



How frontend platforms are helping us evolve realestate.com.au



Stewart Gleadow

Architect | realestate.com.au | [@stewgleadow](https://twitter.com/stewgleadow)



REA Group



Scaling journey



Web platform



Native platform



Future direction



Lessons



Scaling journey



Web platform



Native platform



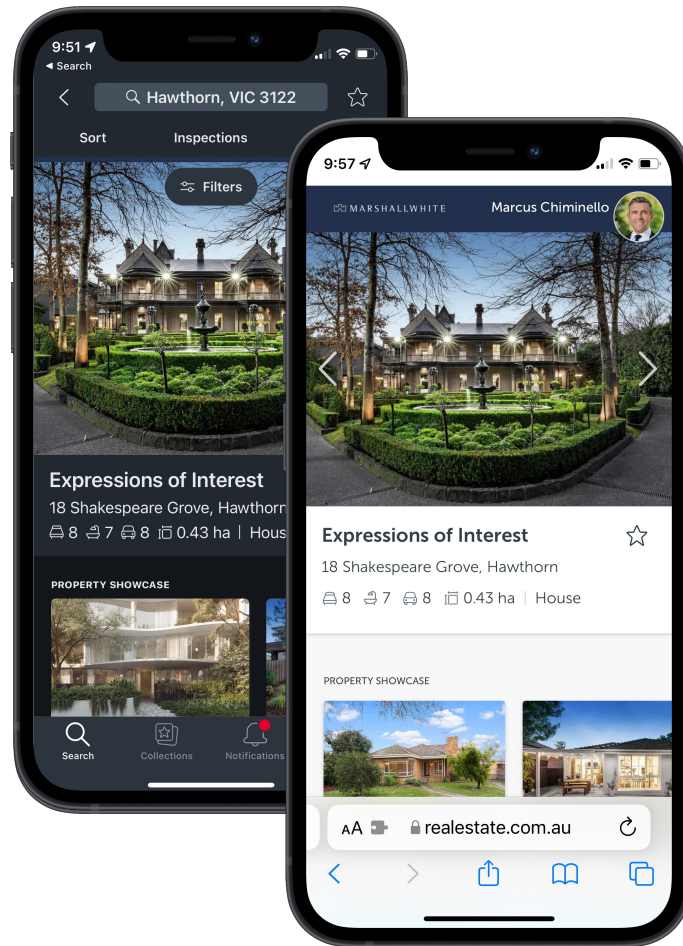
Future direction



Lessons



- 129m monthly visits¹
- 12.6m monthly users²
- 650 tech people
- 60 squads
- 75 initiatives



(1) Nielsen Digital Media Ratings (Monthly Tagged), July-September 21, P2+, Digital (C/M), text, realestate.com.au vs Domain, Total Sessions.

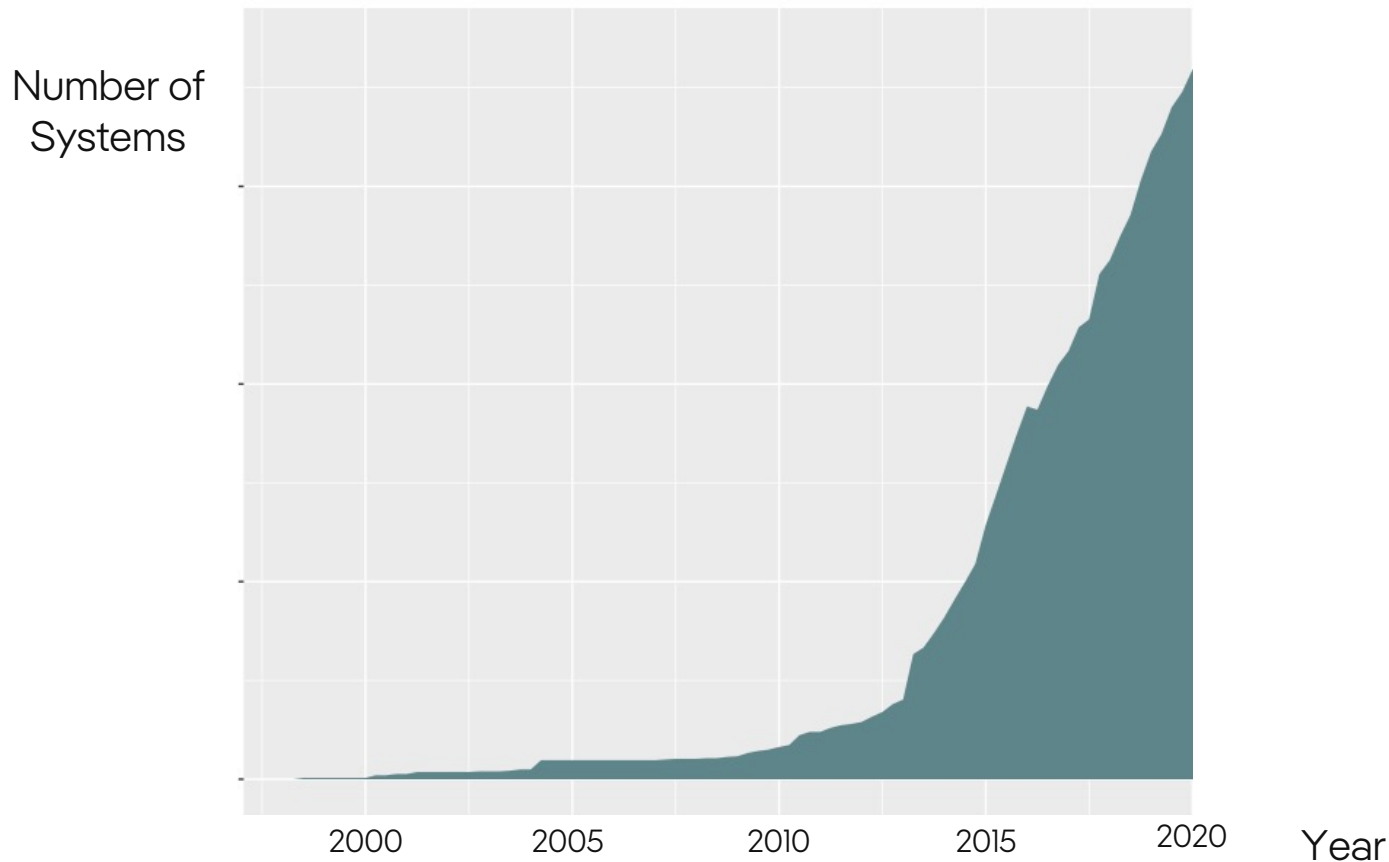
(2) Nielsen Digital Media Ratings (Monthly Tagged), July-September 21 (monthly averages), P2+, Digital (C/M), text, realestate.com.au, Unique Audience.

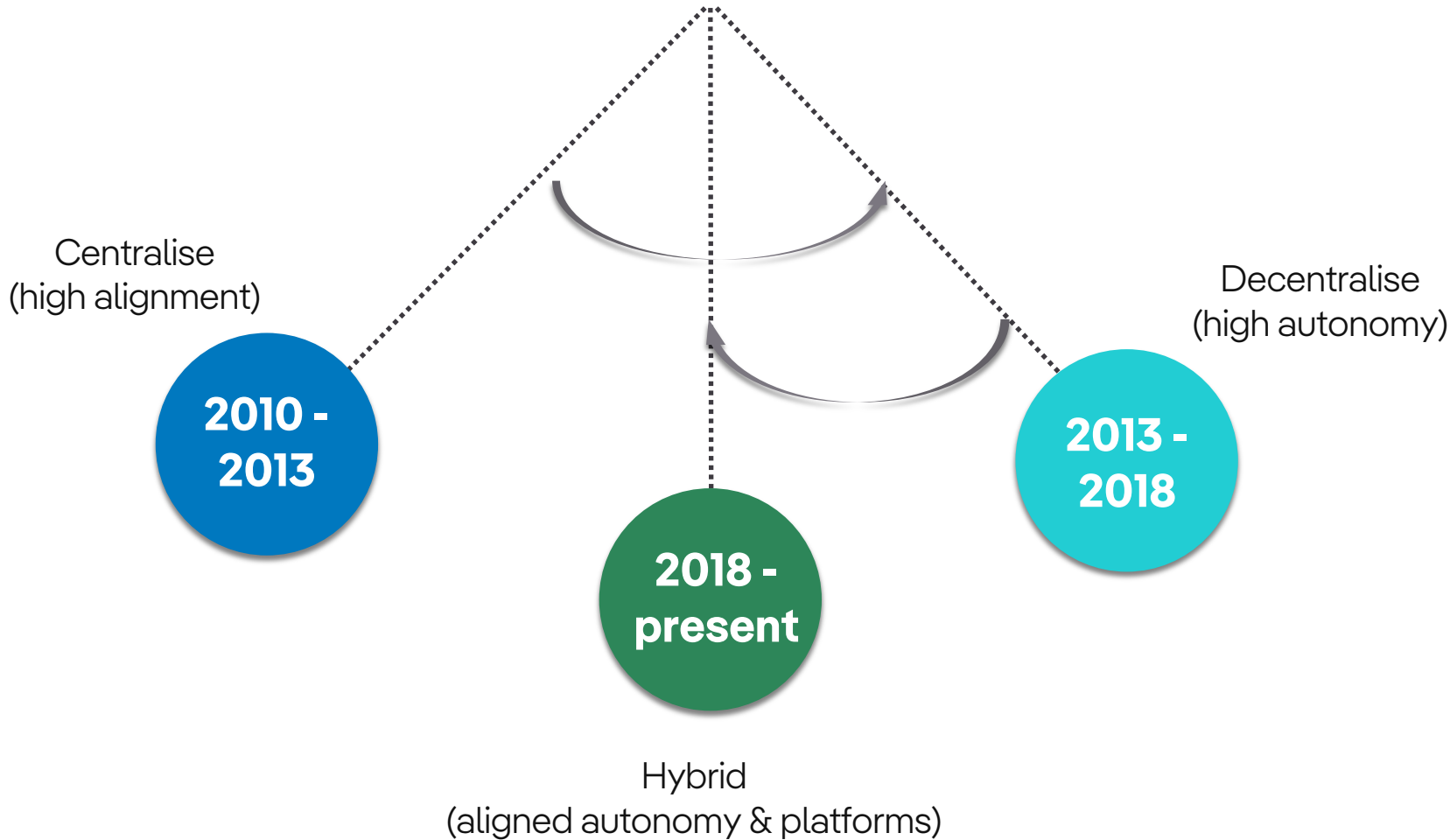
2010

2015

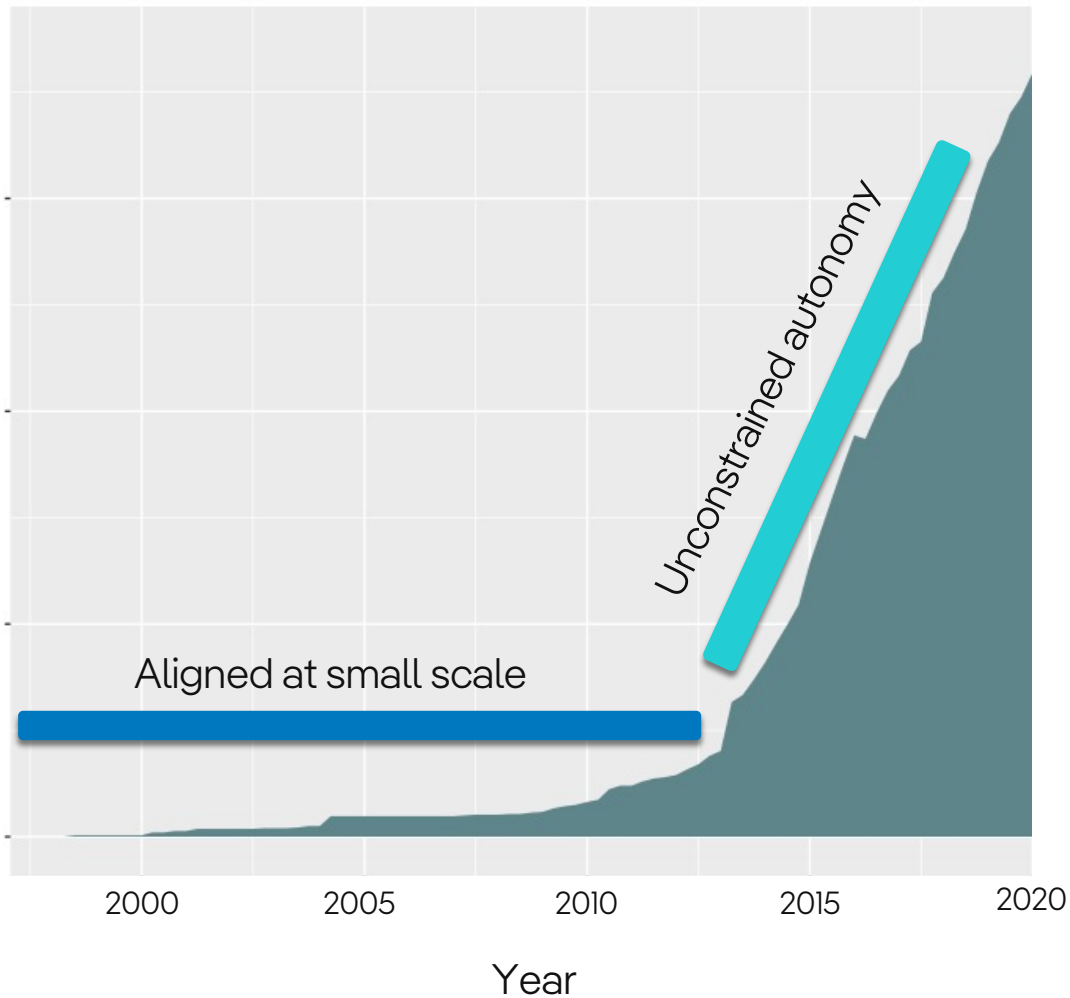
2020

Building software at different scales





Number of
Systems

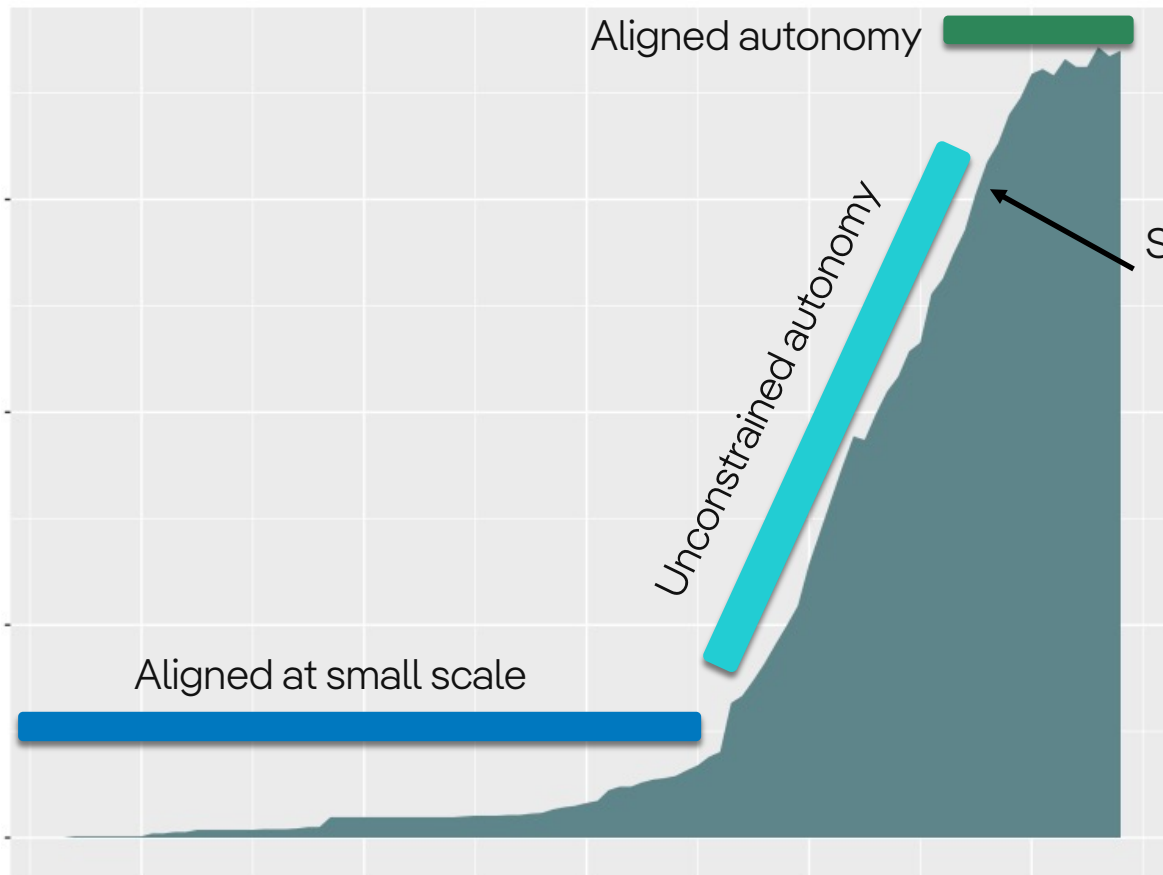


^colab

1. A mindset shift from local to company-wide tech thinking.
2. Approaching tech platforms as long-lived products.



Number of
Systems



Aligned autonomy

Unconstrained autonomy

Aligned at small scale

Shifted to an internal
platform strategy

2000

2005

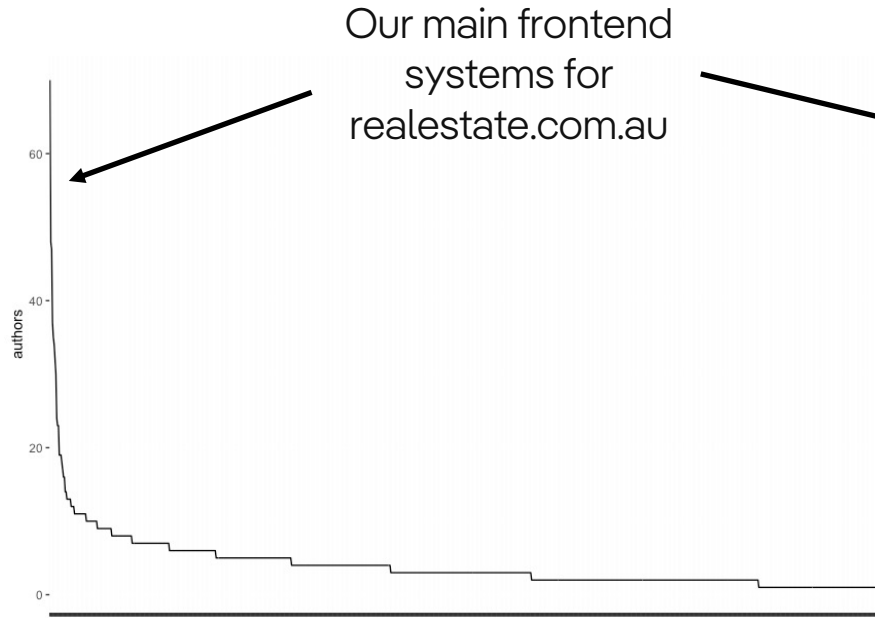
2010

2015

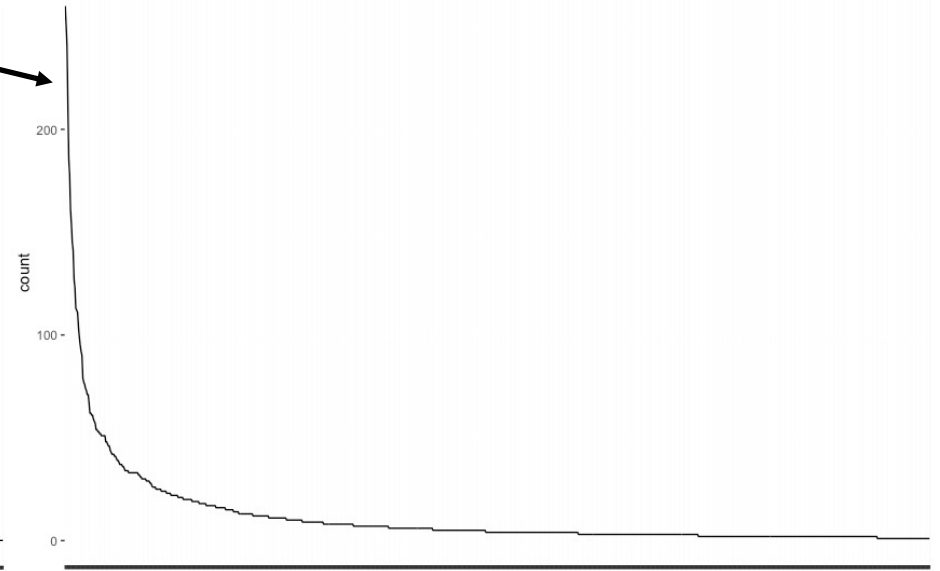
2020

Year

Different scaling journey for the front end



Unique authors per system



Pull requests per system



Scaling journey



Web platform



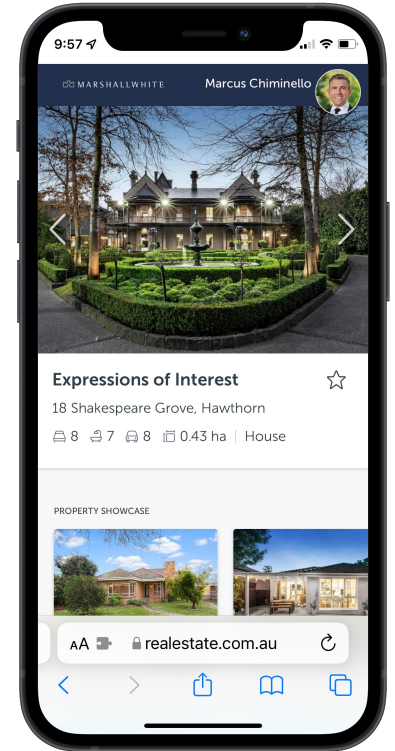
Native platform



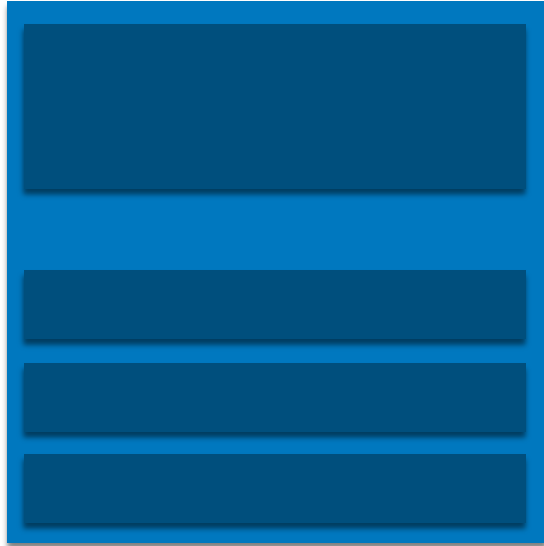
Future direction



Lessons



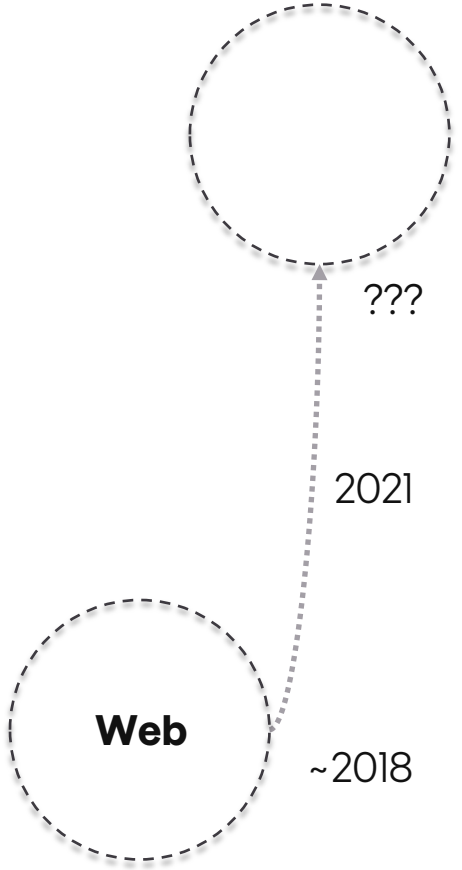
Web Platform



Alignment



Autonomy



Web

???

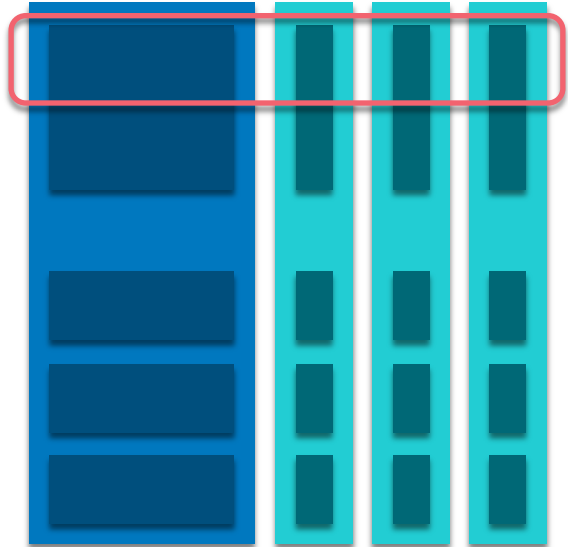
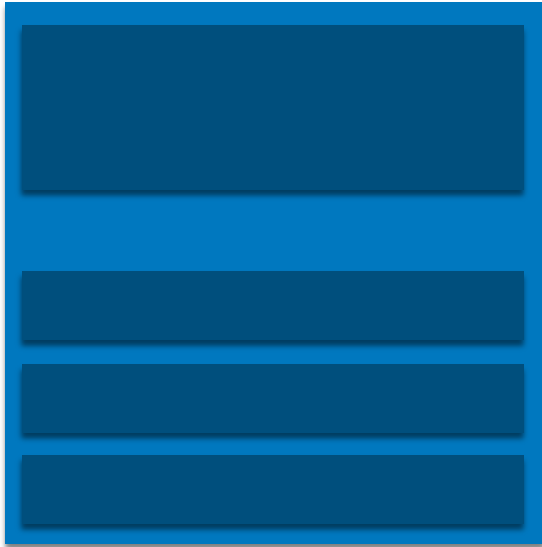
2021

~2018

Web Platform

Monolith

Micro UIs



Start with your
design system



ConstructKit



ConstructKit

Start with the foundations

textPrimary



#3D3A40



#F6F5F7

textSecondary



#716E75



#959199

textInverted



#FFFFFF



#3D3A40

extraSmall



0.5rem (8px)

small



0.75rem (12px)

medium



1rem (16px)

large



1.5rem (24px)

body01

Default primary content. Use this for the main copy.

LINE HEIGHT 1.5rem (24px)

FONT SIZE 1rem (16px)

FONT WEIGHT 400

LETTER SPACING default

FONT VARIATION "XTDR" 50, "



<BalconyLg />



<BathLg />



<BathMd />



<BbqLg />



Build from the bottom up based on need

Name

```
<TextInput label="Name" placeholder="Name" hideLabel />
```

[Source code](#) [Clipboard](#) [Playroom](#)

Primary Secondary Outline Naked

```
<Card>
  <Inline grow={false} inset="medium">
    <Button>Primary</Button>
    <Button variant="secondary">Secondary</Button>
    <Button variant="outline">Outline</Button>
    <Button variant="naked">Naked</Button>
  </Inline>
</Card>
```

[Source code](#) [Clipboard](#) [Playroom](#)



ConstructKit

Business-level components are valuable (but later)

Multiple locations

Richmond, VIC 3121 ✕

Hawthorn, VIC 3122 ✕

Search for a suburb

```
<Stack>
  <MultiLocationSuggest
    label="Multiple locations"
    placeholder="Search for a suburb"
    requestSource="construct-kit-docs"
  />
</Stack>
```

 Source code

 Clipboard

 Playroom

Multiple locations

```
<Stack>
  <MultiLocationSuggest
    label="Multiple locations"
    placeholder=""
    requestSource="construct-kit-docs"
  />
</Stack>
```

 Source code

 Clipboard

 Playroom

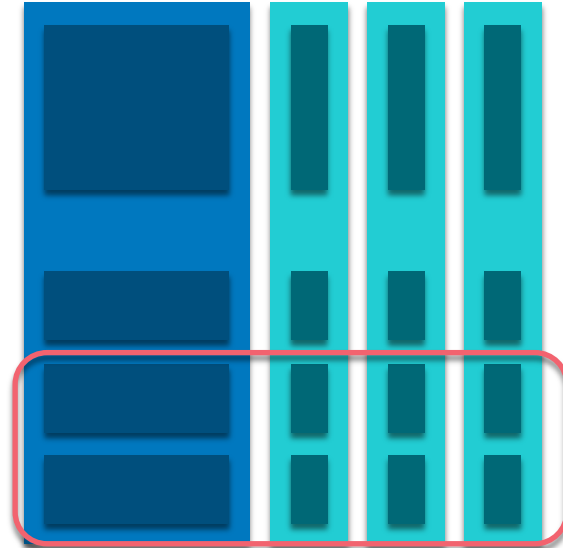
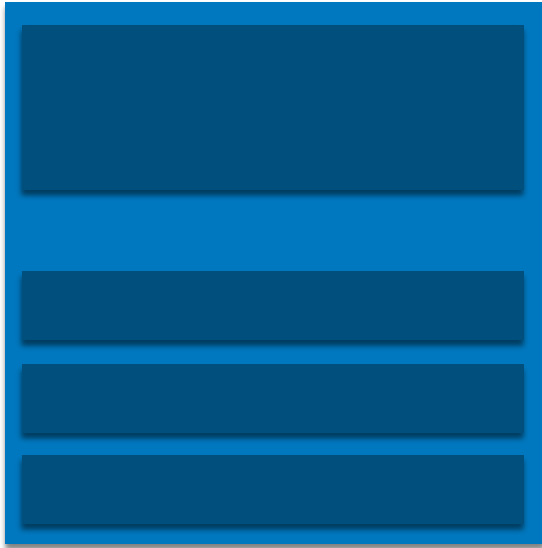


**Start with your
design system.**

Web Platform

Monolith

Micro UIs

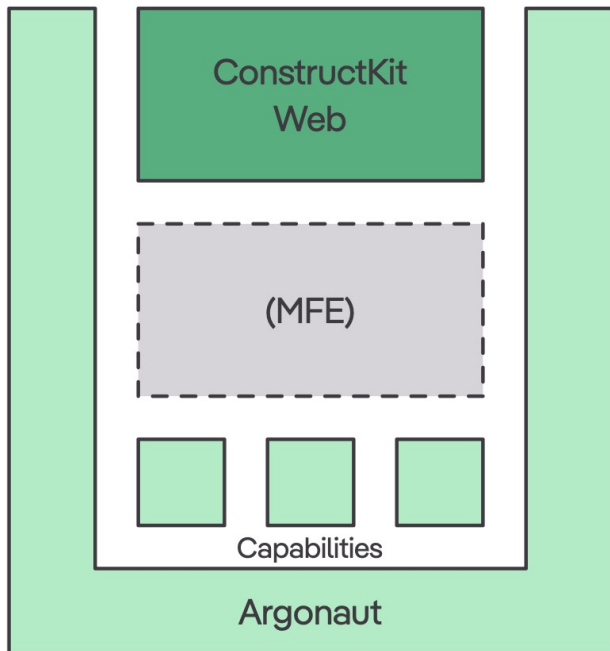


Argonaut

Identify common
web concerns



Argonaut



Capabilities

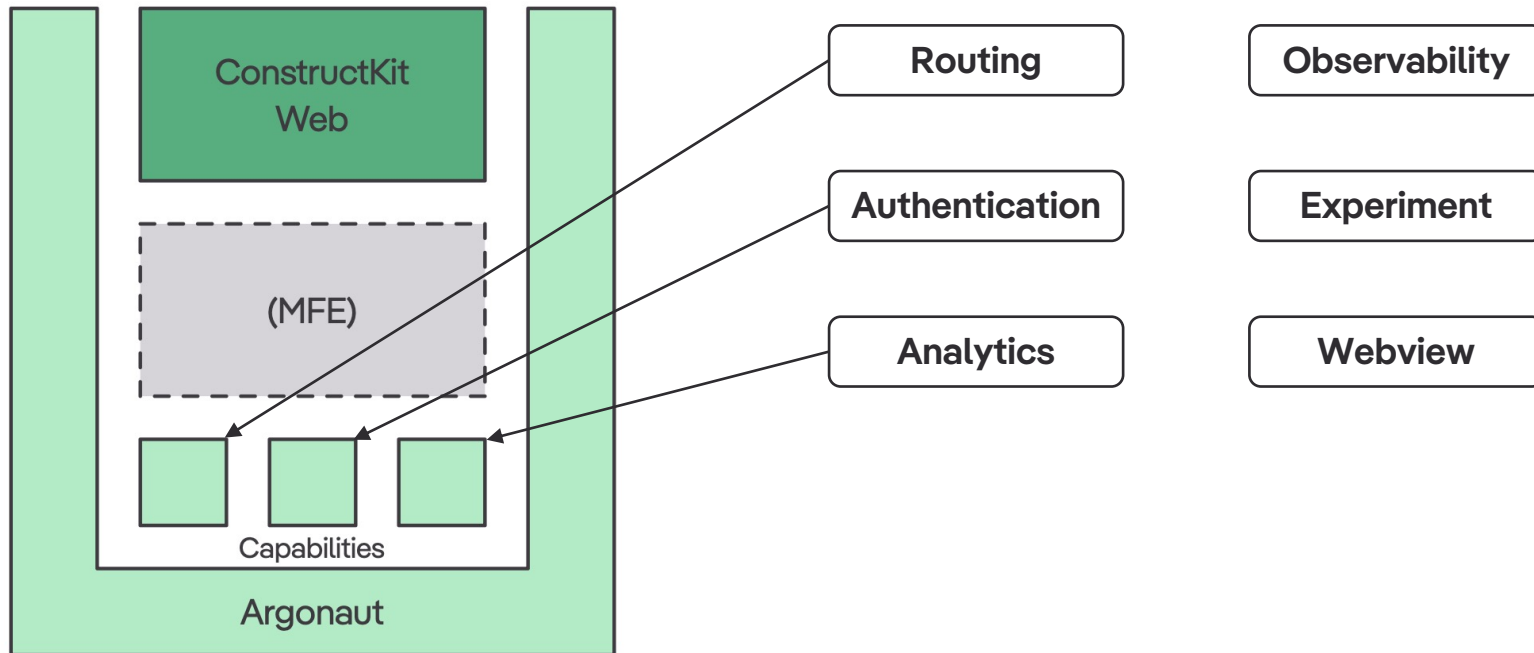
Micro Frontends

Tooling



Argonaut

Capabilities





Argonaut

Micro Frontends

```
36 export const getAction: GetAction = async (): Promise<Action> =>
37   renderAction(async () => ({
38     getElements: async () => {
39       return {
40         Screen: (
41           <div>
42             <H1>Hello YOW conference 🙌</H1>
43             <P>Isn't it cool how simple it is to integrate with Argonaut?</P>
44           </div>
45         ),
46       };
47     },
48     getHead: async () => join(title("YOW Conference"),
49   }));
50
```

realestate.com.au

Hello YOW conference 🙌

Isn't it cool how simple it is to integrate with Argonaut?



Advertise with us

Contact us

Agent admin

Media sales

Legal

Privacy

Site map

Careers

Personalised advertising: We show you more relevant advertising based on your activity. Prefer us not to? [Opt Out](#) of personalisation.

REA Group

realestate.com.au

realcommercial.com.au

spacely

Flatmates.com.au

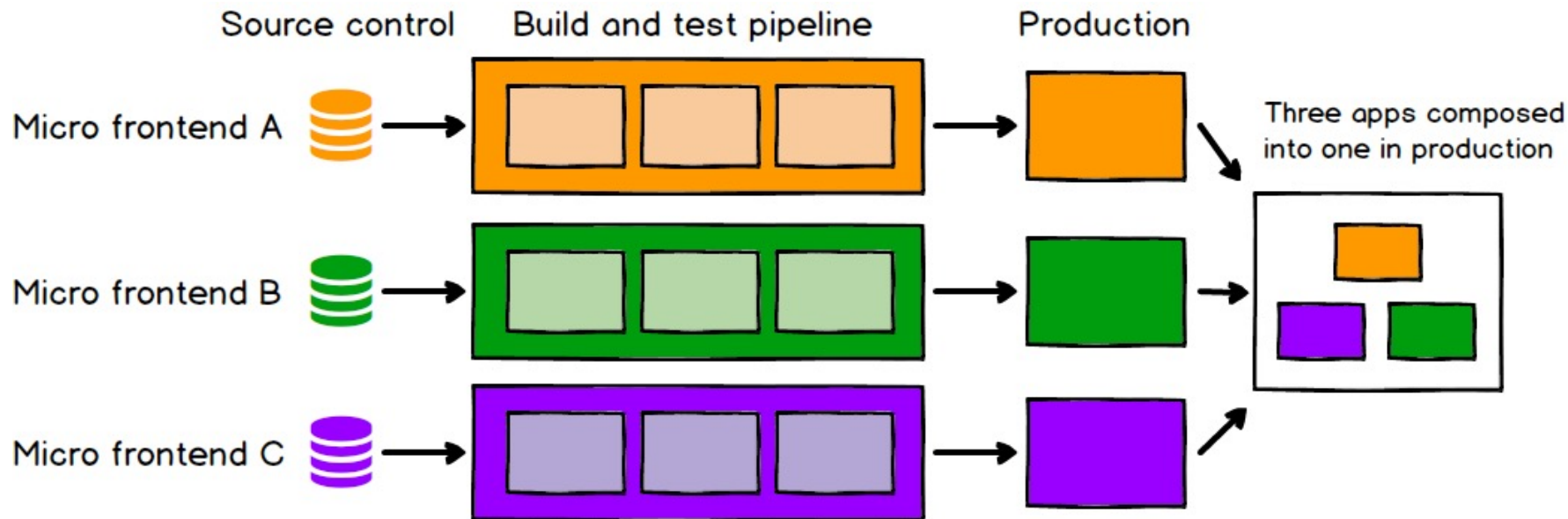
International sites

China | Malaysia | Singapore | Hong Kong | Indonesia
| Thailand | Vietnam | India | International properties



Argonaut

Micro Frontends



<https://martinfowler.com/articles/micro-frontends.html>

Branch deploys

The screenshot shows a CI/CD pipeline interface for a project named "RE A Group". The pipeline is titled "homepage-web / dependabot/npm_an..." and is currently in a "Passed" state, having completed in 21m 37s. The build number is #600, and the commit hash is 18bab1a. The pipeline consists of several steps: "upload", "Dependencies", "Unit Tests", "E2E Tests", "Lint", "Prettier", and "Development release". The "Development release" step is highlighted with a red box, indicating it is the current step or the step of interest. Below the pipeline steps, there is a "Rebuild" button. The interface also shows the user "Shane Gibb" and various navigation options like "My Builds", "Help", "Agents", and "Teams".

RE A Group / homepage-web / dependabot/npm_an...
Home page as an MFE

All Builds Edit Steps Pipeline Settings New Build

Bump @construct-kit/core from 4.3.2 to 4.4.0
Build #600 | dependabot/npm_and_yarn/construct-kit/core-4.4.0 | 18bab1a
Passed in 21m 37s

upload Dependencies > Unit Tests E2E Tests Lint Prettier > Development release

dependabot-walle[bot]
Created Friday at 06:30 | Triggered from Webhook
Rebuild

Unit Tests auto/unit-test
Ran in 2m 29s | Waited 8s | buildkite-agent-default-ip-10-...

E2E Tests auto/e2e-test
Ran in 3m 6s | Waited 9s | buildkite-agent-default-ip-10-...

Lint auto/lint
Ran in 1m 28s | Waited 2s | buildkite-agent-default-ip-10-...

Prettier auto/prettier
Ran in 1m 19s | Waited 3s | buildkite-agent-default-ip-10-...

Development release auto/publish-to-dev
Ran in 1m 35s | Waited 1s | buildkite-agent-cops-dev-dep...

```

33 ;
34
35 const Screen: FC<ScreenProps> = ({ articles }) => {
36   useEffect(() => {
37     removePrefillData();
38     trackPageView();
39   }, []);
40
41   return (
42     <<
43       <PageStyle />
44
45       <Hero>
46         <ChannelHeader />
47       </Hero>
48
49       <HomeLoanAd />
50       <PropertyNewsList articles={articles} />
51       <MobileAppAd />
52       <SeoFooter />
53       <DesktopLink />
54     </>
55   );
56 };
57
58 export default Screen;

```

1 yow-demo src/Screen.tsx
 "src/Screen.tsx" 58L, 1466C written

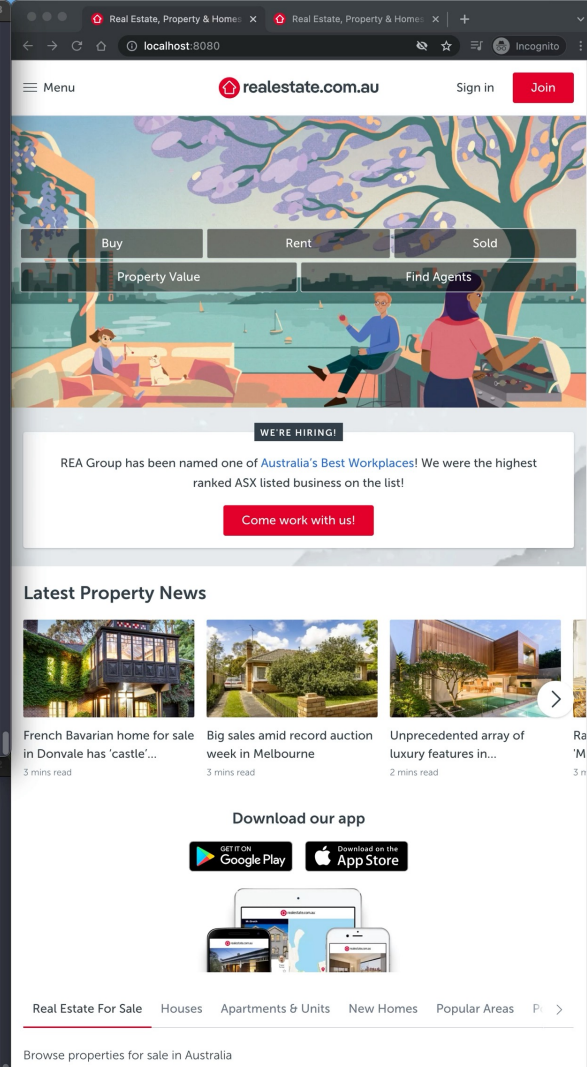
```

npm run start

```

Asset	Size	Chunks	Chunk Names
devices-0c4b020d9eb5aec3c5463251203014ff.webp	14.7 KiB	[immutable]	
devices-4214591be88c6ea27e7b73ad3d1919cd.png	96.5 KiB	[immutable]	
download-appstore-7f4fcdc5b6d5ab5b7c2208b1ef1e9114.svg	8.59 KiB	[immutable]	
download-googleplay-79c369bcef40c2f8514c8d1519b46723.svg	10.6 KiB	[immutable]	
finex-homepage-tile-bg@2x-e6a56f827064a762dfefb3f60f8f1103.webp	2.27 KiB	[immutable]	
finex-homepage-tile-bg@2x-e9754e8ab049fe2e9f3100313527e280.jpg	12.4 KiB	[immutable]	
node-home.js	5.83 MiB	home	home
web_lrg-42a6ca728fe32ed5be8ea33b187df766.jpg	233 KiB	[immutable]	
web_lrg-6f506ae429237a124627270a1bc908fd.webp	124 KiB	[immutable]	
web_sml-b19bb7f51b21488a566ac8d6cdf0eb5e.webp	53.7 KiB	[immutable]	
web_sml-c15ed454aa9cc91e0e4c67723f38ae93.jpg	89.2 KiB	[immutable]	

Entrypoint home = node-home.js
 No issues found.

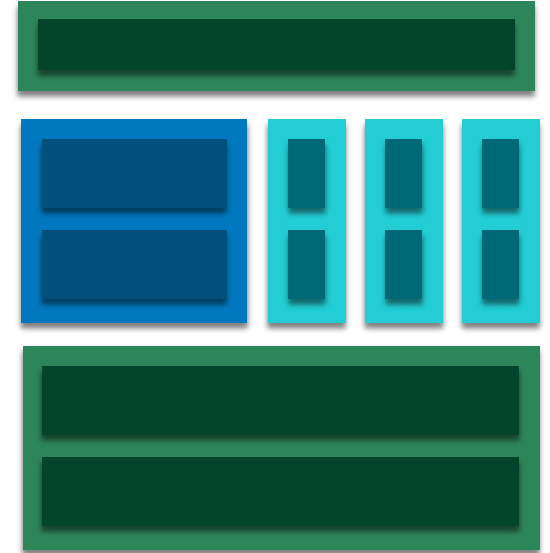
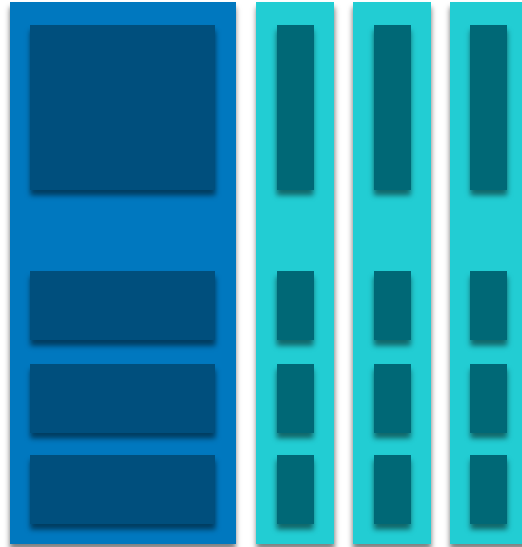
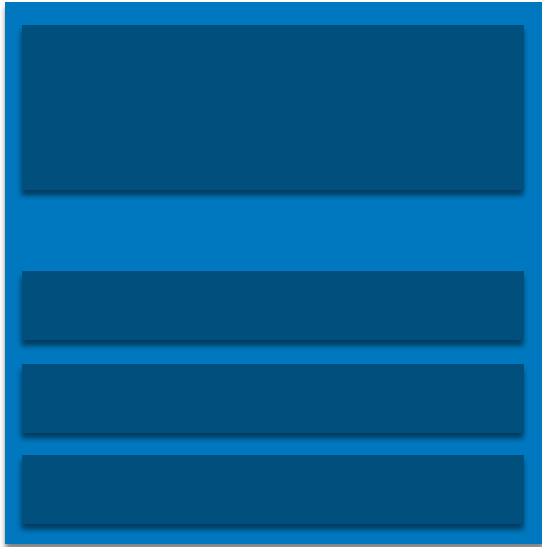


Web Platform

Monolith

Micro UIs

Micro Frontends





Used for **56%** of realestate.com.au experiences



Powers **28%** of realestate.com.au frontends



Saved an estimated **213,000** hours of effort



30-40% less code required after migration



60% faster build and deploy cycle



Scaling journey



Web platform



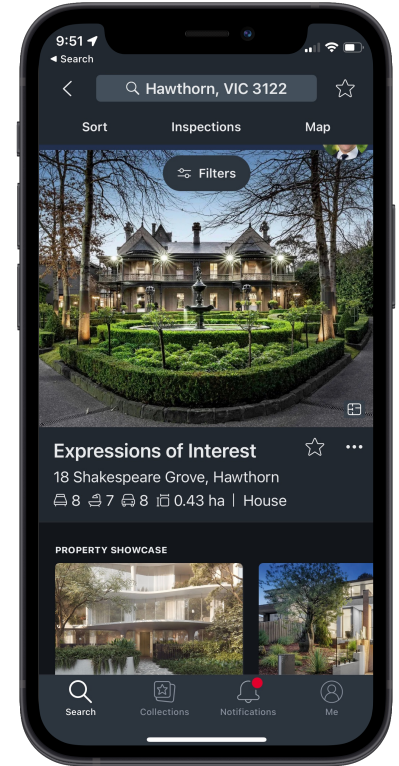
Native platform



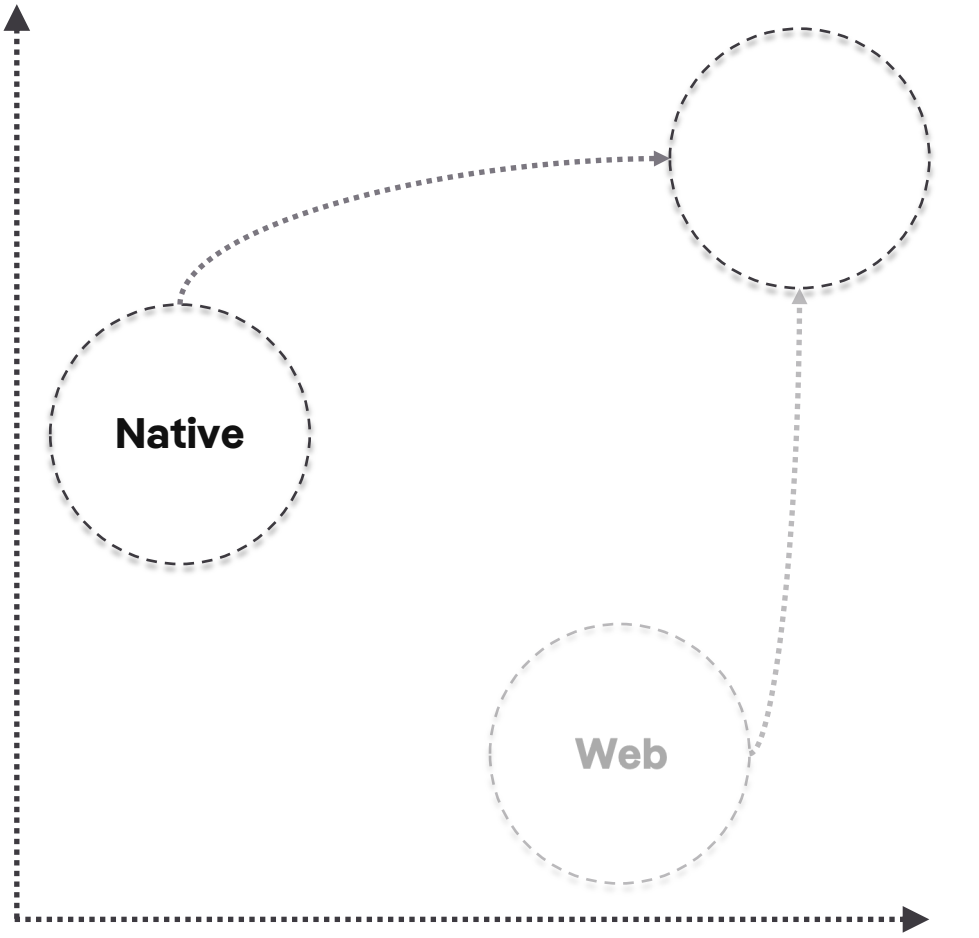
Future direction



Lessons



Alignment



Native

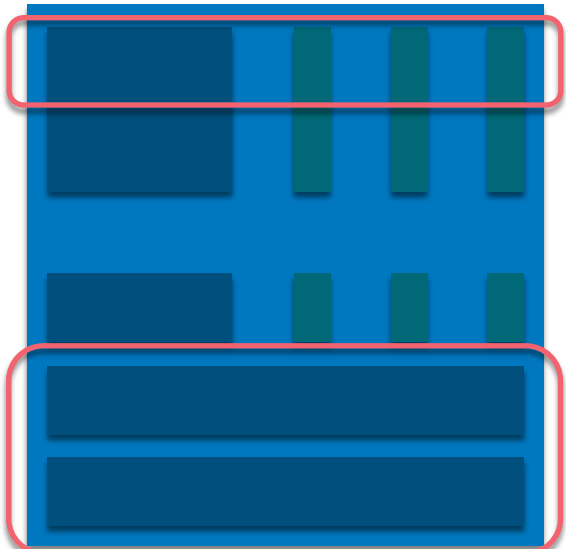
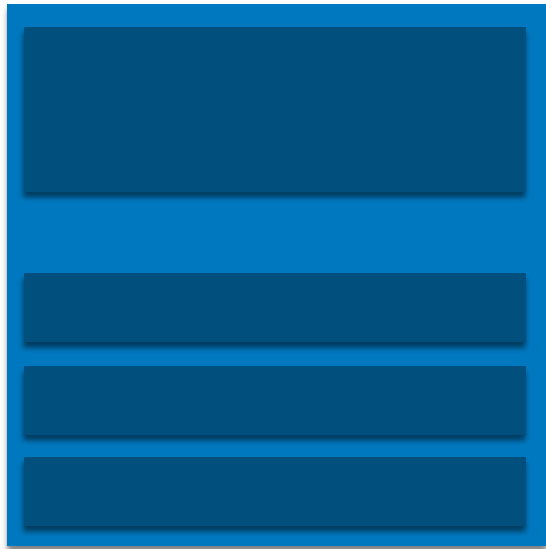
Web

Autonomy

Native Platform

Monolith

Modules



ConstructKit

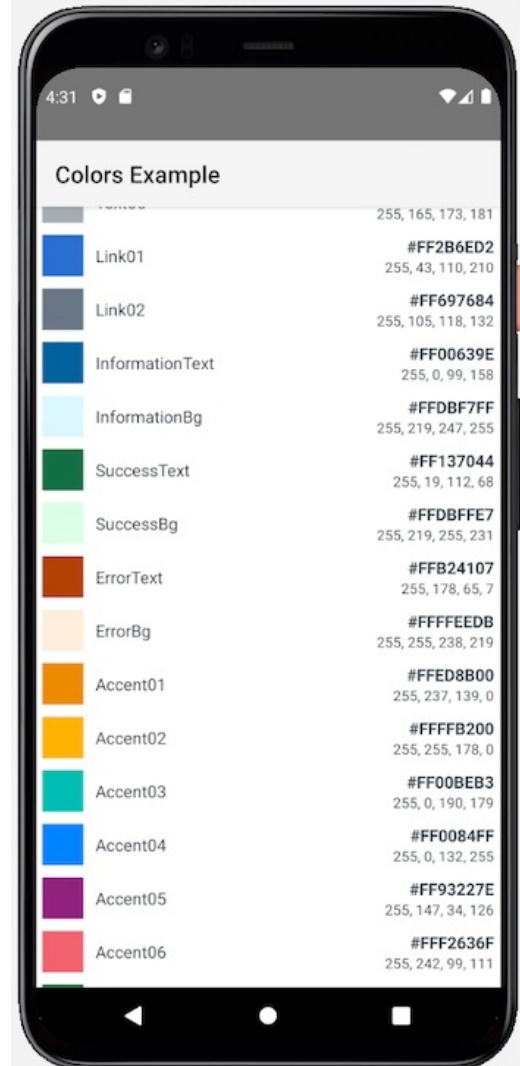
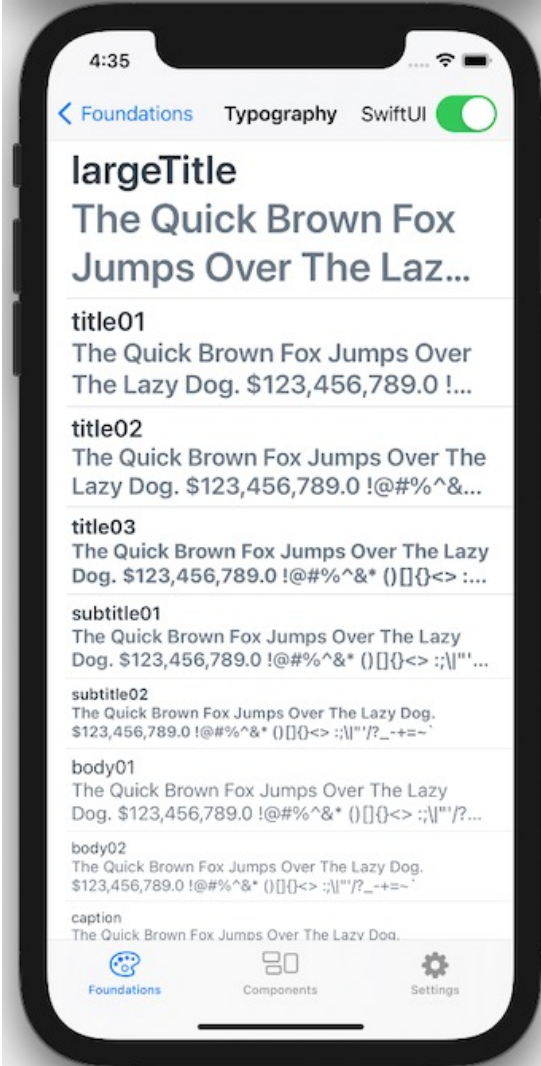


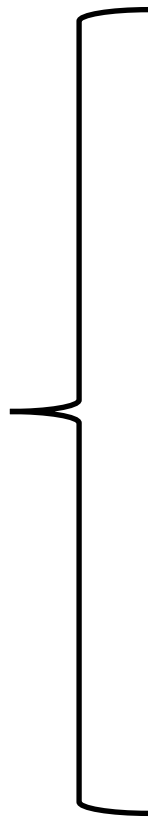
Nautilus



ConstructKit

Use standalone demo apps for any native mobile libraries.





SwiftUI



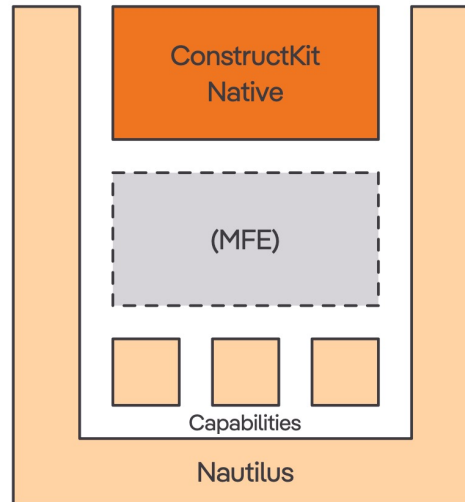
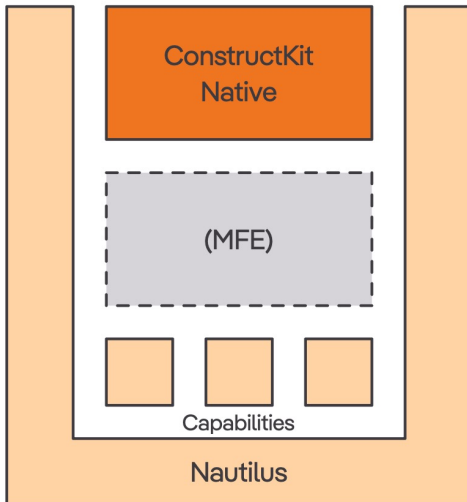
**Jetpack
Compose**



Nautilus

iOS

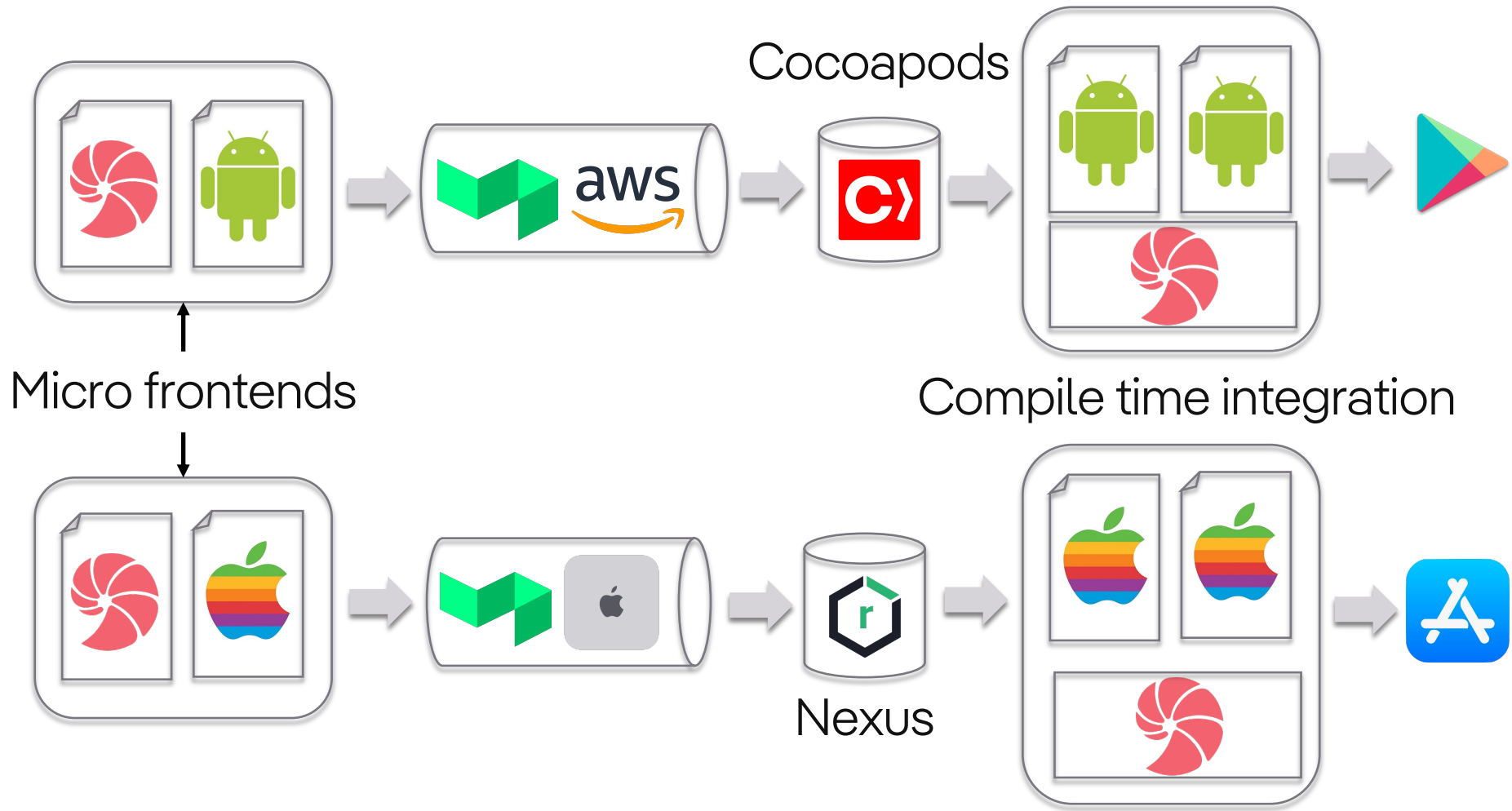
Android



Capabilities

Micro Frontends

Tooling

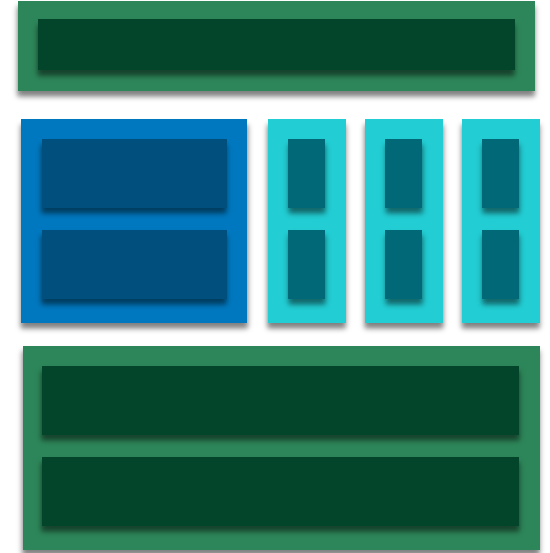
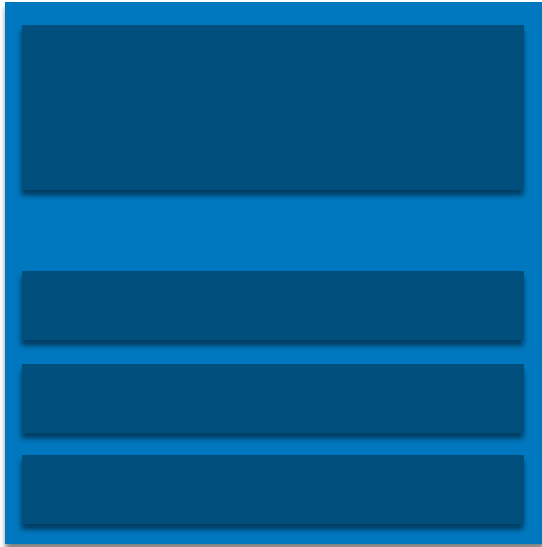


Native Platform

Monolith

Modules

Micro Frontends





Integrated into all our mobile frontends



Powers 5 separate micro frontends

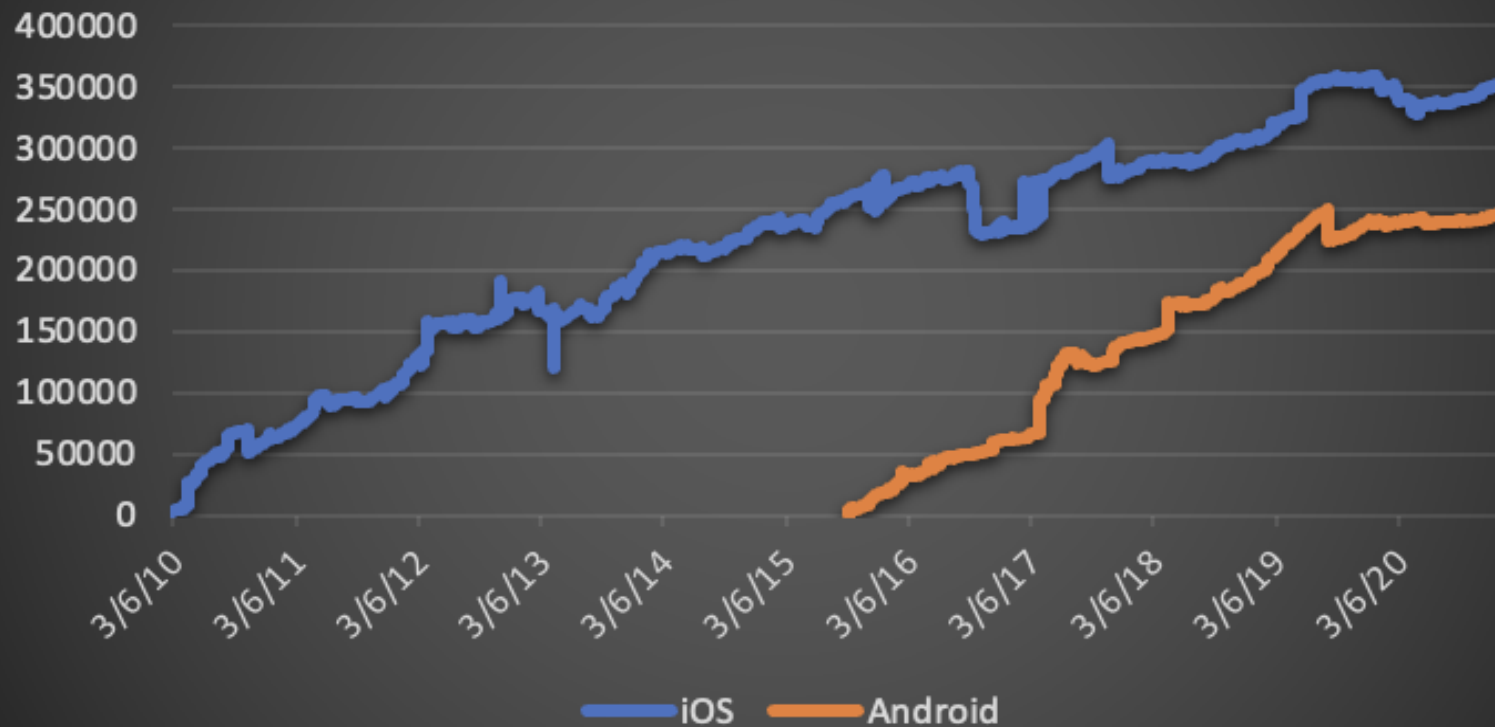


Helping drive visual consistency (and dark mode!)

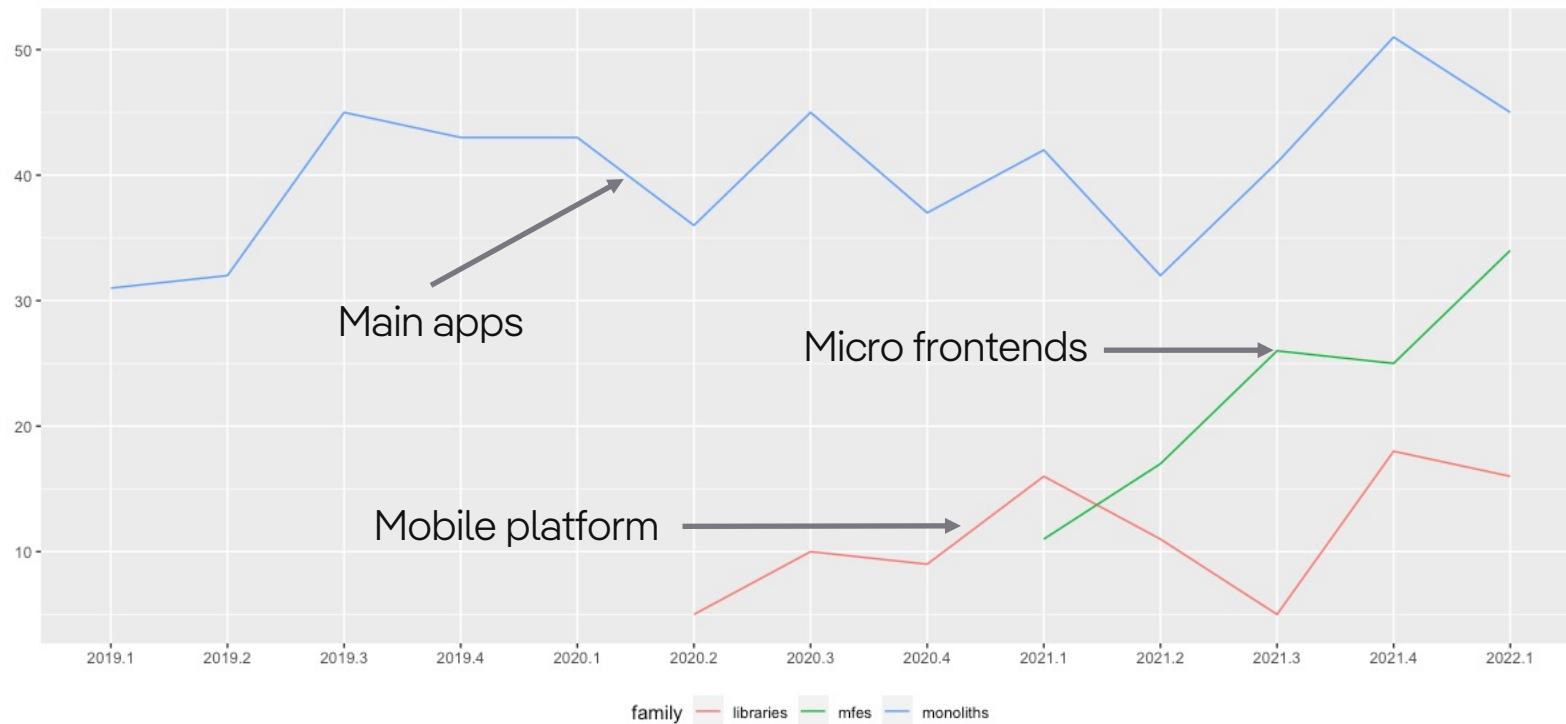


Fast feedback with fast local and CI build times

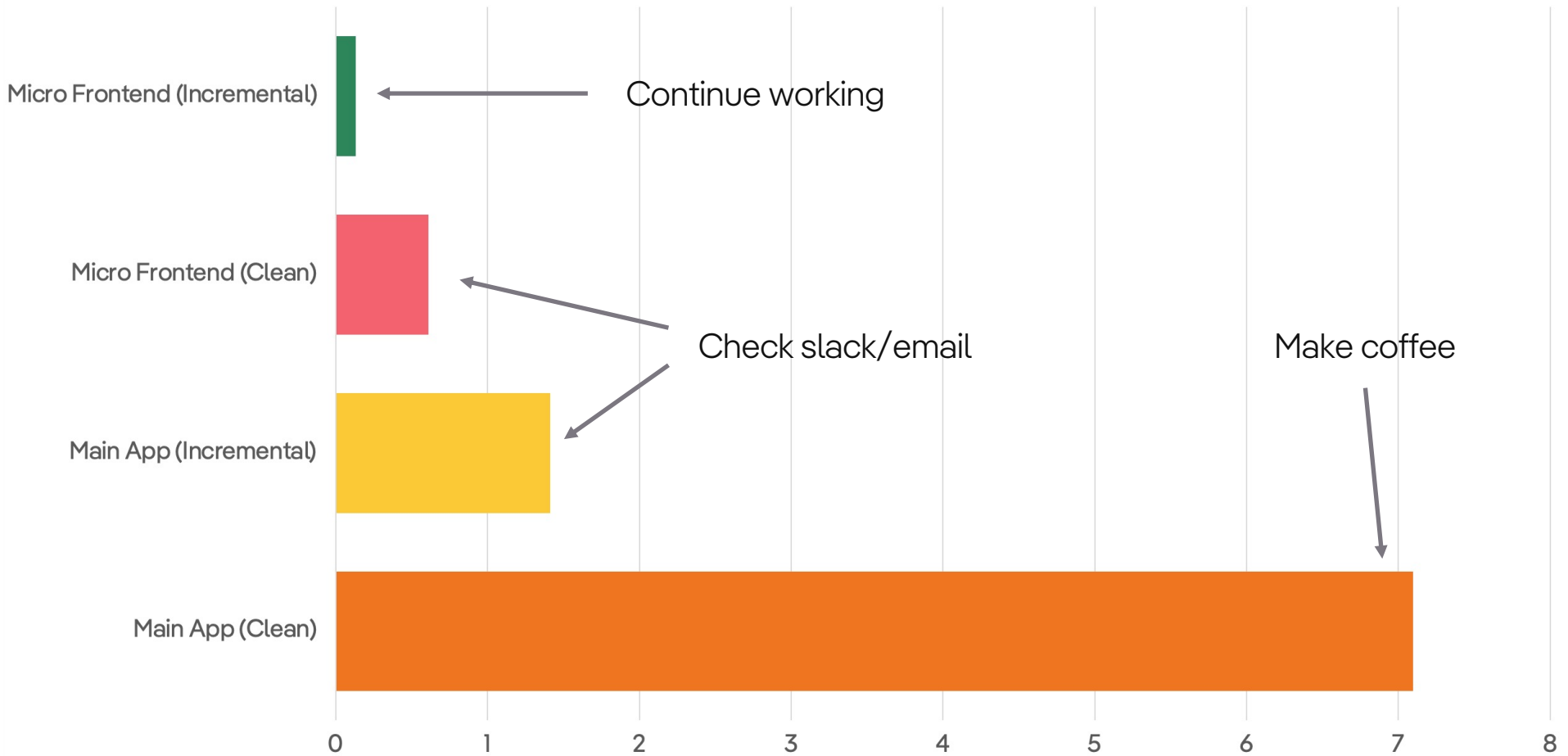
Lines of Code (Monolith)



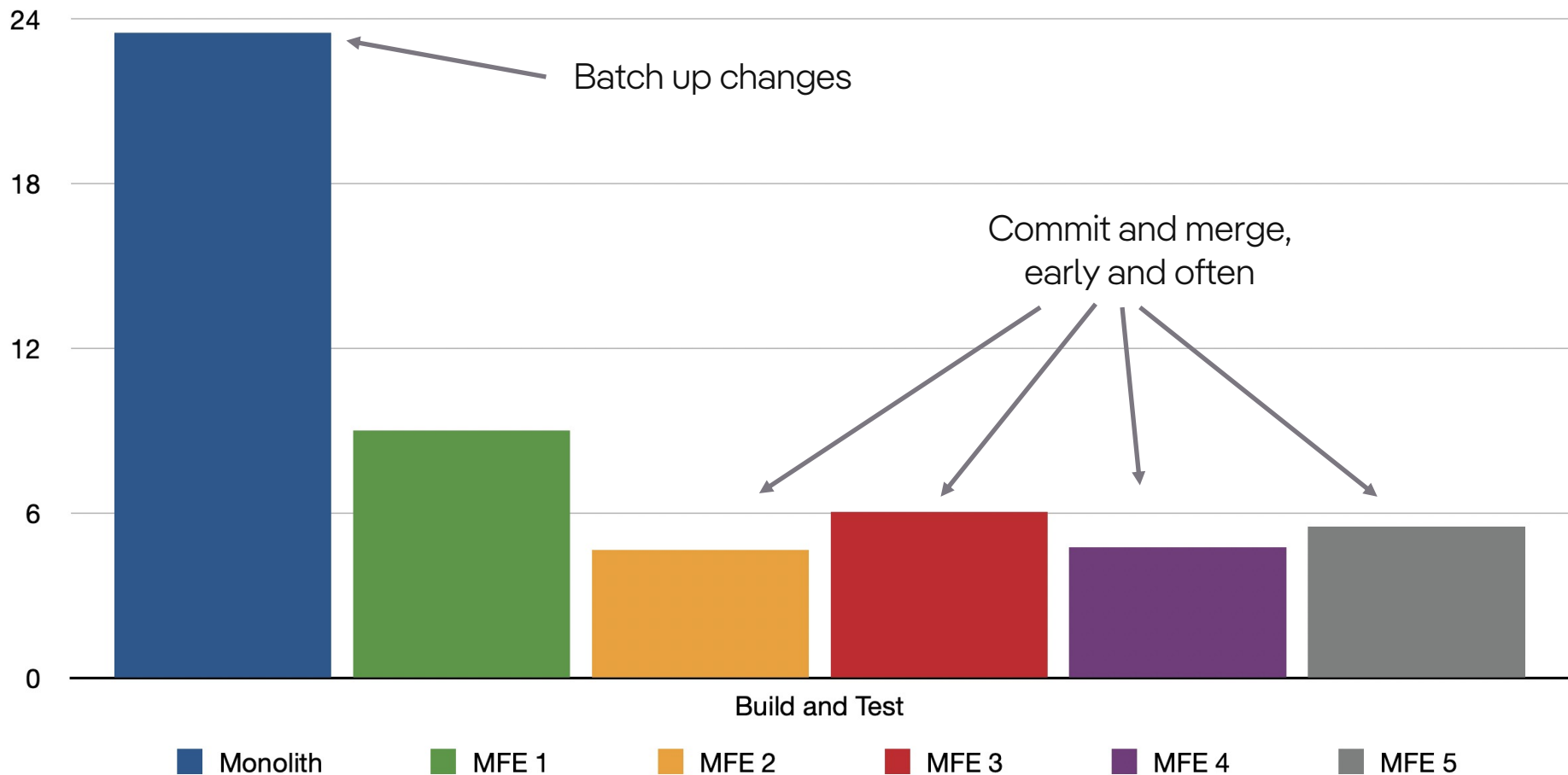
Authors by type of system



Test Suite Duration (minutes)



Total build times in CI for Main App vs Micro Frontends





Scaling journey



Web platform



Native platform



Future direction



Lessons

Where to from here...



Adopt: Continue to adopt and build out our frontend platform.



Extend: Move towards building component-based experiences.



Transform: Research Server Driven UI as a future direction.

Who has similar problems to us?

- single teams
- single backlog

- dozens of teams
- many backlogs

- uber
- facebook

SMALL

US

LARGE

△
no scaling
problems

what does
"good" look like
at this scale?

△
weird and
wonderful
solutions
(not our
problems)

And keep
doing
research...



Scaling journey



Web platform



Native platform



Future direction



Lessons



**Pick when to adjust
your platform strategy.**

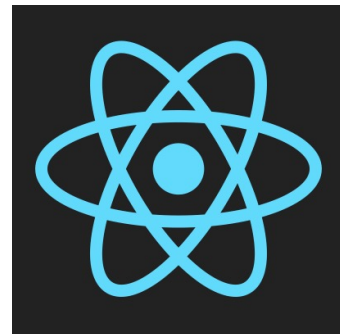
**Treat your platforms
as products.**

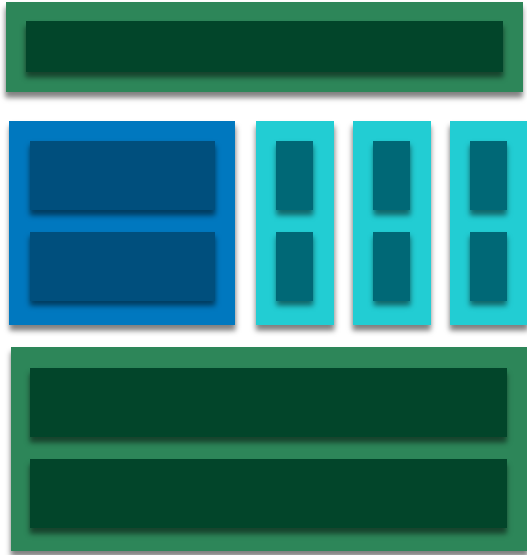




**Start with your
design system.**

**Sensible constraints
accelerate platform
development.**





**Micro frontends are for
organisational scale
and decentralisation.**



Scaling journey



Web platform



Native platform



Future direction



Lessons



How frontend platforms are helping us evolve realestate.com.au



Stewart Gleadow

Architect | realestate.com.au | [@stewgleadow](https://twitter.com/stewgleadow)



REA Group

