

Micro-frontends five years after

@_maxgallo

**In 2019 I was on stage
with Luca Mezzalira to
introduce DAZN
approach to Micro-
frontends**

<https://bit.ly/talk-max-luca>

MICROFRONTENDS MANIFESTO



Independent implementation,
avoiding sharing logic



Modelled around
a Business Domain



Own by a single team



Hi I'm Max



Distinguished Engineer @ DAZN



twitter: @_maxgallo

web: maxgallo.io

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x: @_maxgallo

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Our Journey

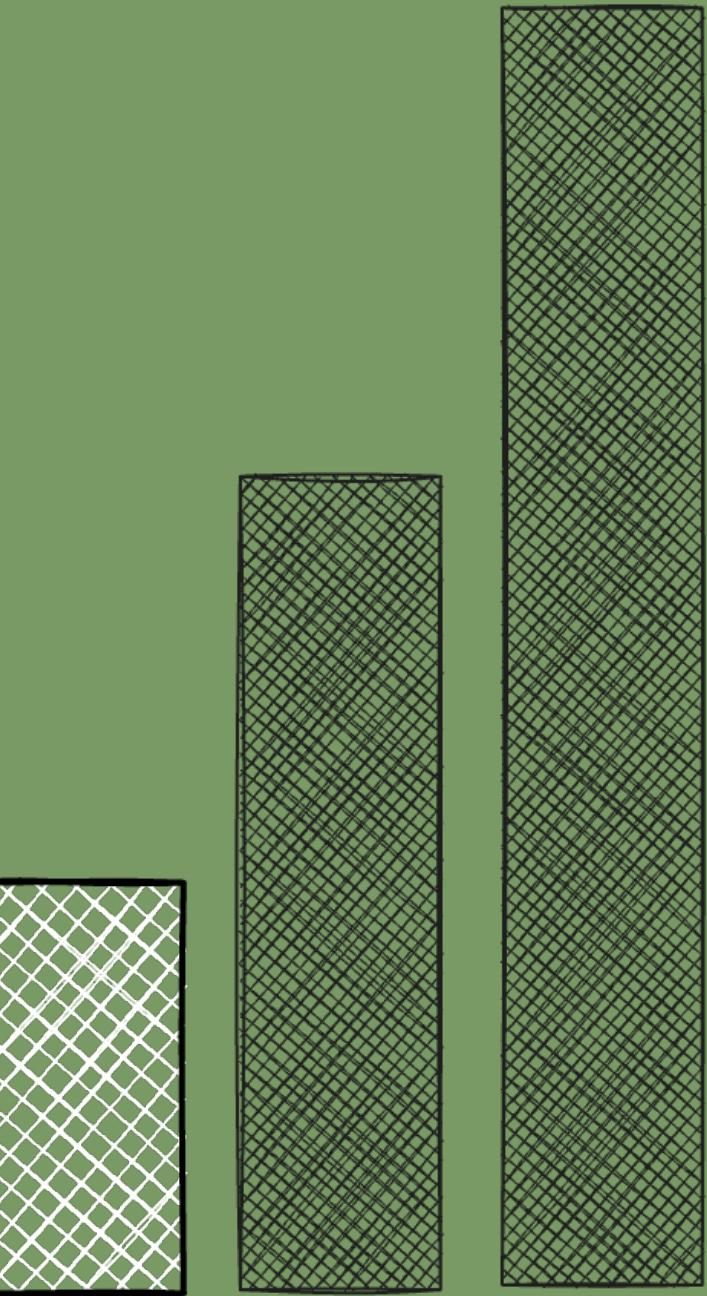
 **Once Upon a Time**

 **Adapting to Change**

 **Sharing Ideas & Sharing Code**

Once Upon a Time

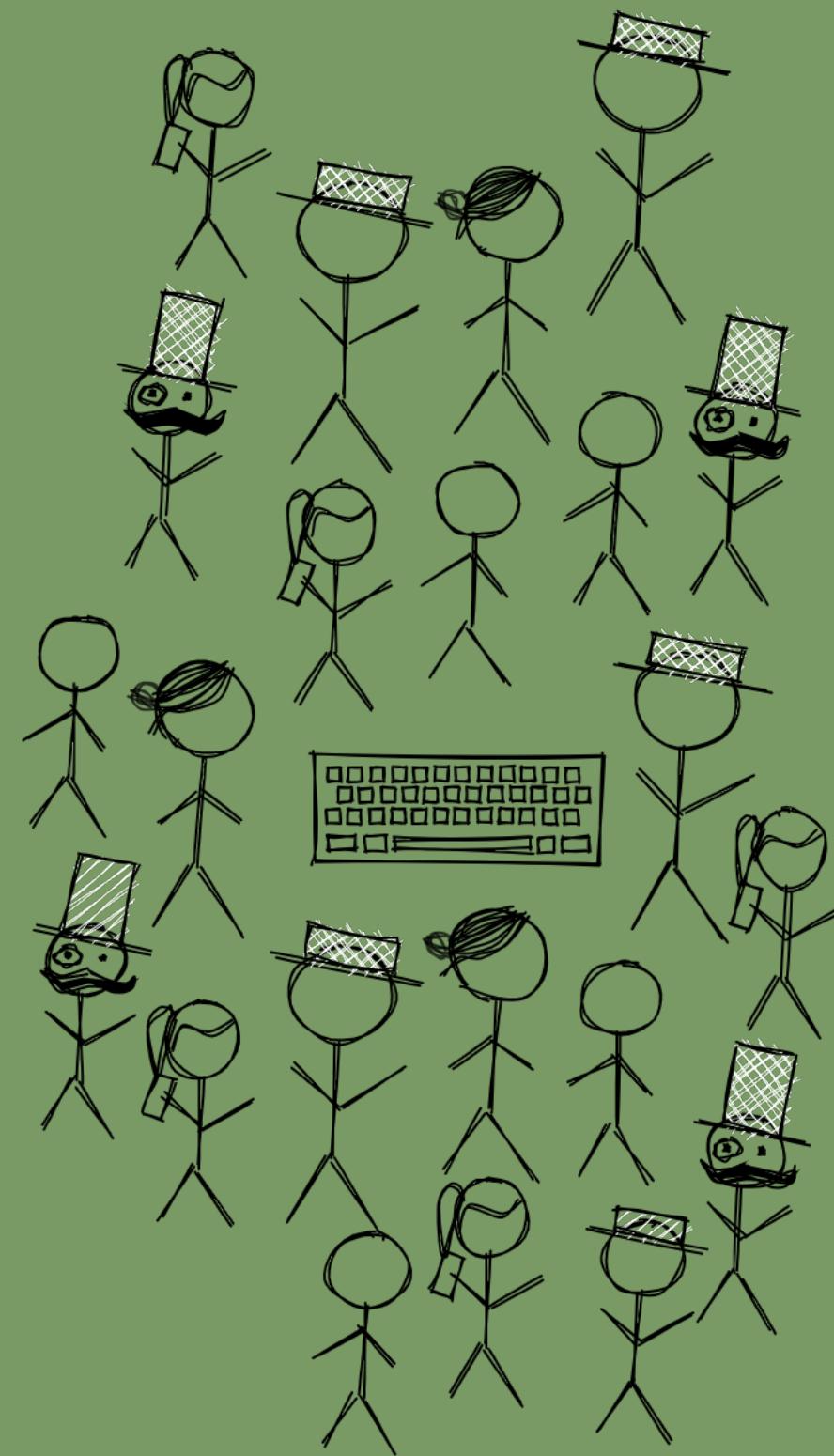
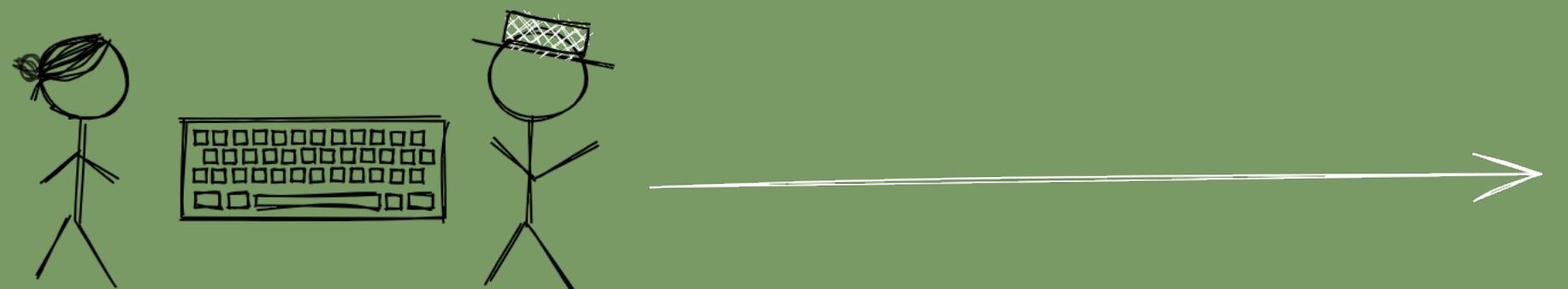
Part 1 of 3



**Once Upon a Time, there
was a Live Sport
Streaming Company
called DAZN**



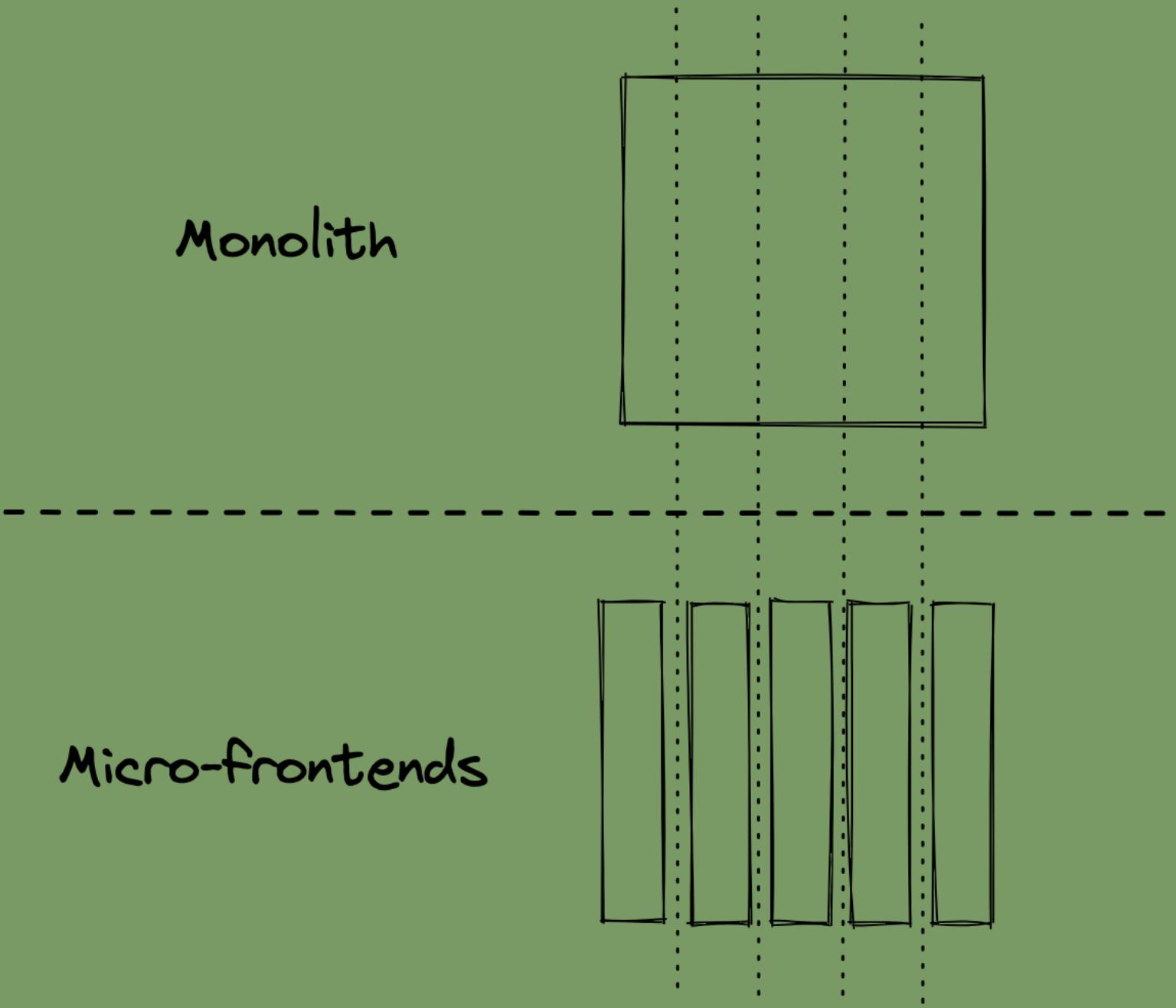
DAZN Engineering department was growing exponentially



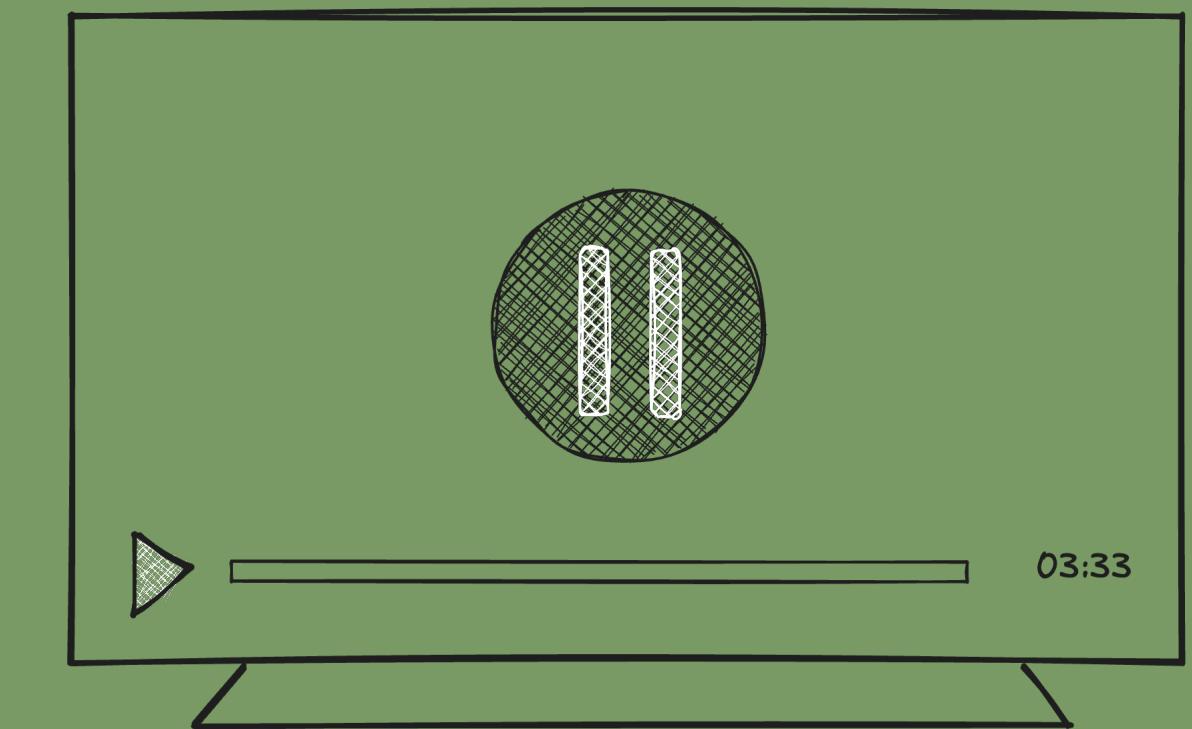
To sustain our teams
growth plans so we
introduced Micro-
frontends

Monolith

Micro-frontends



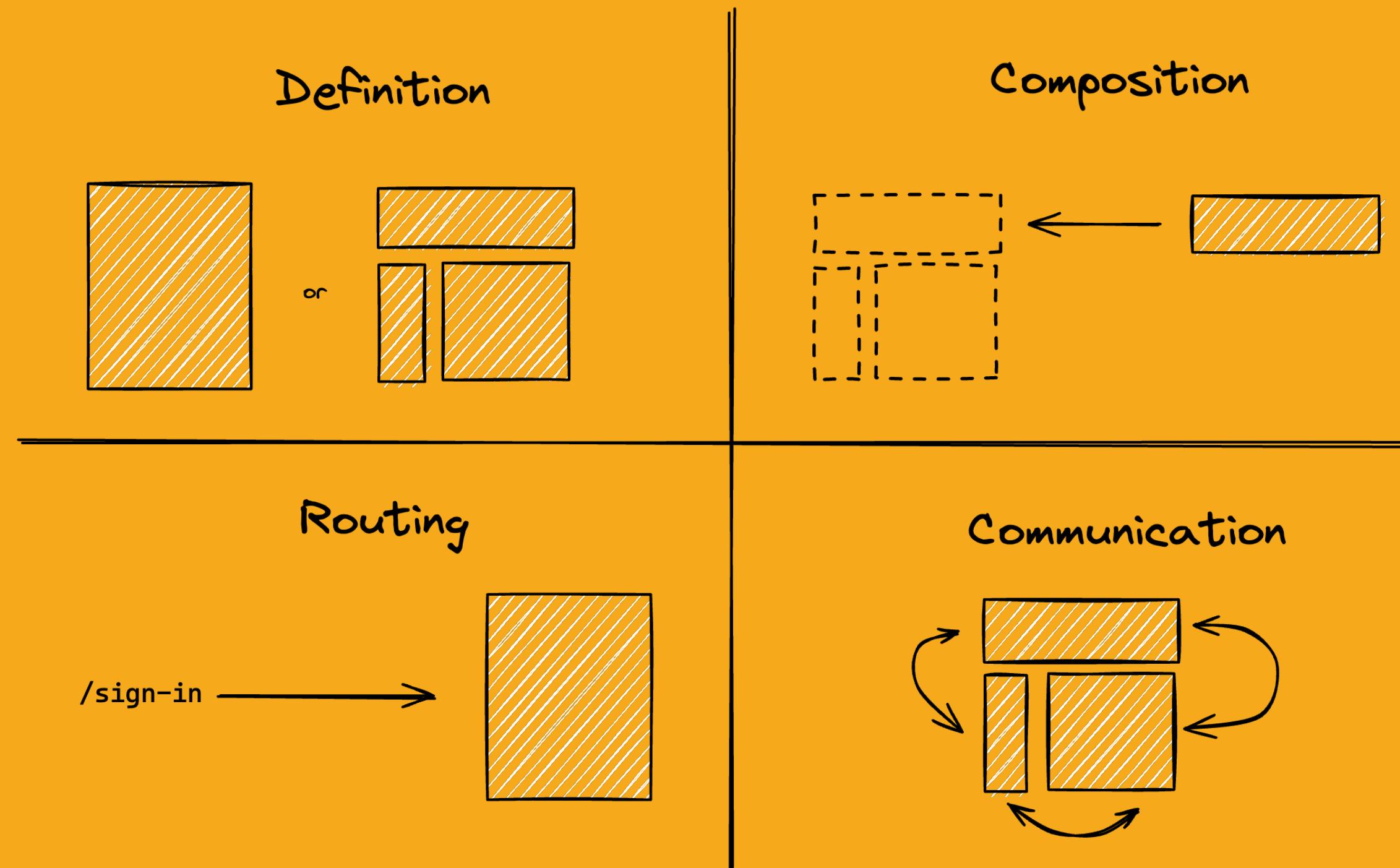
PAUSE



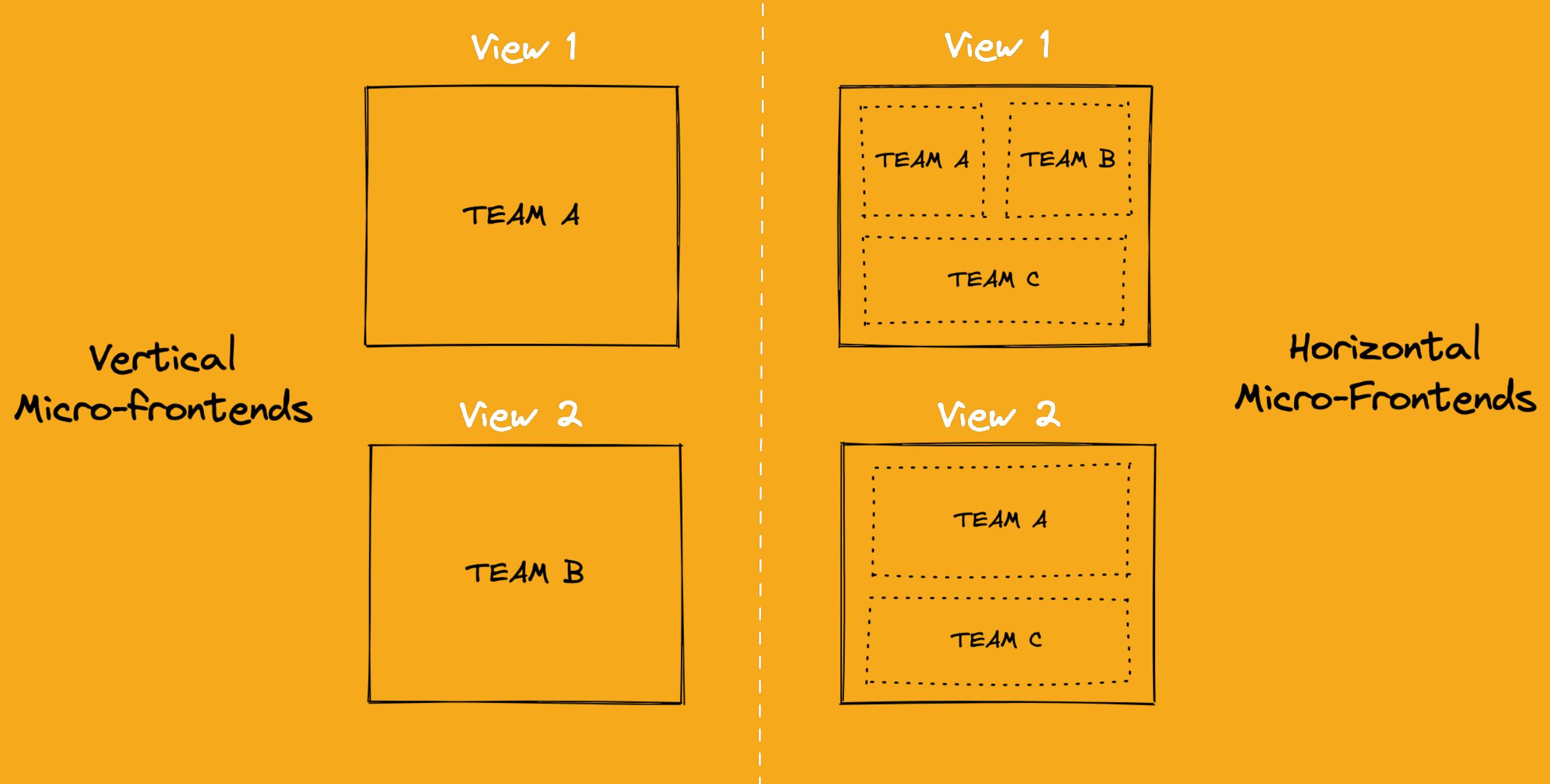
03:33

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Micro-Frontends Decision Framework



Decision Framework Definition



Decision Framework Definition

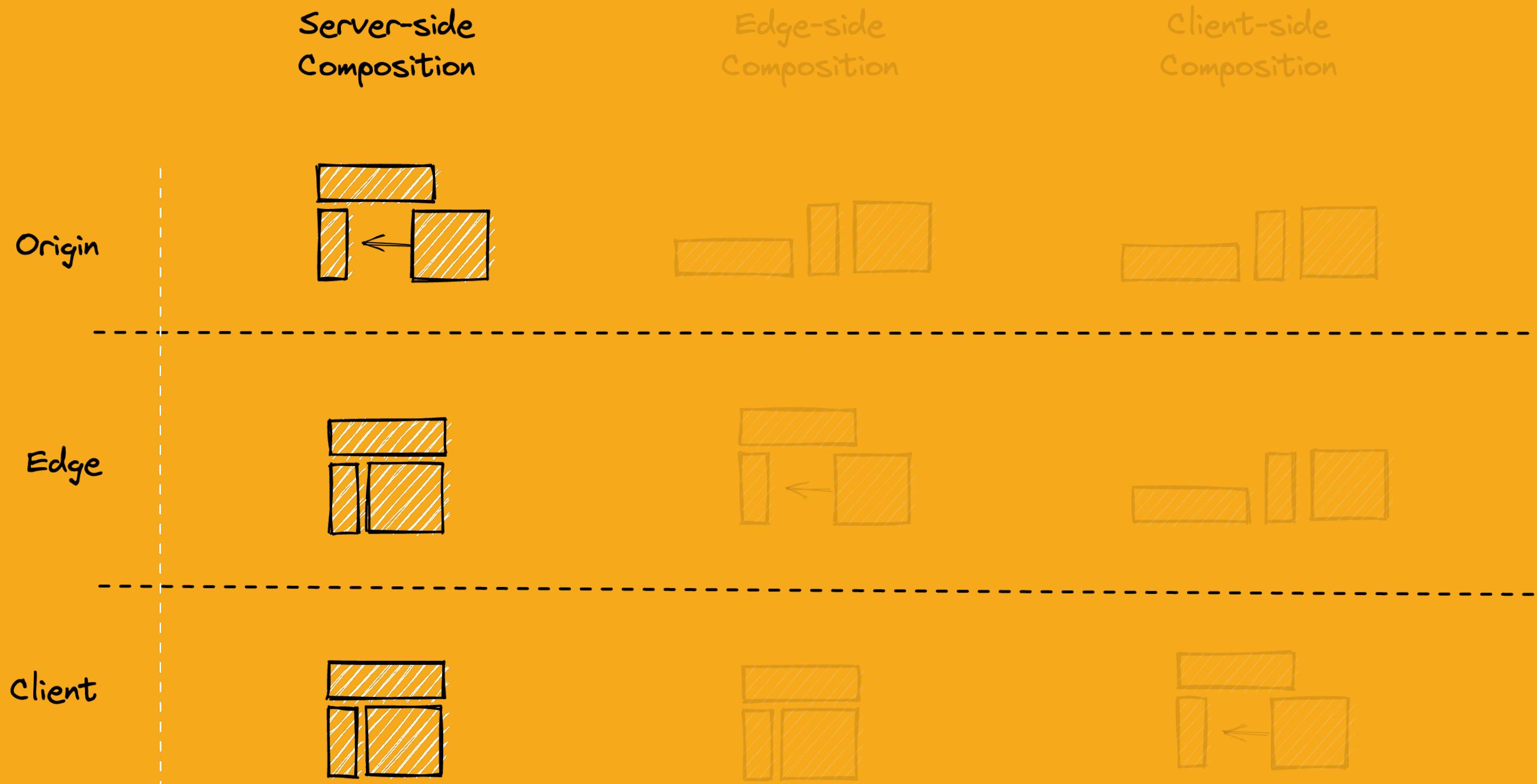
Vertical

- 👉 Ownership & Freedom End to End
- 👉 Easier to Support

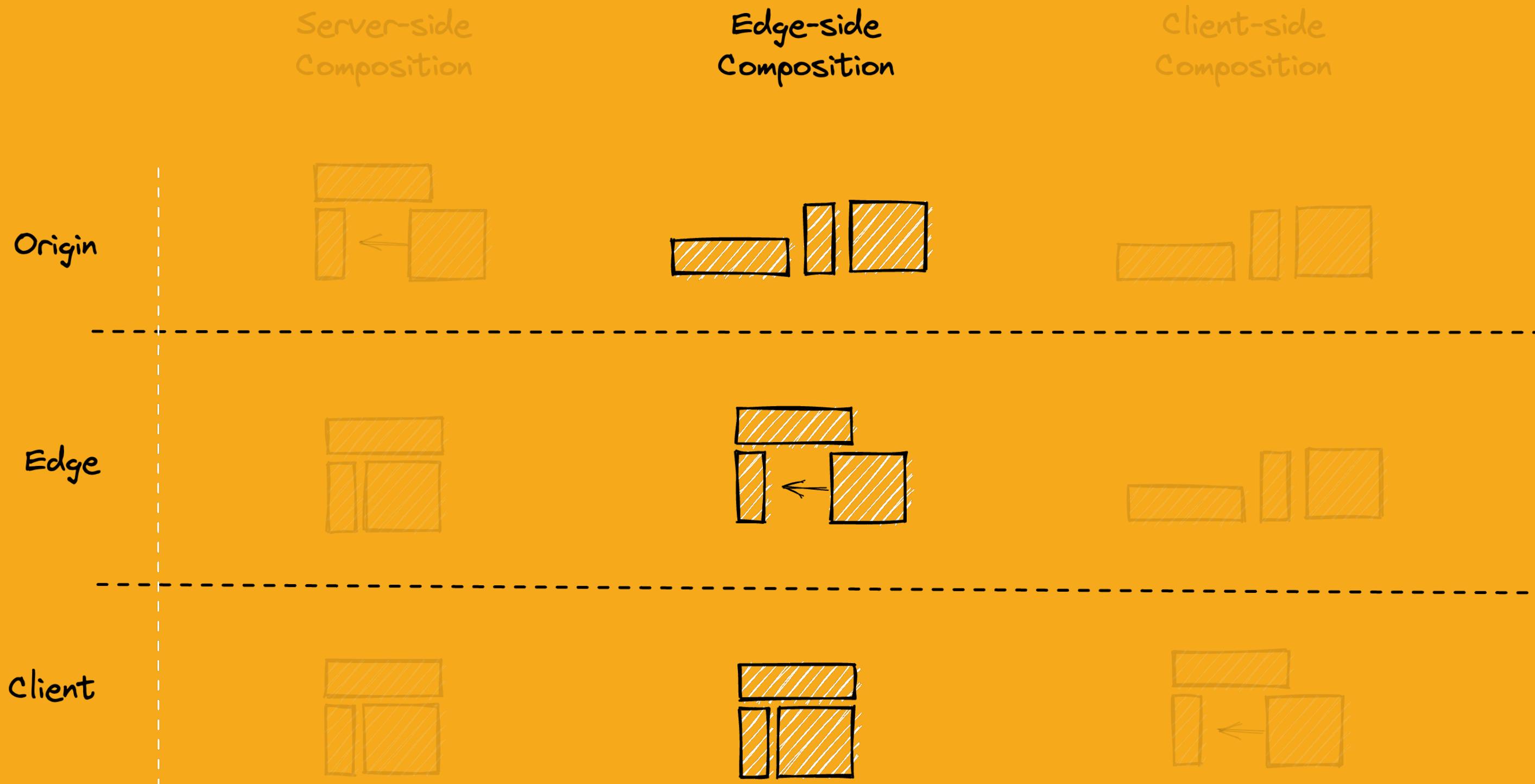
Horizontal

- 👉 Release part of a view
- 👉 Favor Reusability
- 👉 Harder to orchestrate

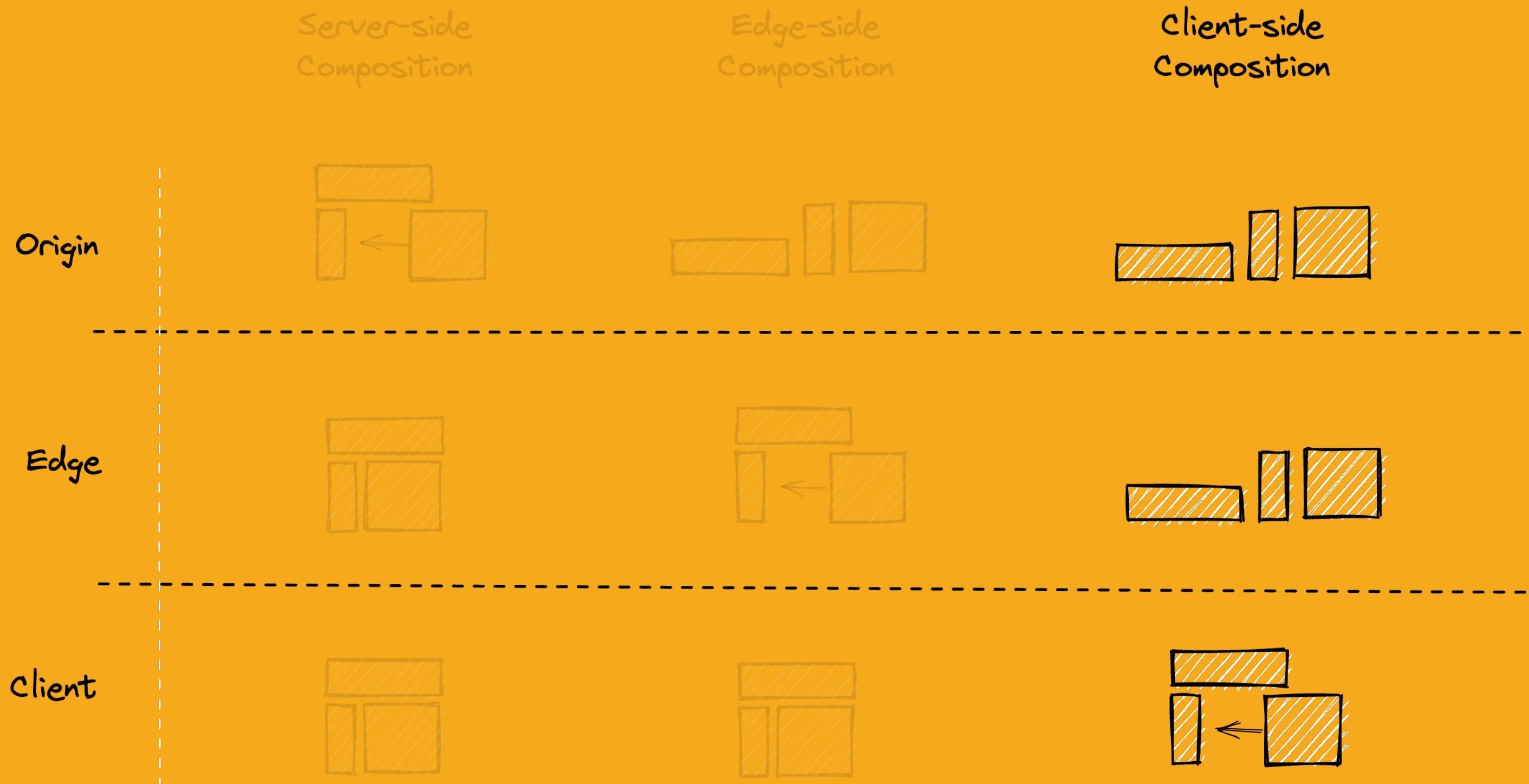
Decision Framework Composition



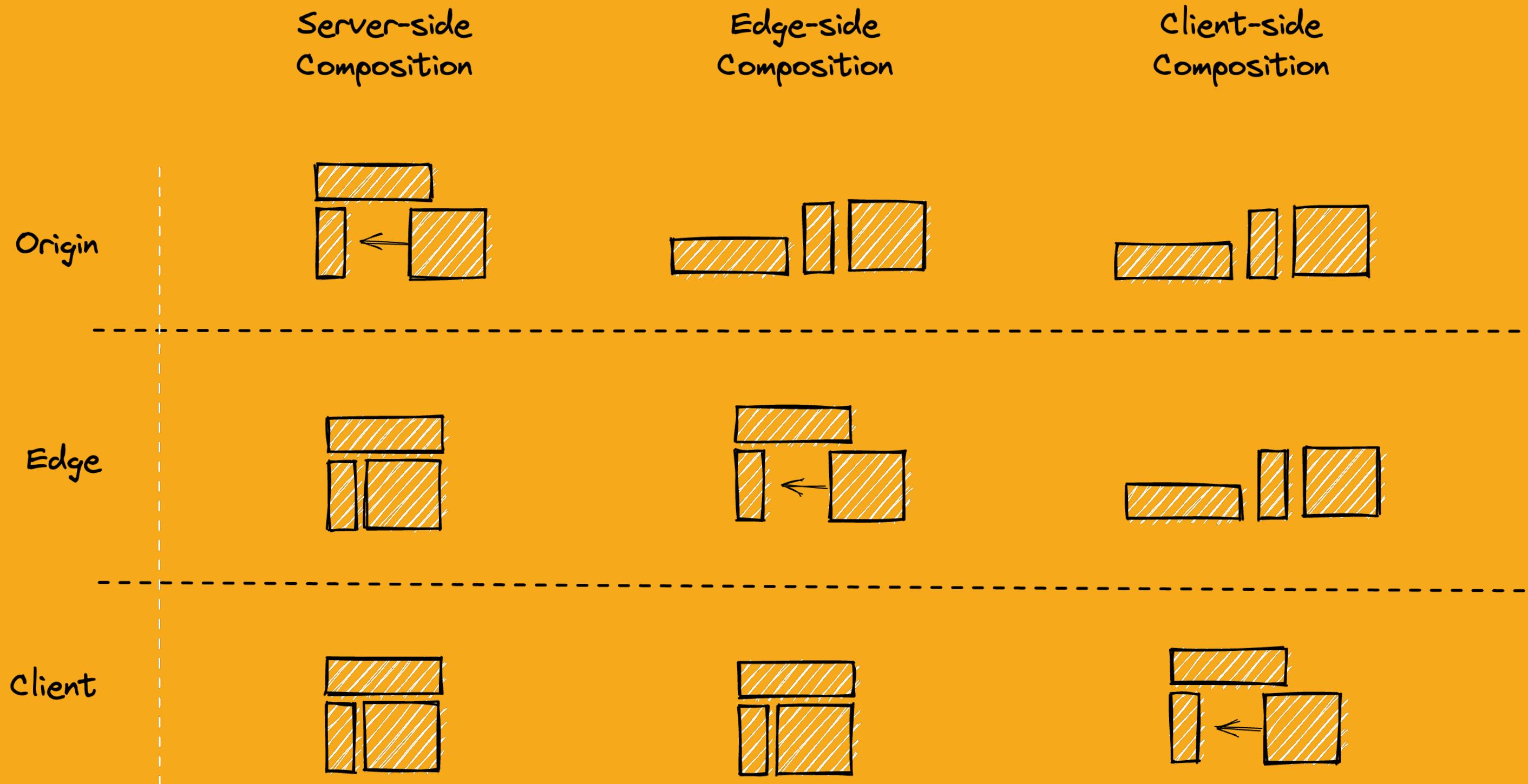
Decision Framework Composition



Decision Framework Composition



Decision Framework Composition



Decision Framework Routing



👉 Both Horiz & Vert

Decision Framework Routing

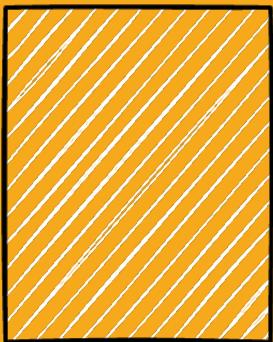
Origin/Server

👉 Both Horiz & Vert

Edge

👉 Not common

👉 Idea: canary releases &
AB testing



/sign-in →

Decision Framework Routing



Origin/Server

👉 Both Horiz & Vert

Edge

- 👉 Not common
- 👉 Idea: canary releases & AB testing

Client

- 👉 Always download app-shell first
- 👉 (Vertical) Routing Prefix ownership

Decision Framework Communication

Vertical

👉 Browser storage

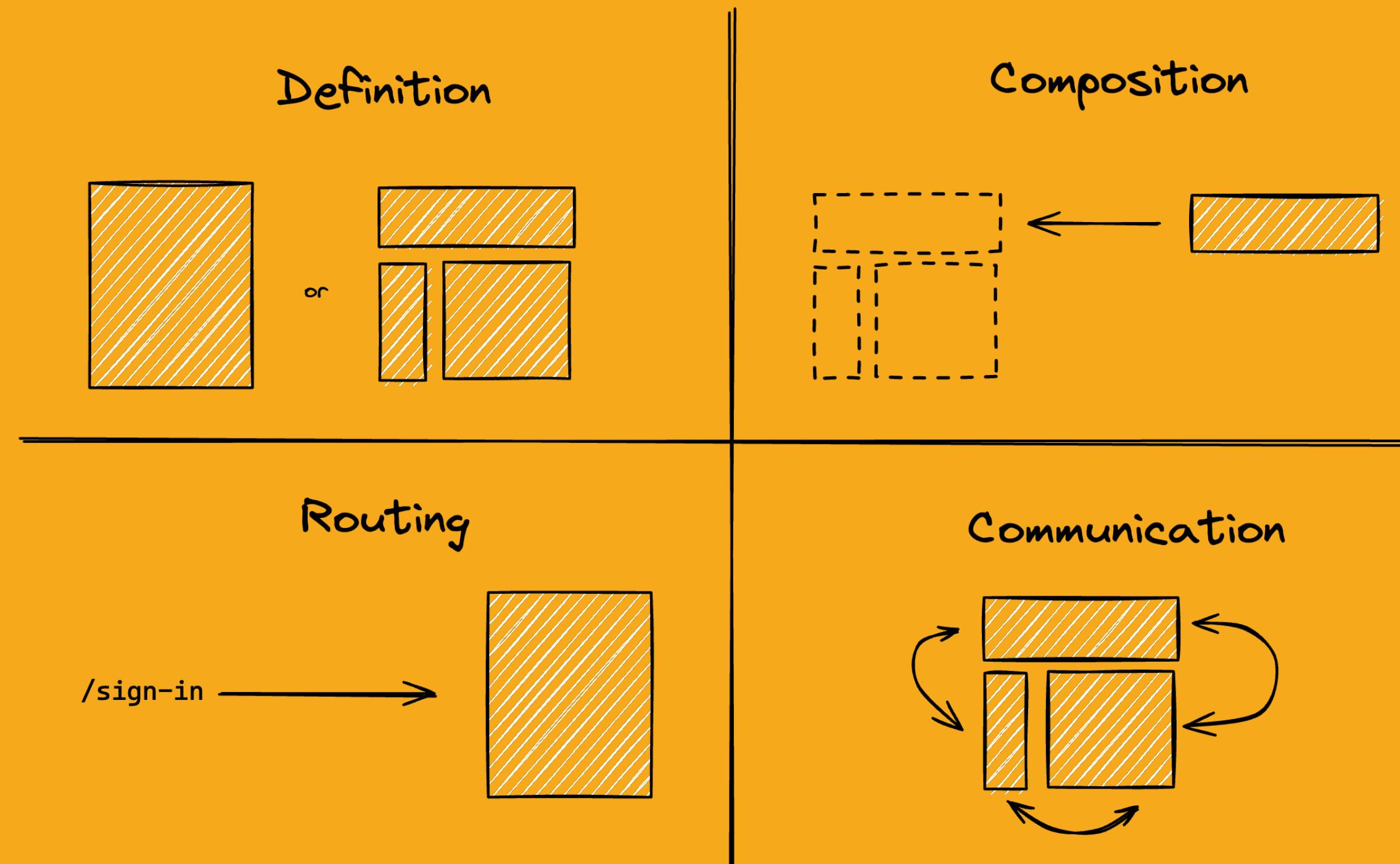
👉 Url params

Horizontal

👉 Event Bus (very popular)

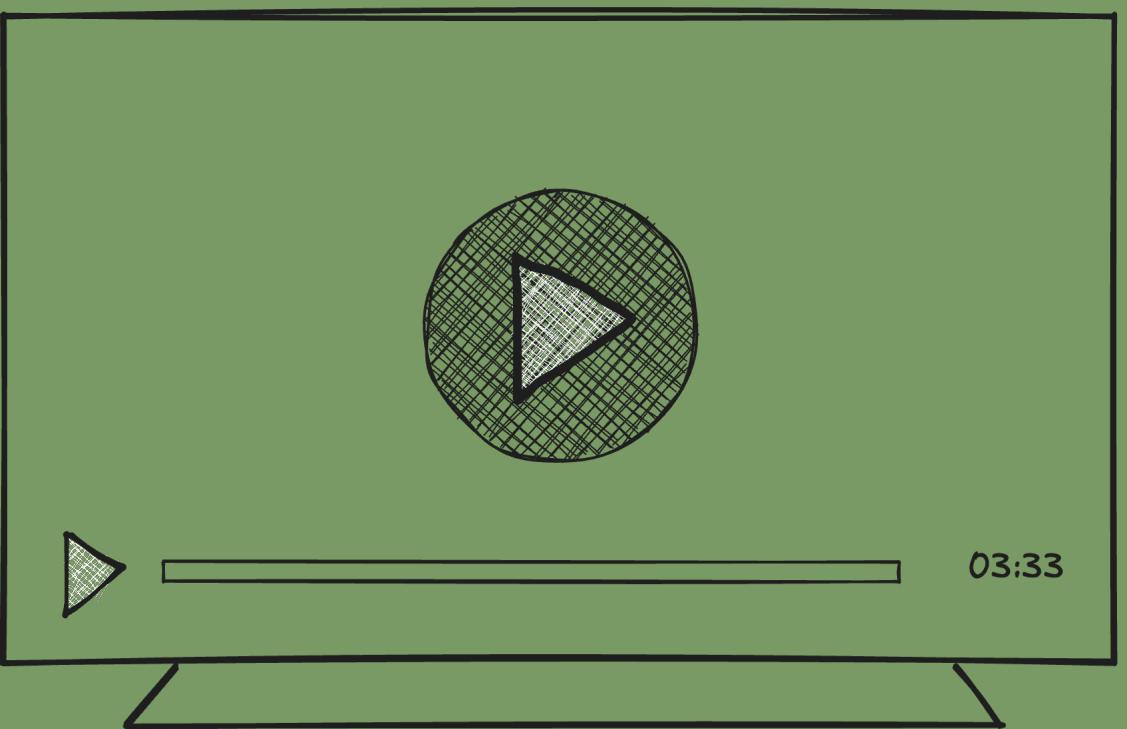
👉 Host config (eg. React Props)

Micro-Frontends Decision Framework

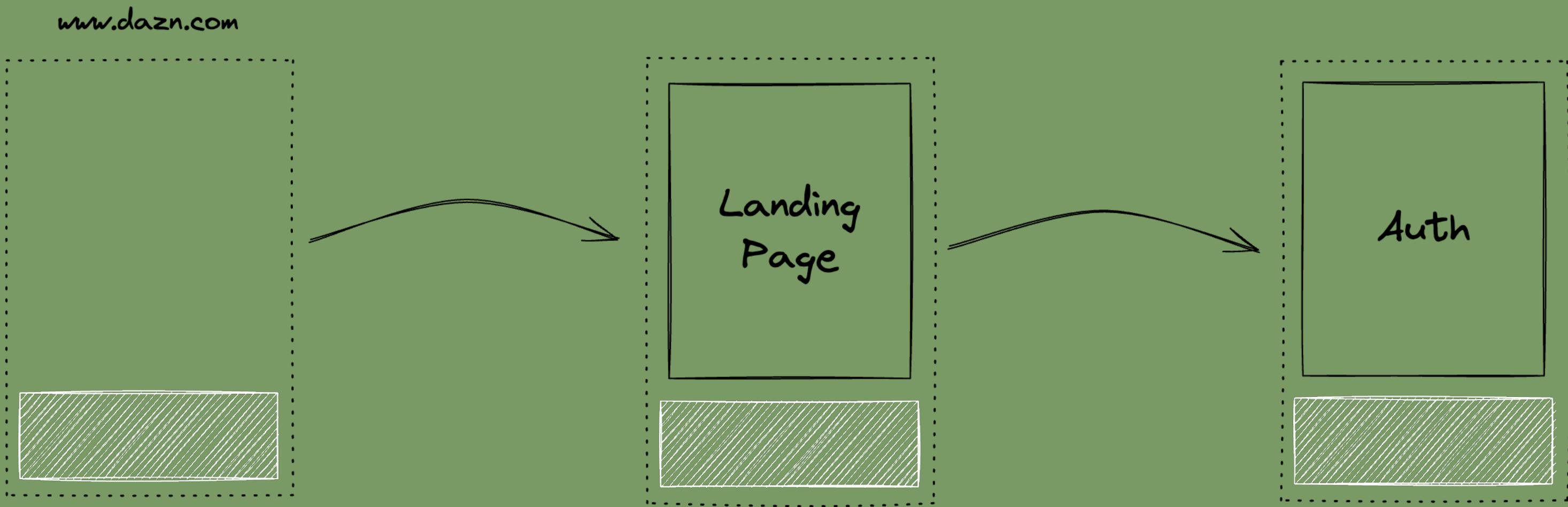


PLAY

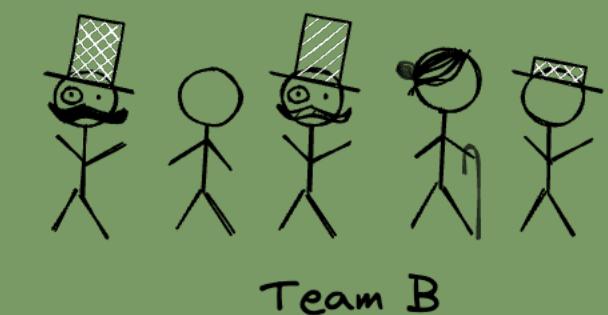
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DAZN Composition & Routing



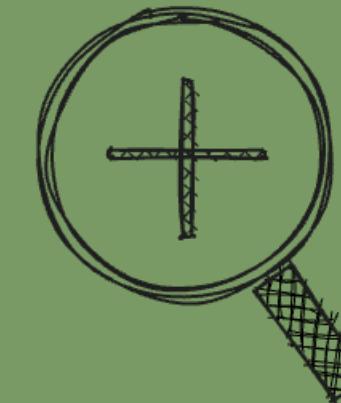
Client-side
Orchestrator
always in page



DAZN Orchestrator

www.dazn.com

Landing
Page

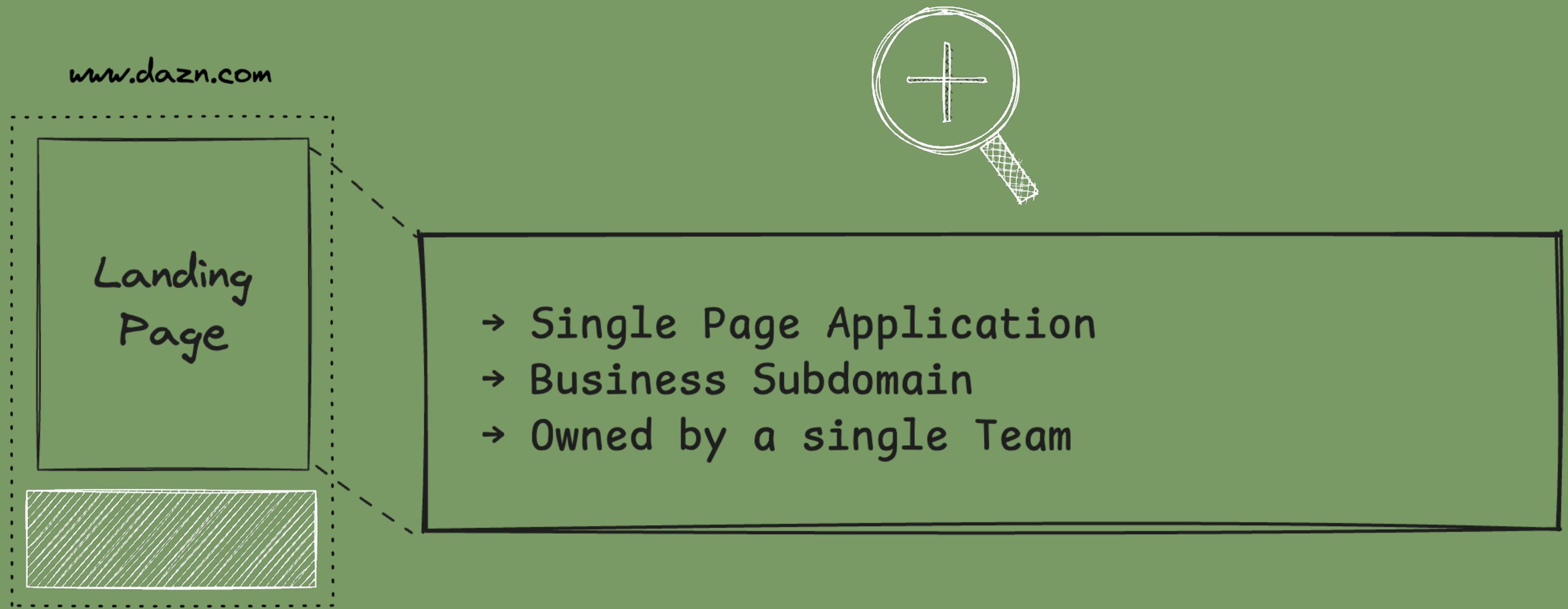


```
const verticalMfe = await fetch('./landingpage/index.html')

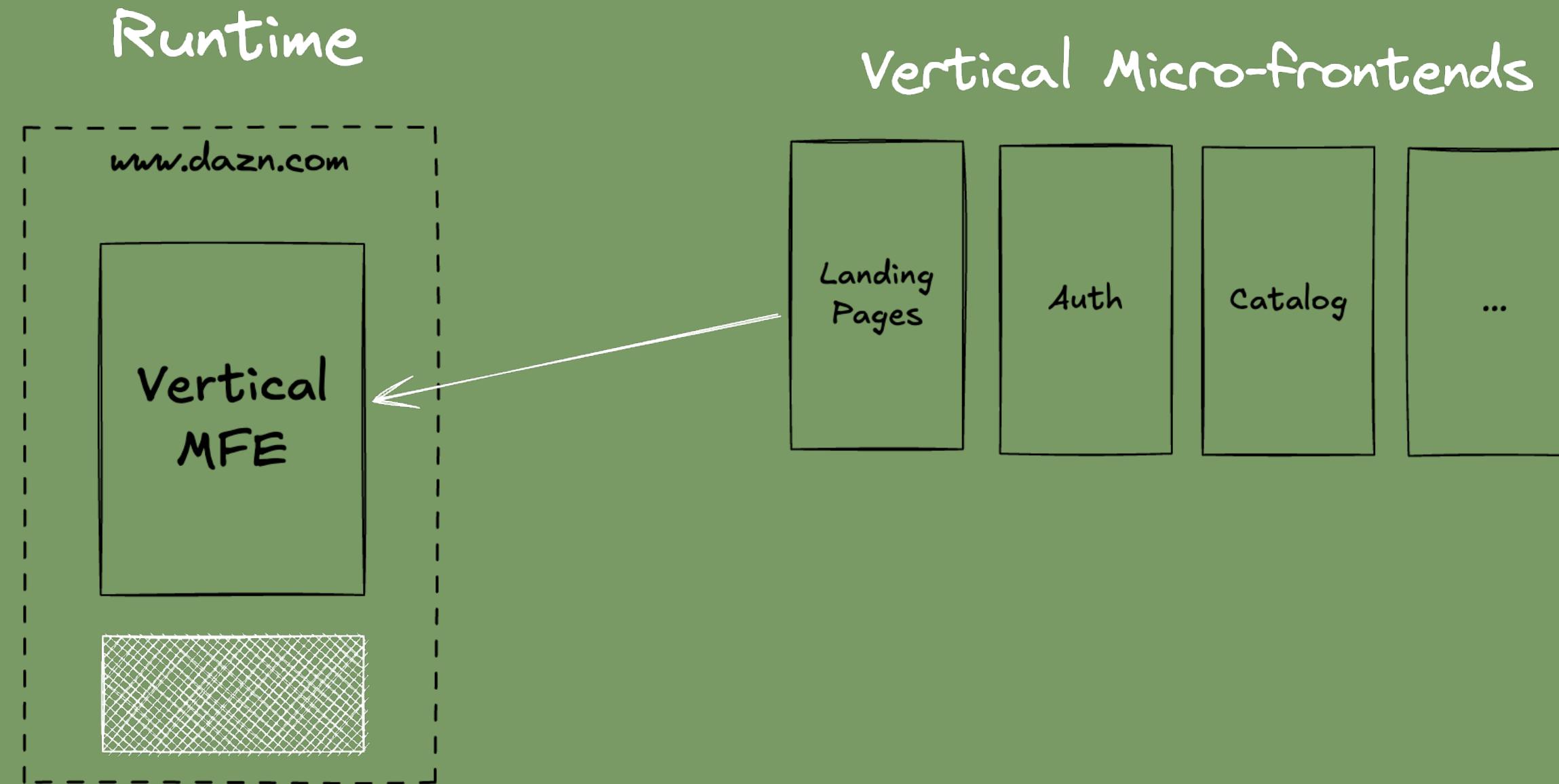
const elements = verticalMfe.querySelectorAll('body>*')

elements.forEach(mount(document.body, window.document));
```

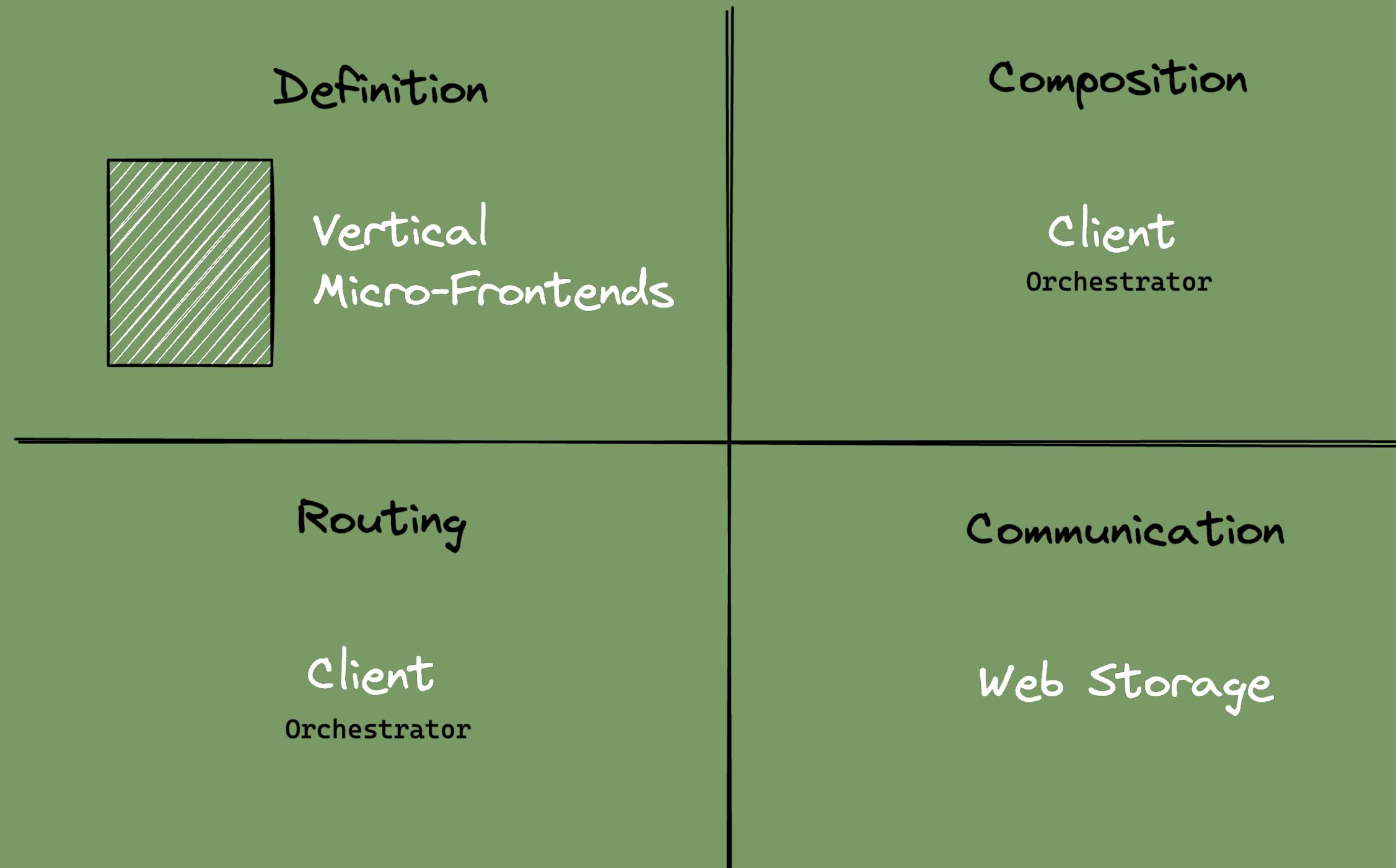
DAZN Vertical Micro-Frontend



DAZN 2019 Frontend Architecture

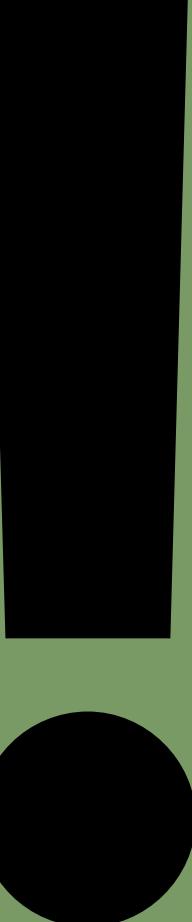


DAZN 2019 Decision Framework



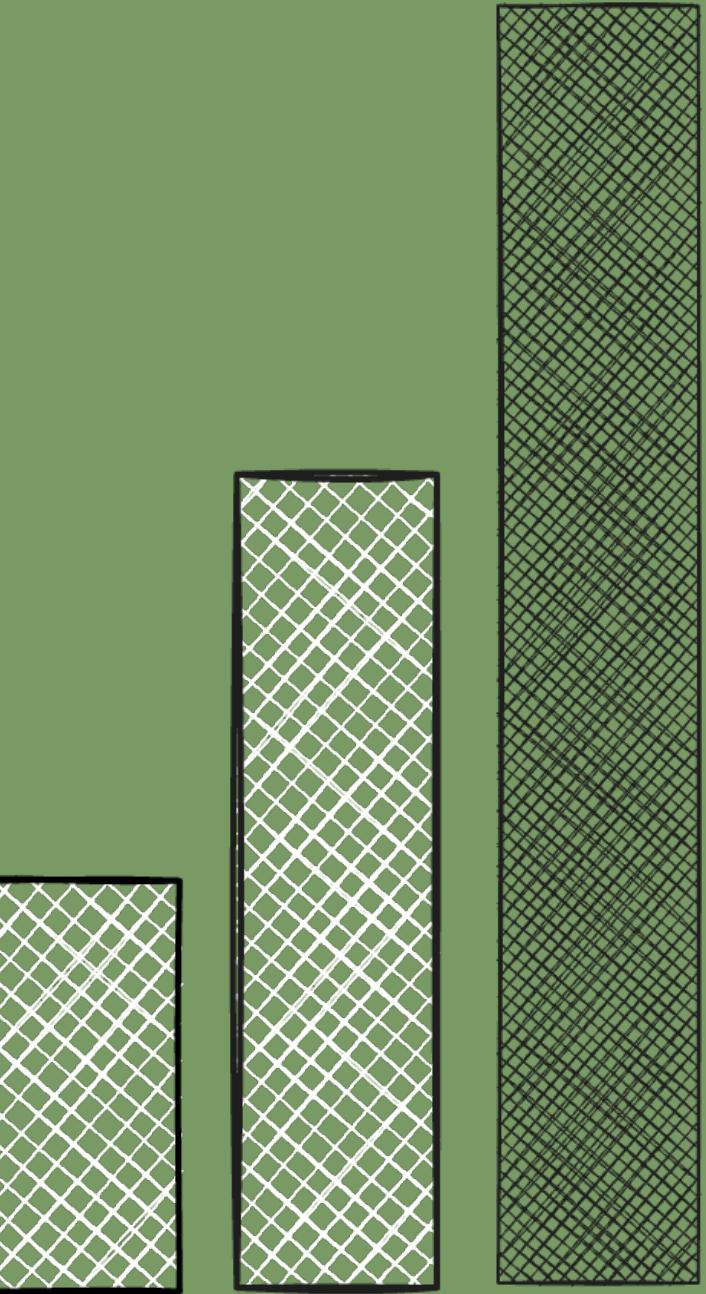
...and they lived happily ever after

...and they lived happily ever after

No more! 

Adapting to Change

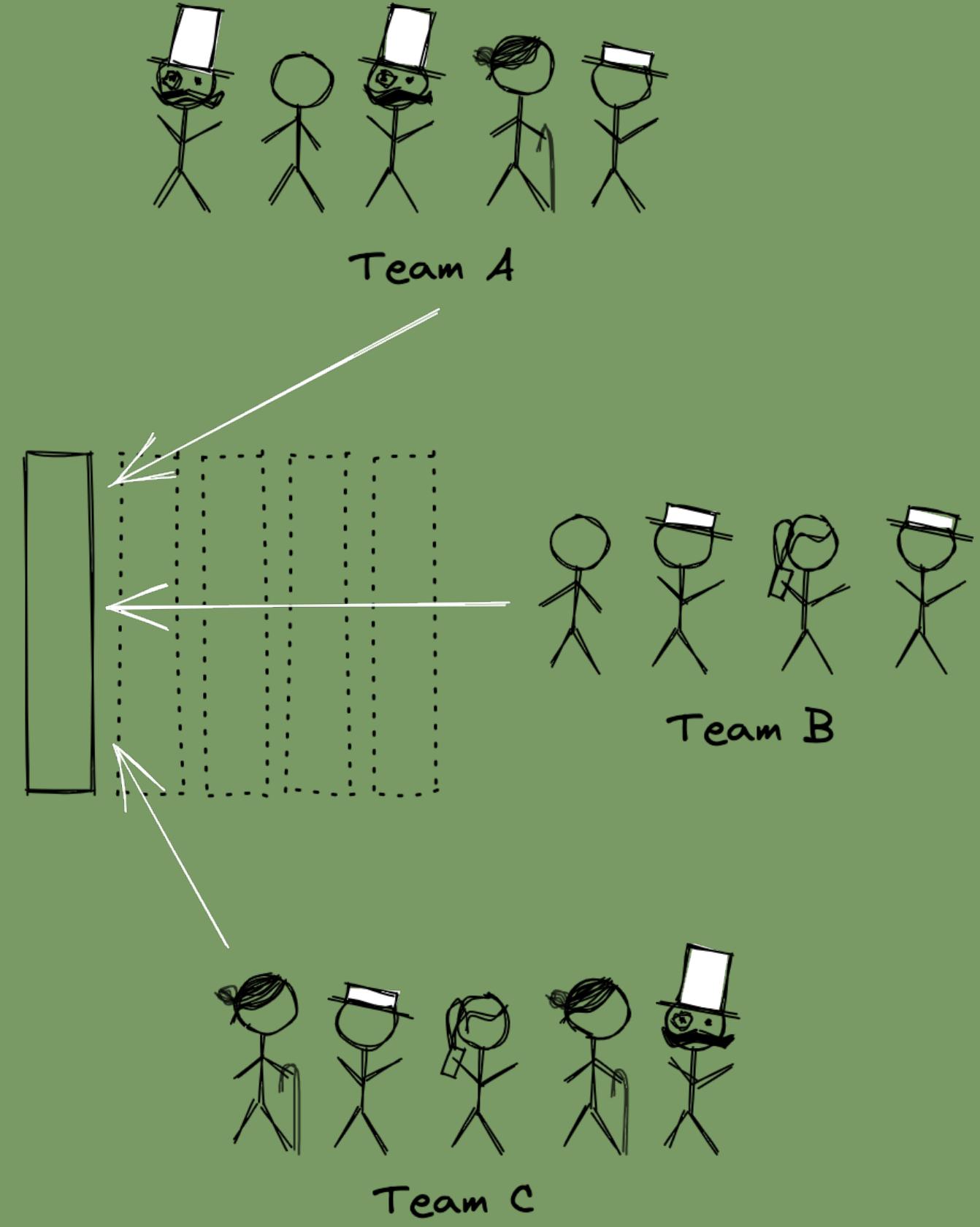
Part 2 of 3



It's not easy to define Domain Boundaries

Some vertical Micro-frontends were too big for a single team

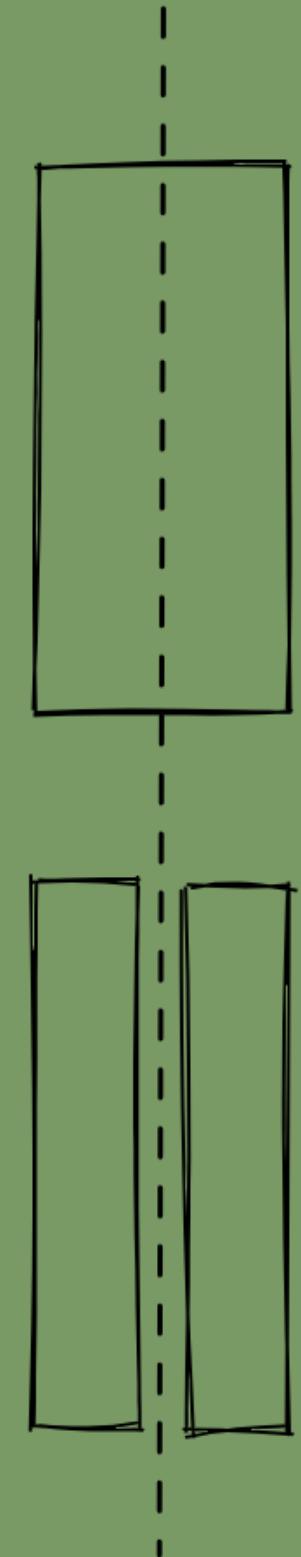
Micro-frontends



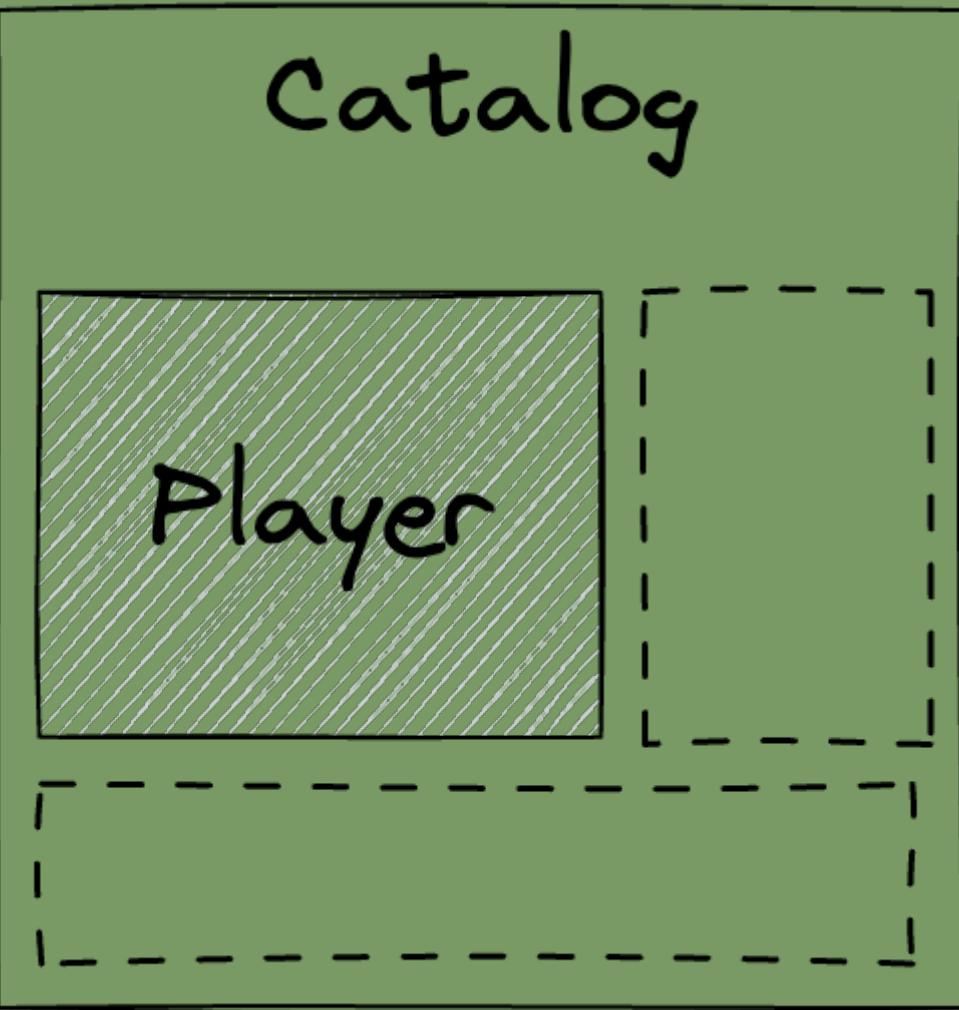
**Our business
subdomains are not
immutable so we re-
defined their boundaries**

Micro-frontend

Two
Micro-frontends

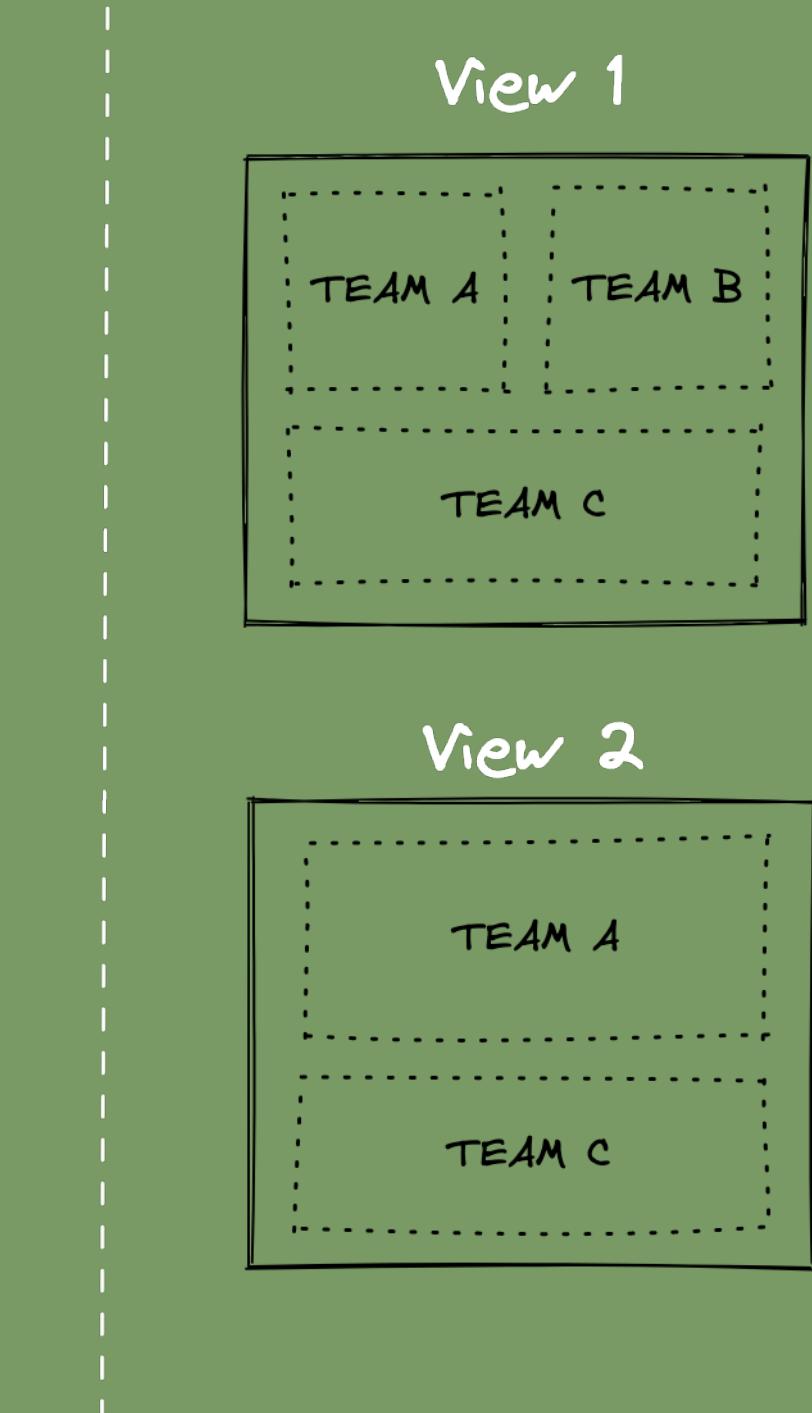
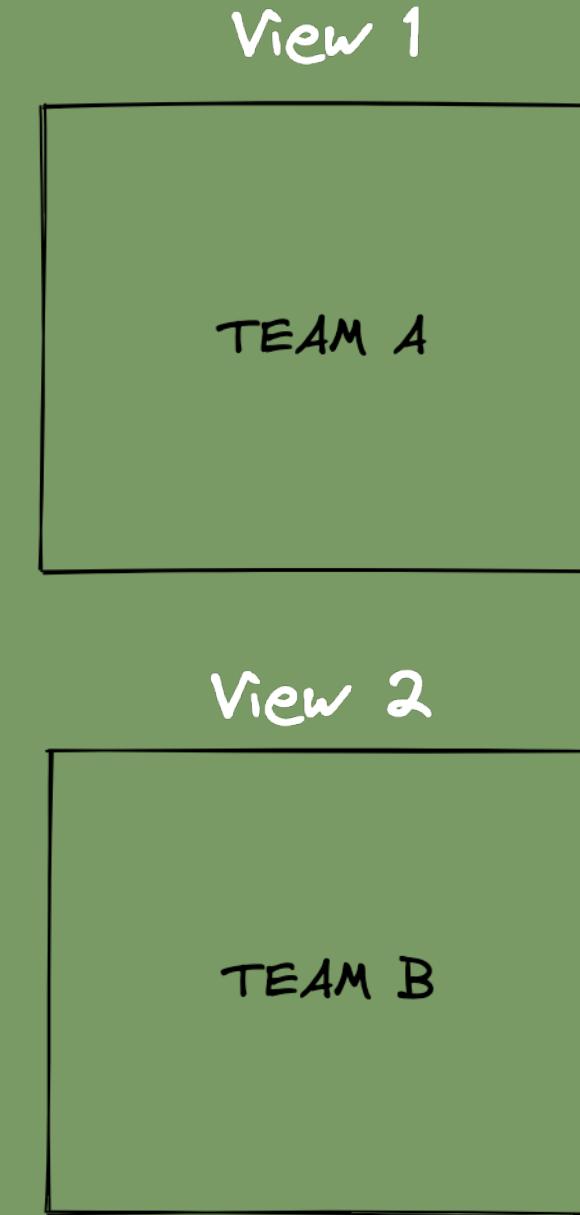
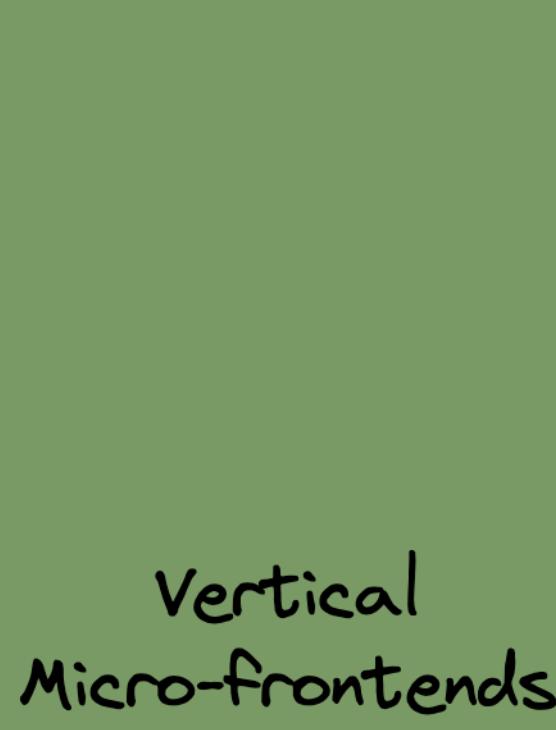


**A Subdomain did contain
a complex subsystem¹
that was not considered
a Micro-frontend**



¹From "Team Topologies"

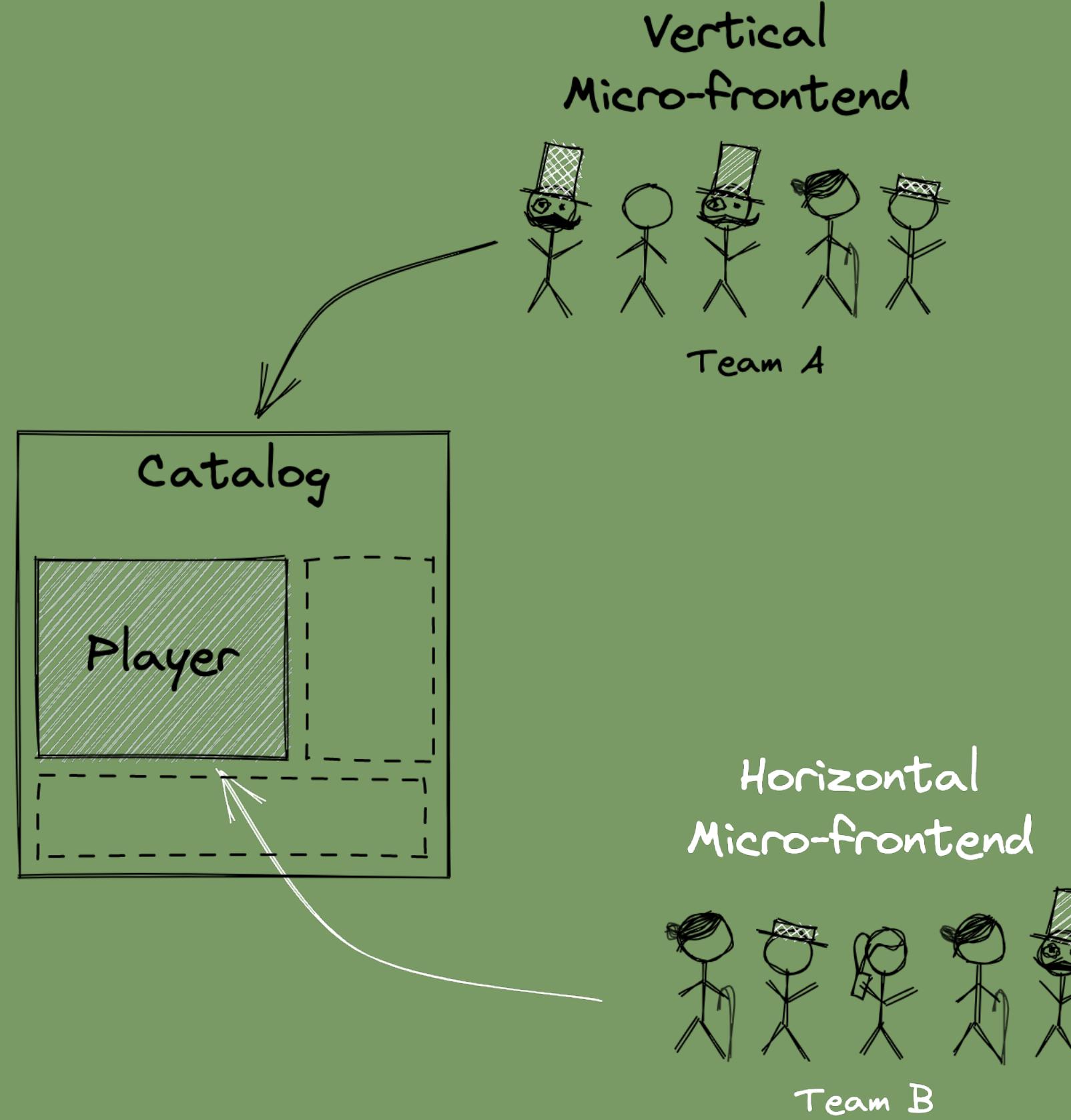
Micro-frontends Vertical & Horizontal² split



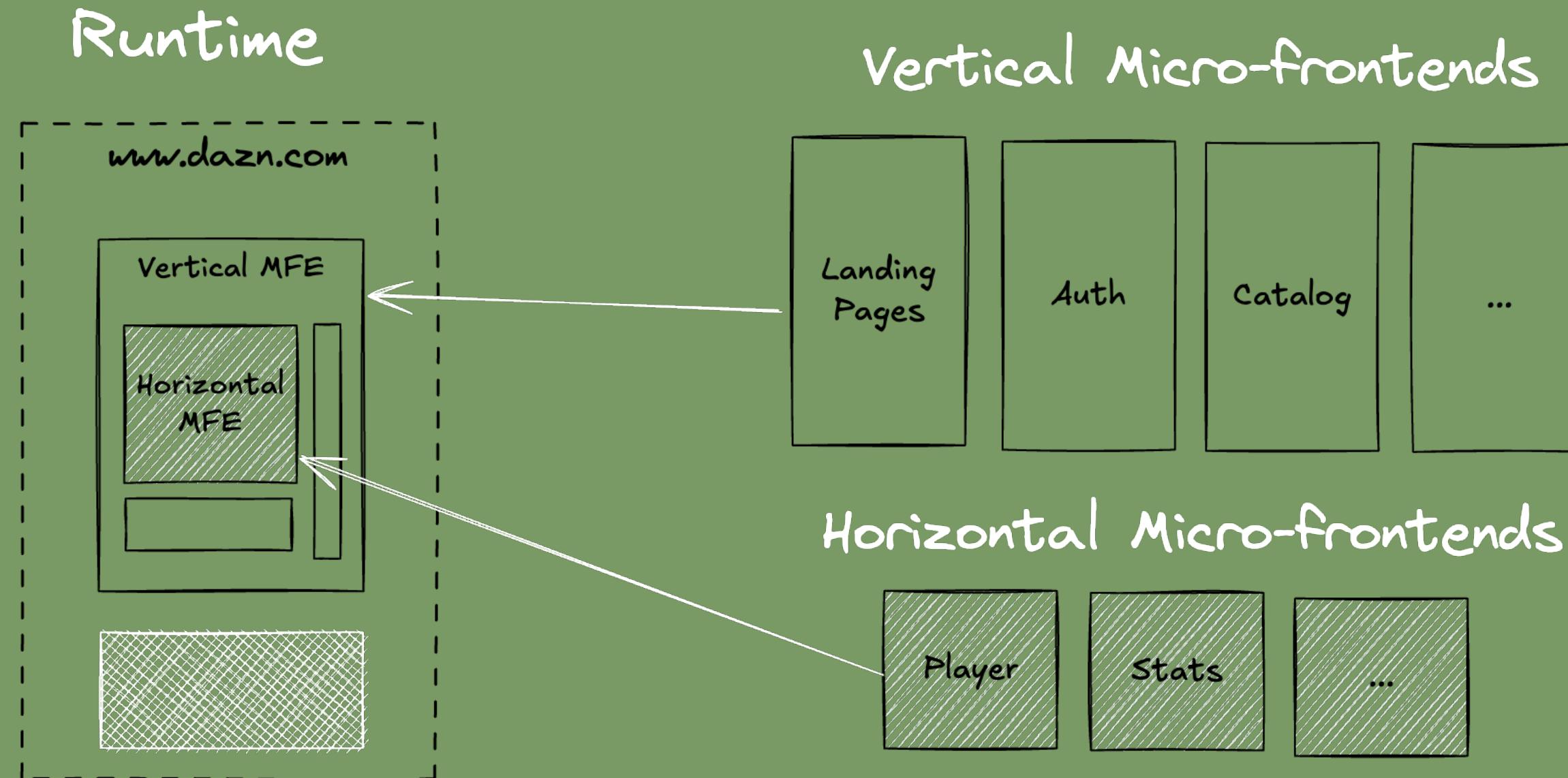
Horizontal
Micro-Frontends

Deep Dive into Horizontal Micro-frontends in DAZN

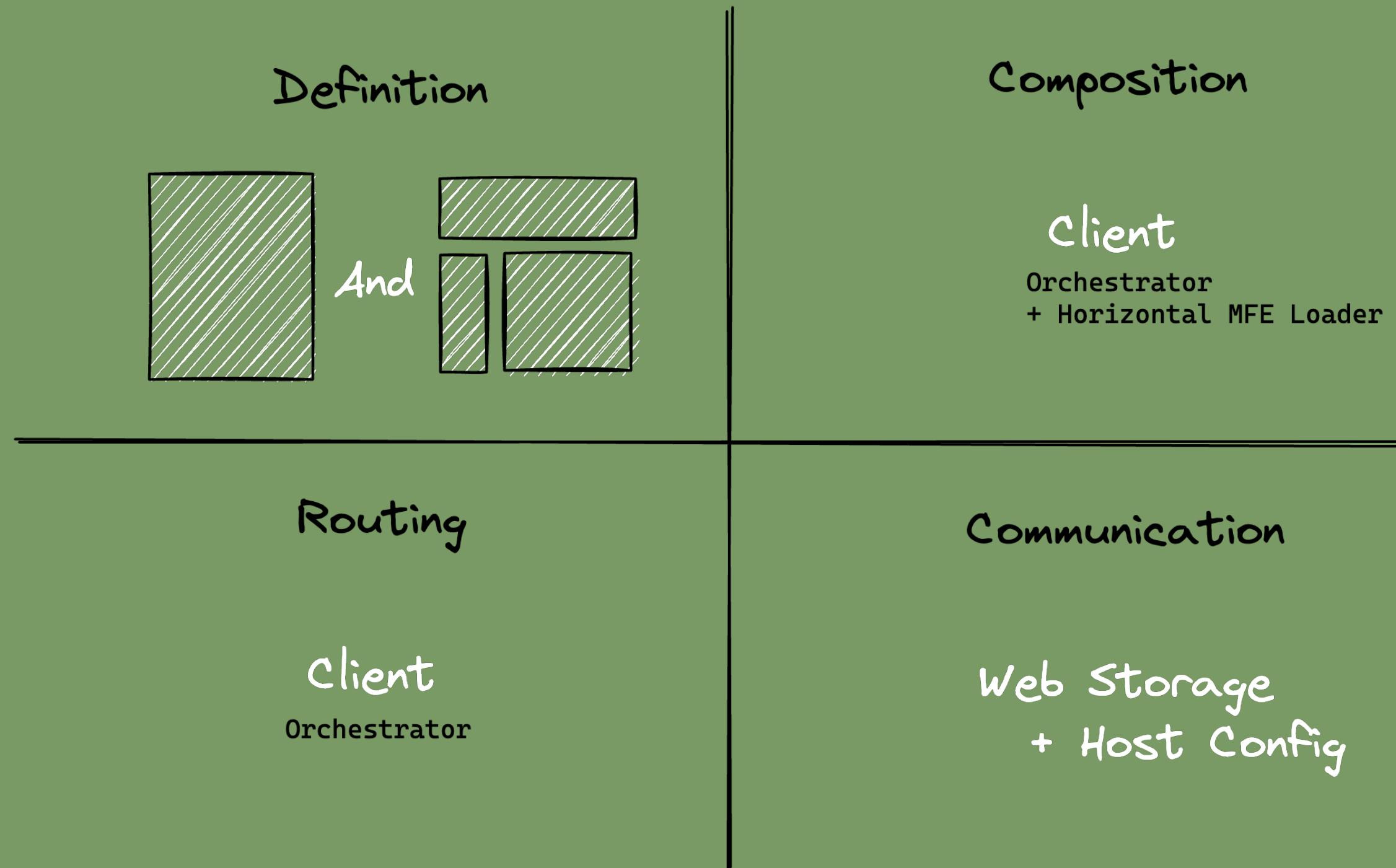
- 👉 SystemJS
- 👉 Relationship with host
- 👉 Autonomy in non-breaking changes



DAZN 2024 Frontend Architecture

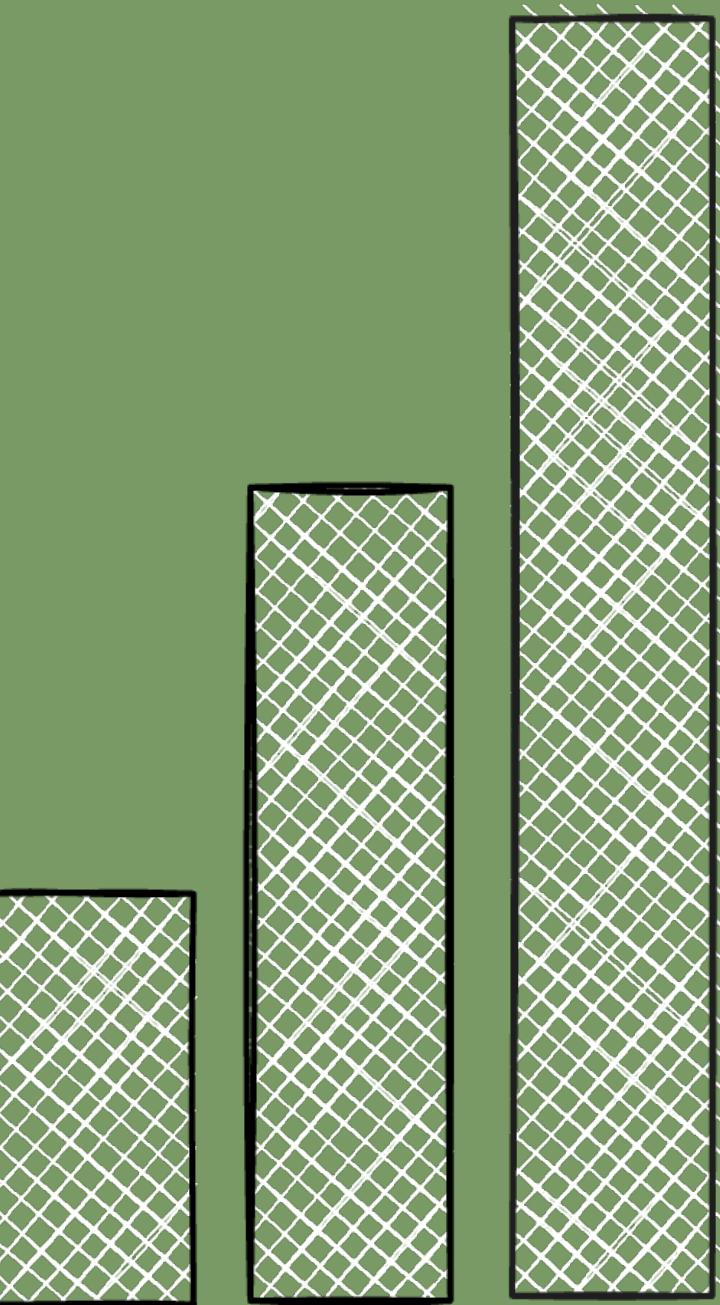


DAZN 2024 Decision Framework

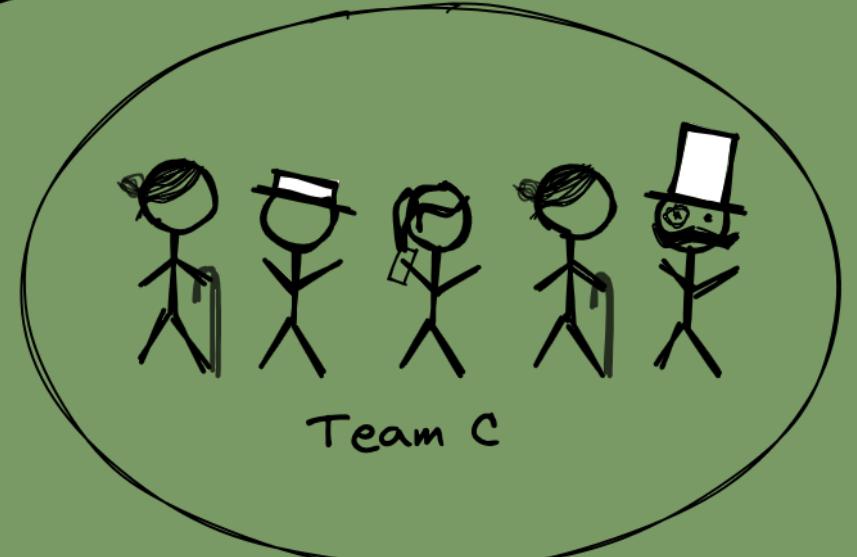
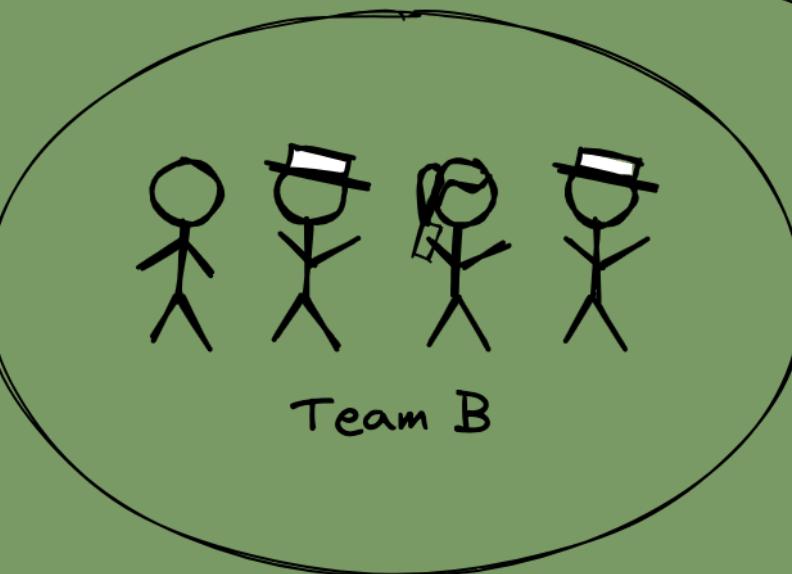
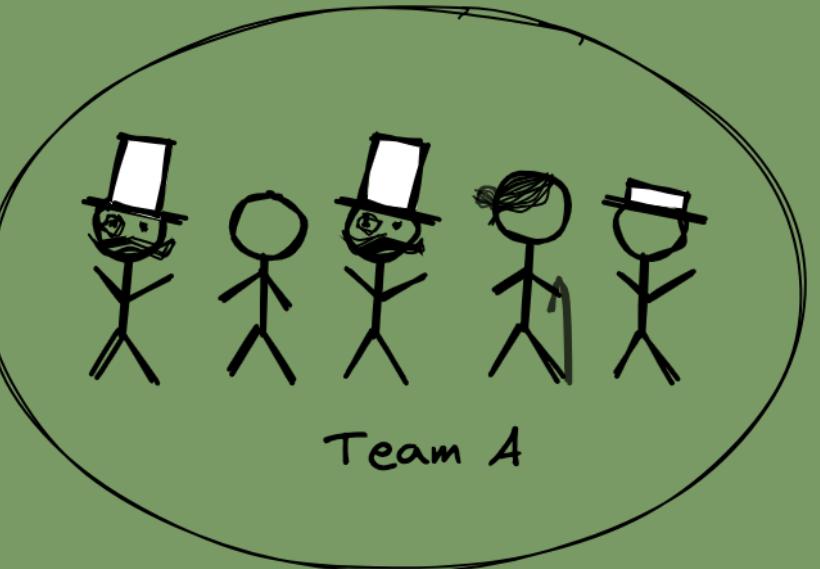


Sharing Ideas & Sharing Code

Part 3 of 3



Autonomous Teams are at risk of creating Knowledge Silos



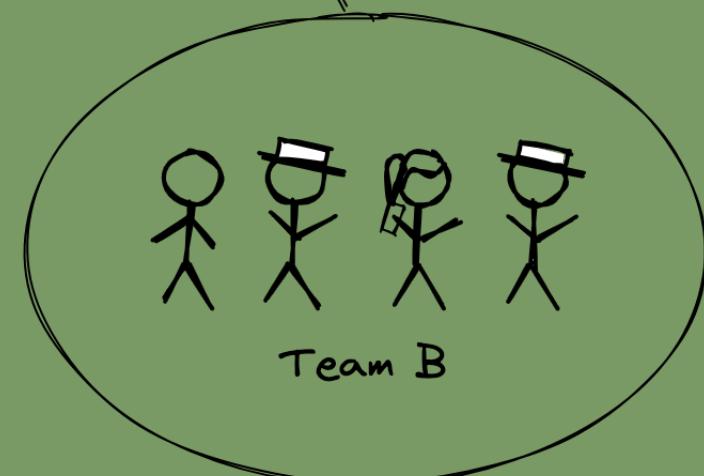
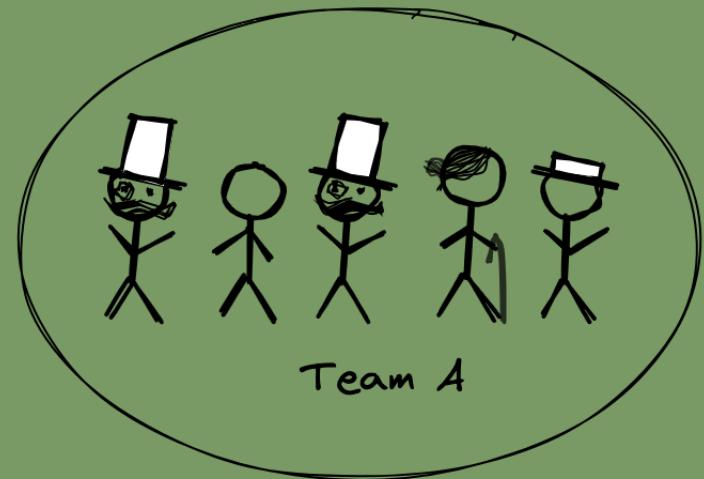
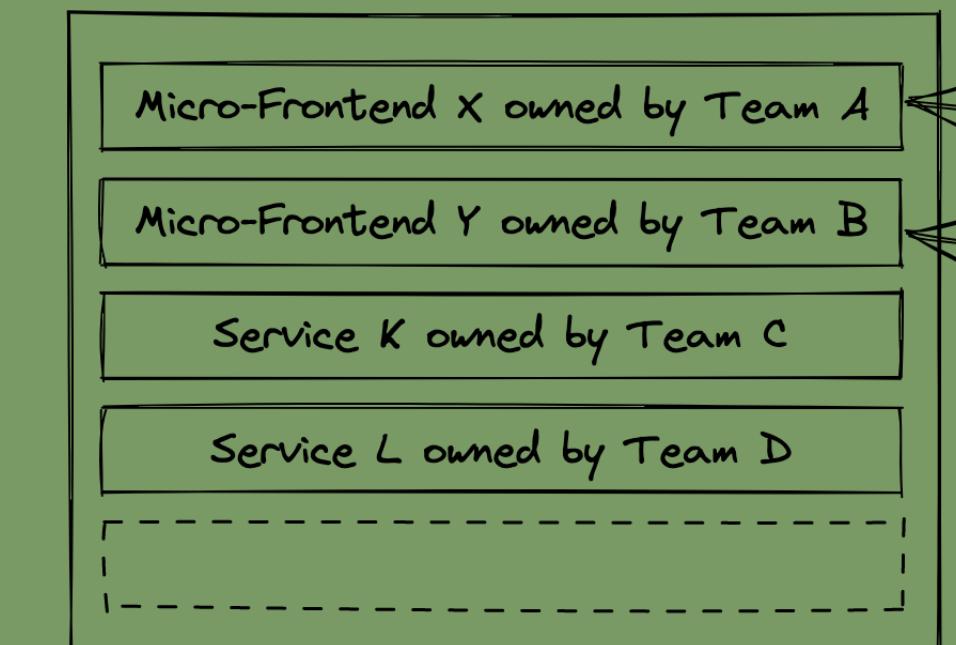
Share Knowledge across Teams

- 👉 **Frontend Guilds**
- 👉 **Internal Meetups**
- 👉 **Principals & Architects**

Enable Discovery beyond Teams

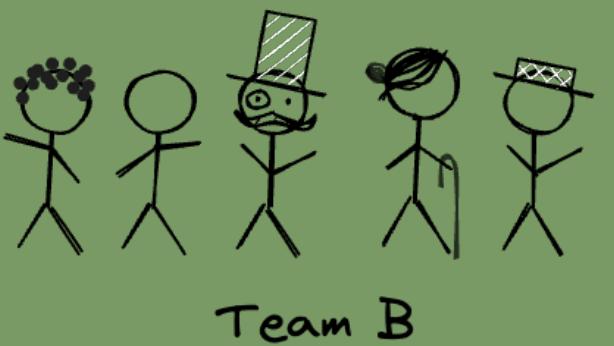
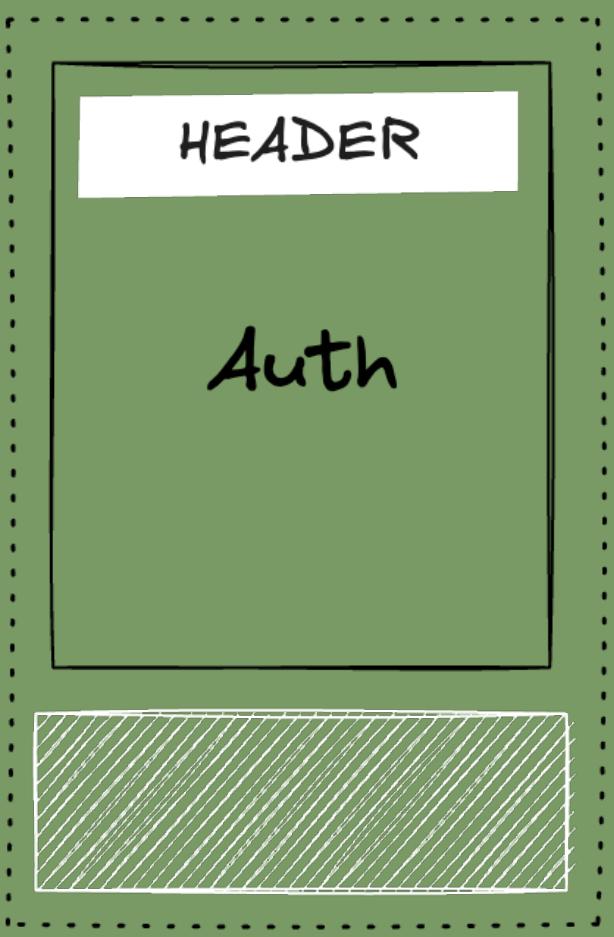
👉 **Developer Experience DX**

👉 **Backstage (Spotify)**

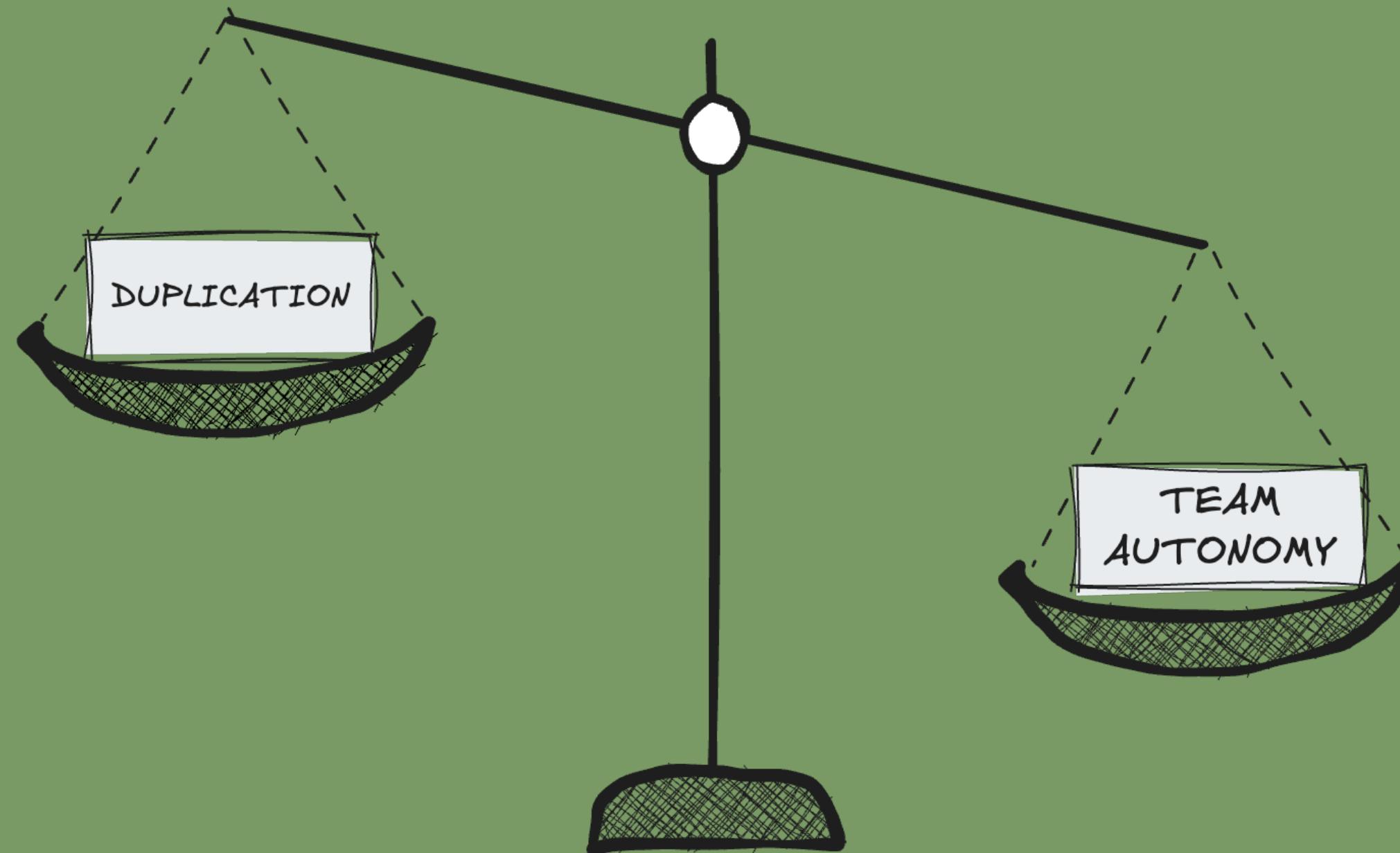


**We're now sharing
ideas Should we also
share code?**

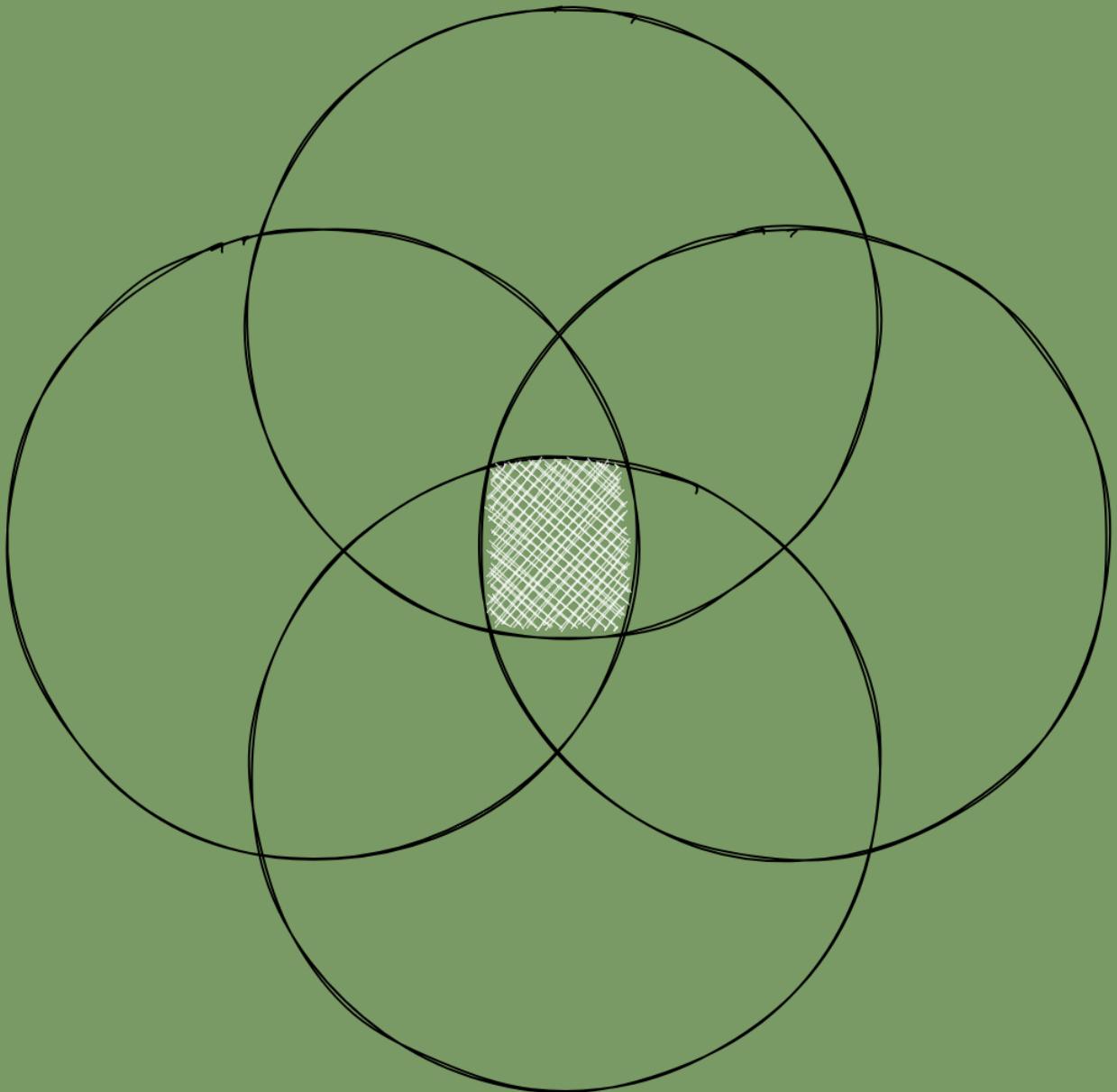
To favor teams independence, we duplicated by design



What's important for you ?



**Not a single visual
component has been
shared across all the
Micro-frontends, yet**



**In DAZN, we're sharing
some components to
reflect company
priorities**

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What are we sharing

Payments

Critical component

What are we sharing

 **Payments**

Critical component

 **Analytics**

Risks of Fragmentation

What are we sharing

Payments

Critical component

Analytics

Risks of Fragmentation

Experiments

Hard to provide autonomy

takeaways

- 👉 Your business subdomains, and your Micro-Frontends, are **not immutable**
- 👉 Sharing code is a **solution** to a problem - not a **goal**
- 👉 It's always about **People**

@_maxgallo

thank you

github.com/maxgallo/talk-micro-frontends-five-years-after

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