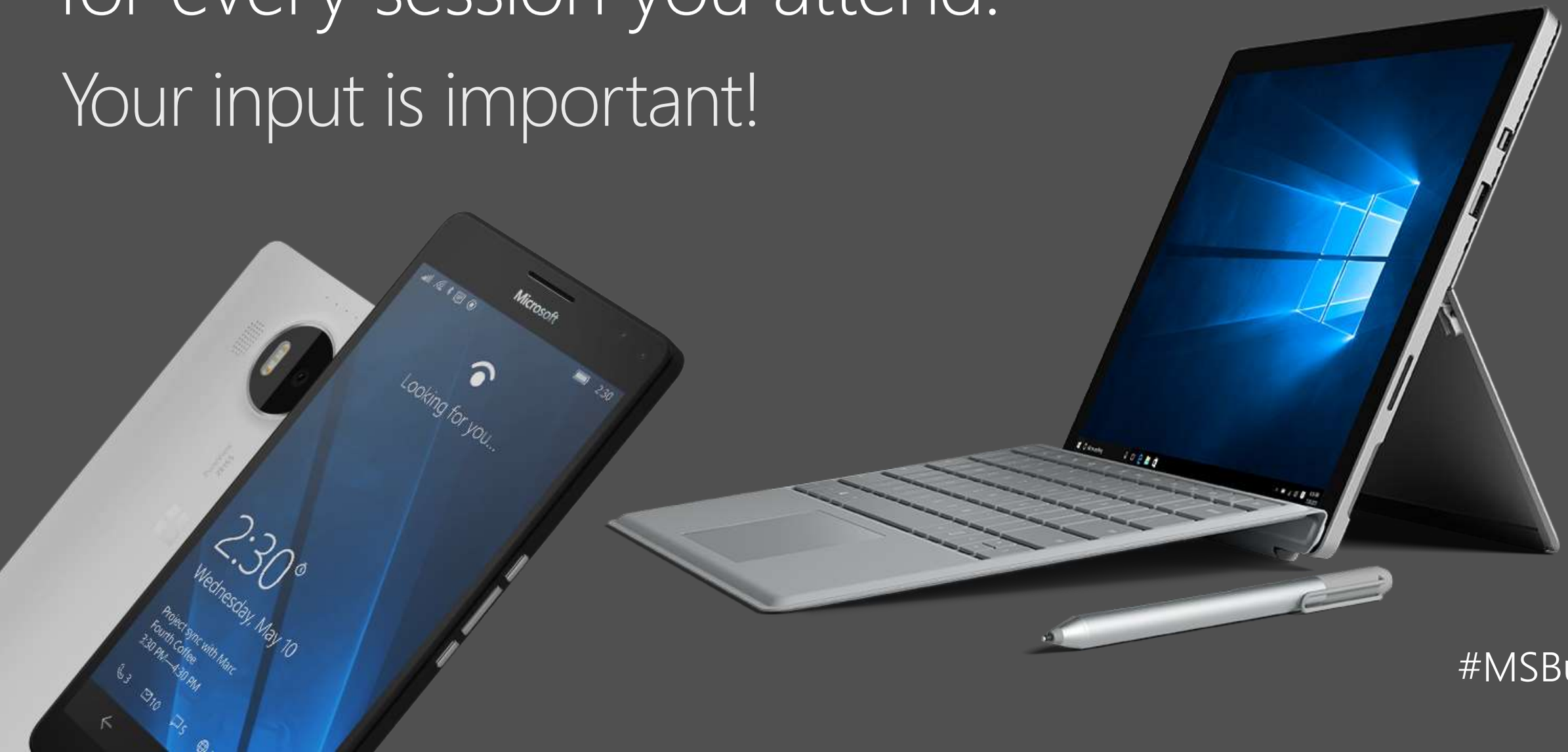
- Live Breakouts:
  - Microsoft Edge: What's new and what's next for the web and web apps on Windows
    B8041 - Kyle Pflug & Nadia Fortini
  - Windows Store: Manage and promote apps your way
    B8098 - Bernardo Zamora & Jonathan Garrigues
- Recordings:
  - WebVR: Adding VR to your websites and web apps
    P4097 - David Rousset & Etienne Margraff
  - Go big! Optimizing your applications for large screen experiences
    P4115 - Mark Rideout

Thank you.

Questions?

Please Complete An Evaluation Form for every session you attend.

Your input is important!



#MSBuild

Microsoft

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