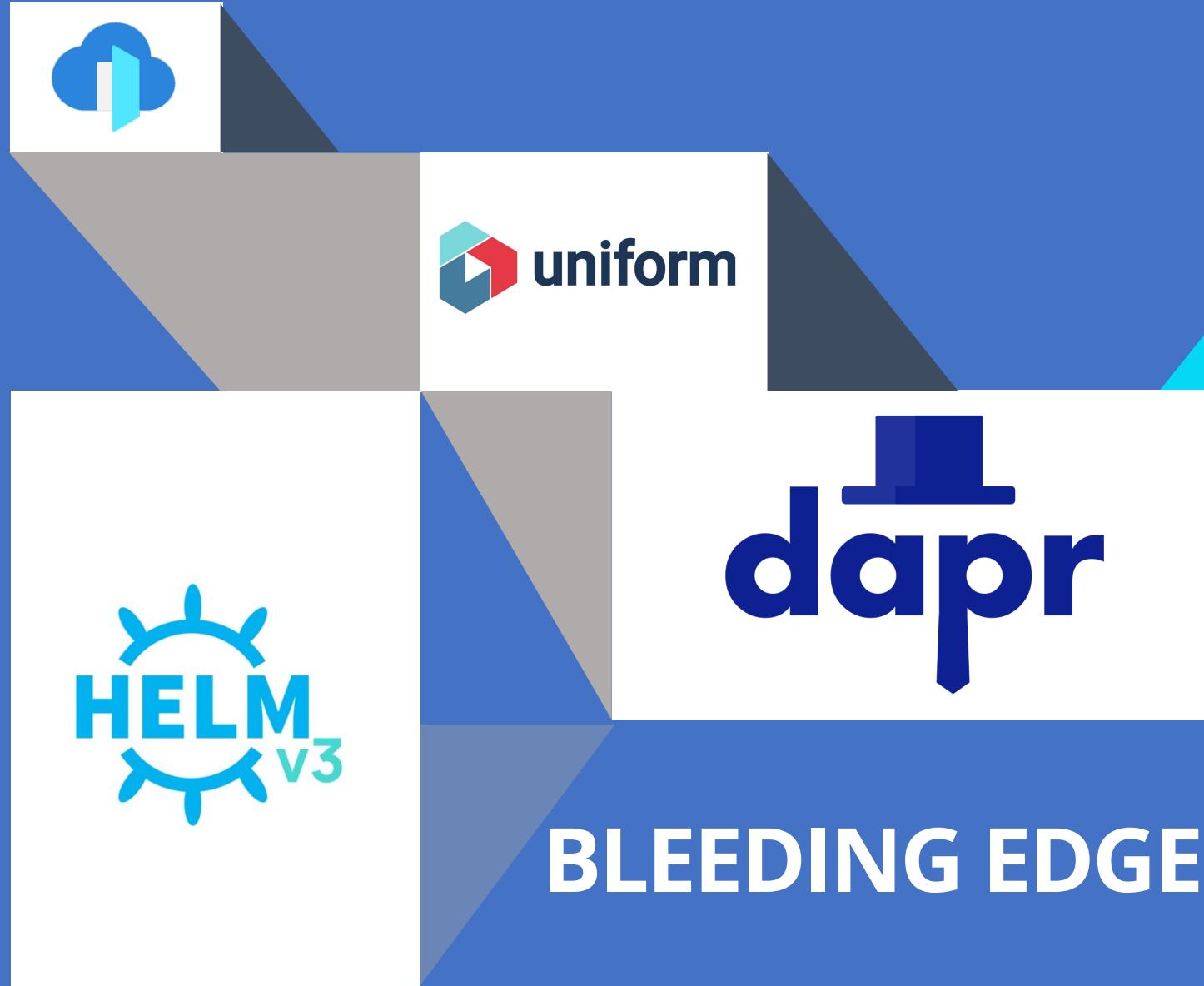


01 Playing Catch up

02 Pioneering

03 Results

04 Techniques and Buy-in



BLEEDING EDGE

Bleeding edge refers to technology that is further ahead than cutting-edge or leading-edge technology. It is technology that is so new and advanced that it is still unproven, could carry risks, and may not perform as intended.

PLAYING CATCH UP



PLAYING CATCH UP

Multiple CMS Instances
Monolith
Virtual Machines
On-prem
ASP.NET Webforms
Manual Deploys

Headless CMS
Microservices
Kubernetes
Cloud Native
React JS
DevOps/Automation

2018



Now

DESIGN SYSTEM

08:37 ⓘ

nel-ui.[REDACTED].co.uk

Nationwide Experience Language

Home Guides Design system

Welcome to NEL

Nationwide's Experience Language is our shared **design** and **communication framework**. It informs how we look, talk and interact with our members.

"NEL enables us to work more efficiently"

08:38 ⓘ

nel-ui.[REDACTED].co.uk

Characteristics

Taking visual cues from the village icon

Our village icon is a key and recognisable part of our visual identity. It consists of a tree, house and a church.

To create a consistent set of icons, we should take inspiration from the village icon wherever possible.

- Shapes**
Use filled shapes such as triangles and circles to evoke the shapes in the logo.
- Strokes**
Consistent stroke width should be applied.
- Proximity and negative space**
Proximity is the distance between objects. Negative space is the space around objects.

08:38 ⓘ

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Nationwide Experience Language

Home Guides Design system

Guides

Guides provide the tools and techniques to help us create user-centred experiences. They include research, resources and guidance, which we can use to make informed decisions.

Readability

Readability measures how easy text is to read on a screen.

08:52 ⓘ

nel-ui.[REDACTED].co.uk

Grid specs

All margin and horizontal gutter measurements are multiples of 4px. This helps with our vertical and horizontal rhythm.

Elements of the grid

- Columns**
The columns dictate the size and width of objects on the grid.

08:39 ⓘ

nel-ui.[REDACTED].co.uk

Patterns

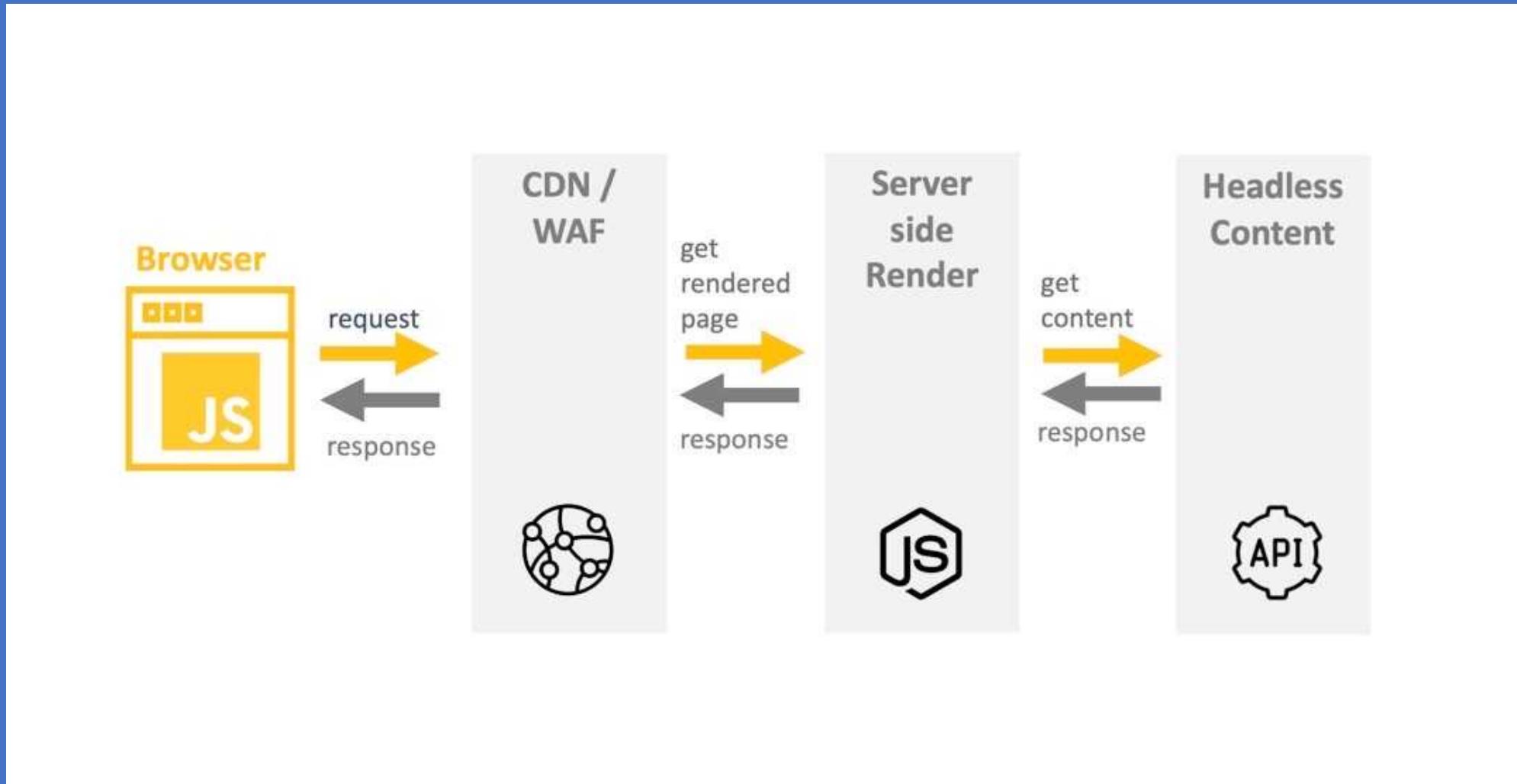
Choosing the right in-page message pattern depends on two things; the urgency of the message and the UI prominence it requires.

UI prominence scale	Critical	Important
High	Important: The purpose is to warn	Important: The purpose is to warn
Moderate	Note: The purpose is to alert	Note: The purpose is to alert
Low	Information: The purpose is to tell	Information: The purpose is to tell
May be helpful to know	Tip: The purpose is to help	Tip: The purpose is to help

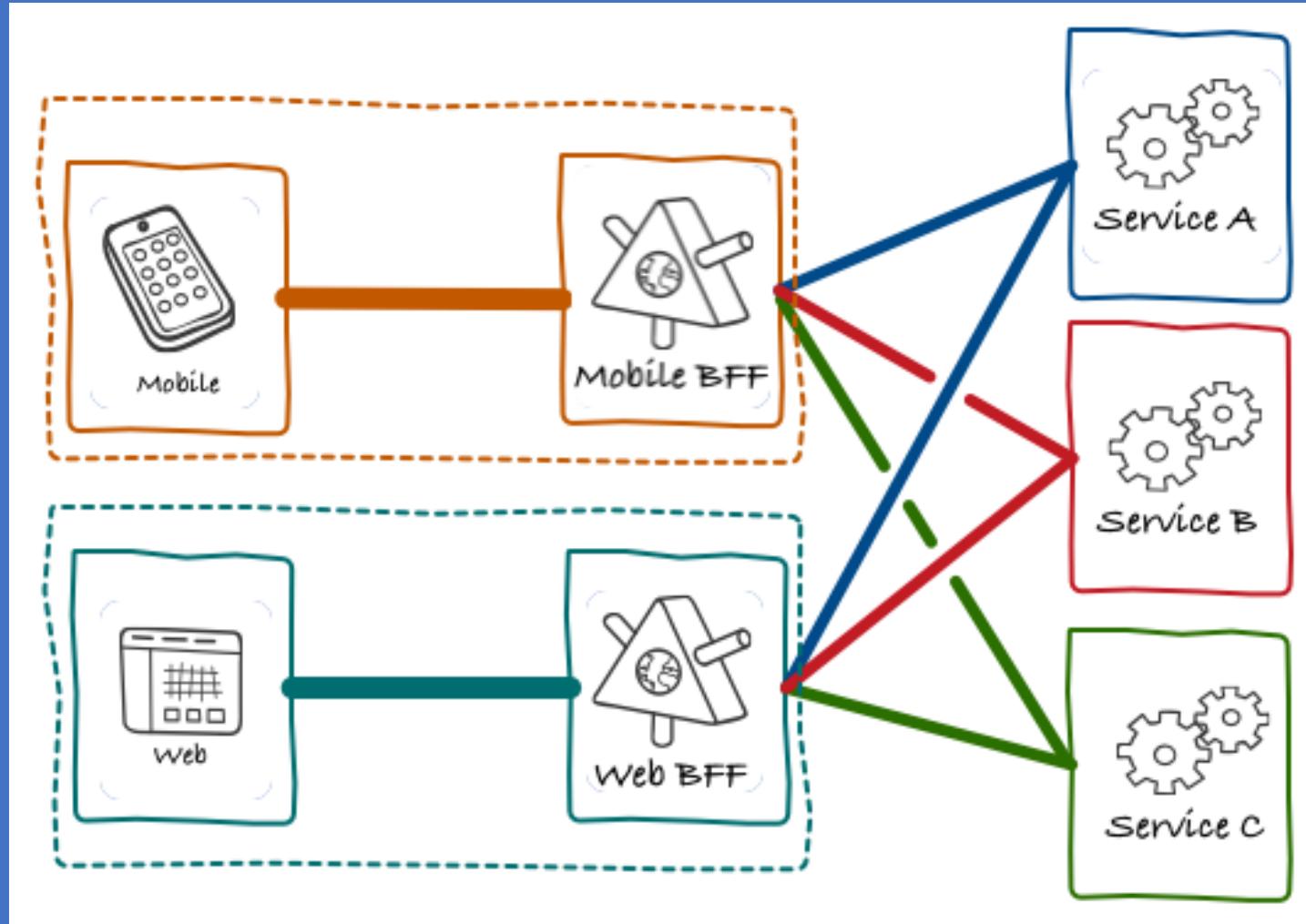
Defining the message urgency

Purpose	The message	Benefit	Potential impact
Important: The purpose is to warn	Contains critical information that's vital for the member.	The information could prevent major issues for members if they neglect their money, security or personal circumstances.	Potentially life-changing consequences for members or personal circumstances.

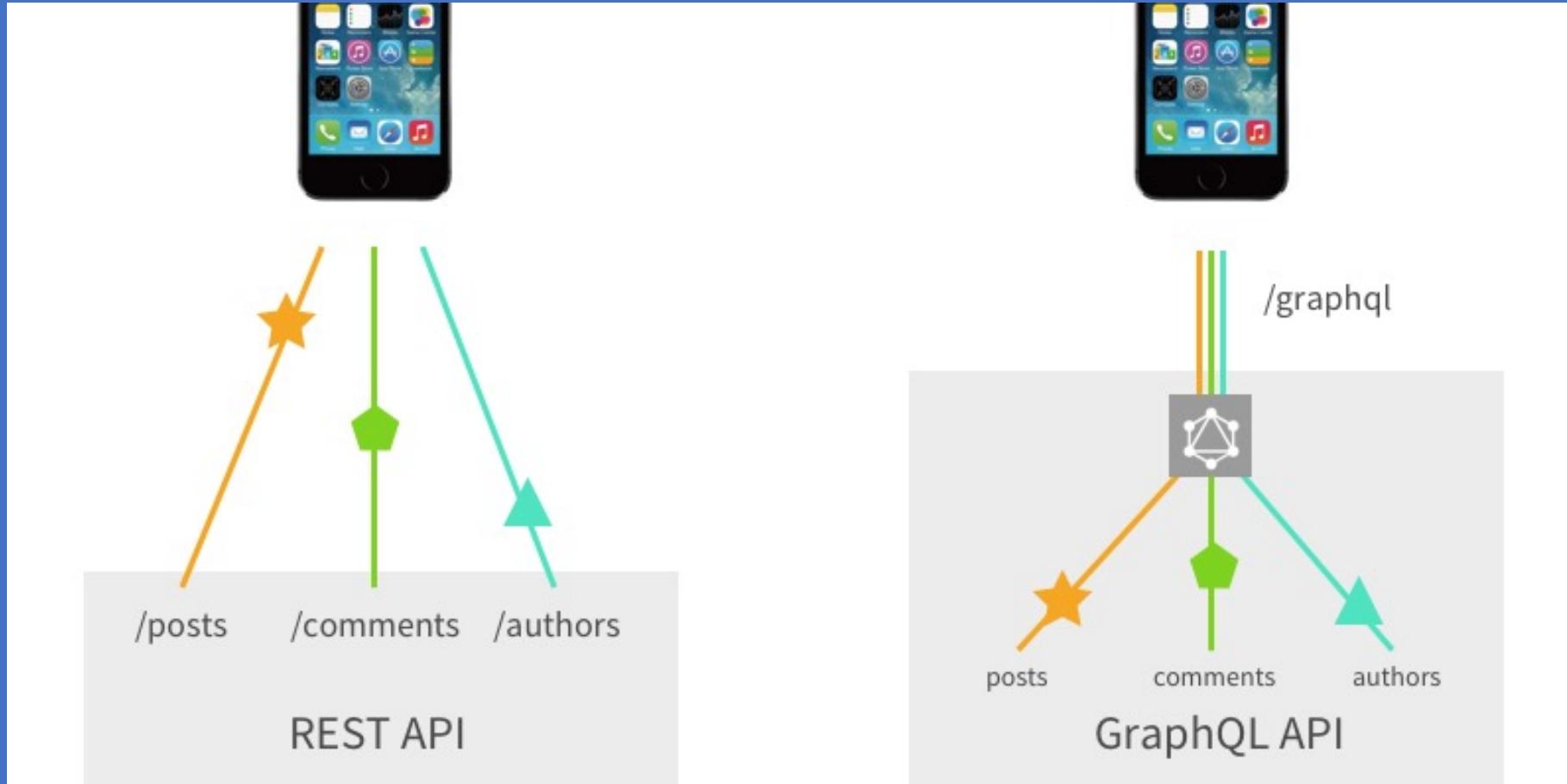
GOING HEADLESS



MICROSERVICE ARCHITECTURE



PIVOT TO GRAPHQL



PIVOT TO GRAPHQL

APOLLO

GraphQL & Rest: A burger comparison

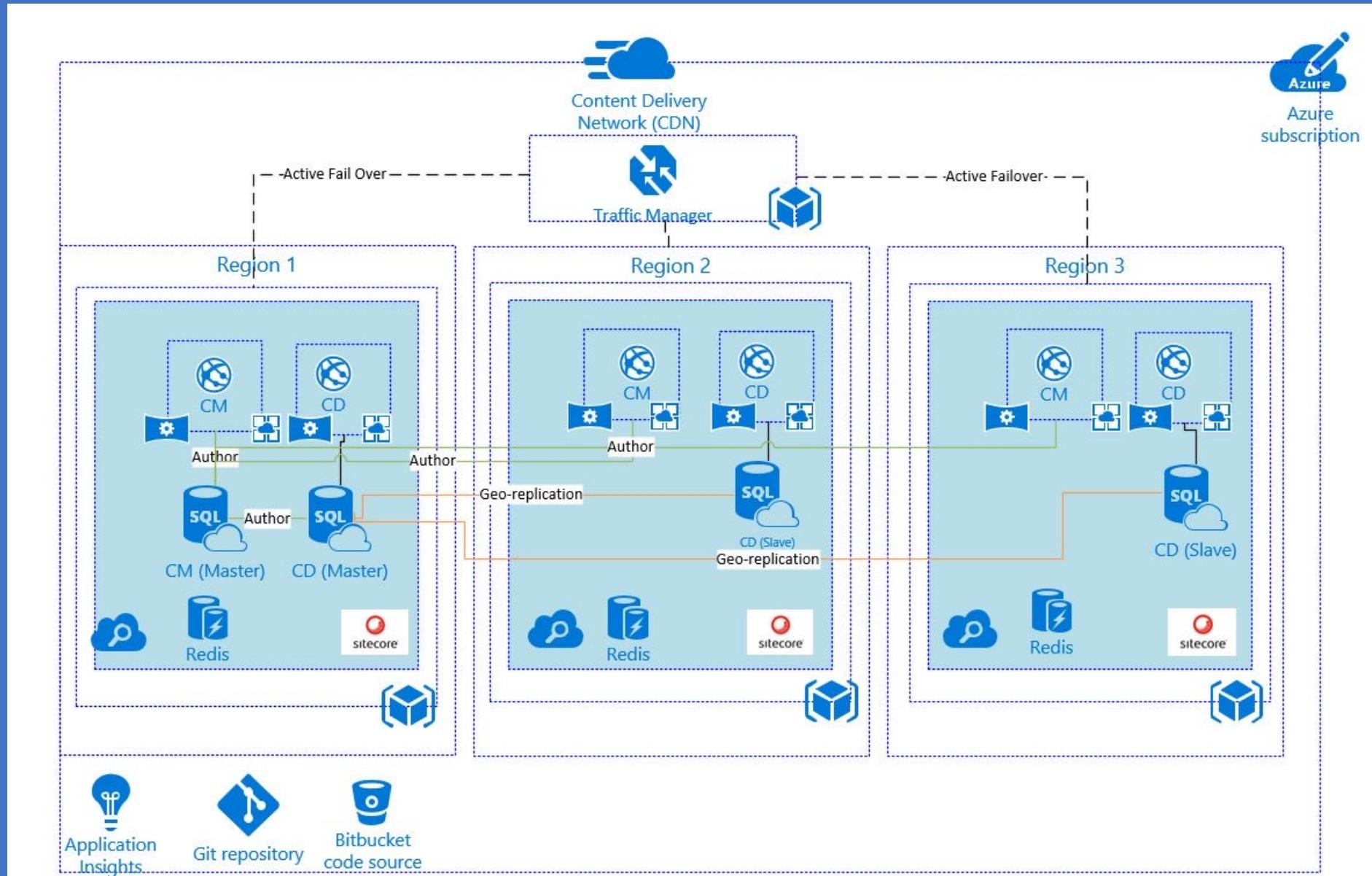
<https://your-api.com/burger/>



```
query getBurger {  
  burger {  
    bun  
    patty  
    bun  
    lettuce  
  }  
}
```



MULTI-REGION



CONSTRAINTS



You said you have a multi-cloud strategy?

How are you going to meet your resilience targets?

How are you going to demonstrate portability?

Have you tested disaster recovery?



**BANK OF ENGLAND
PRUDENTIAL REGULATION
AUTHORITY**

PIONEERING

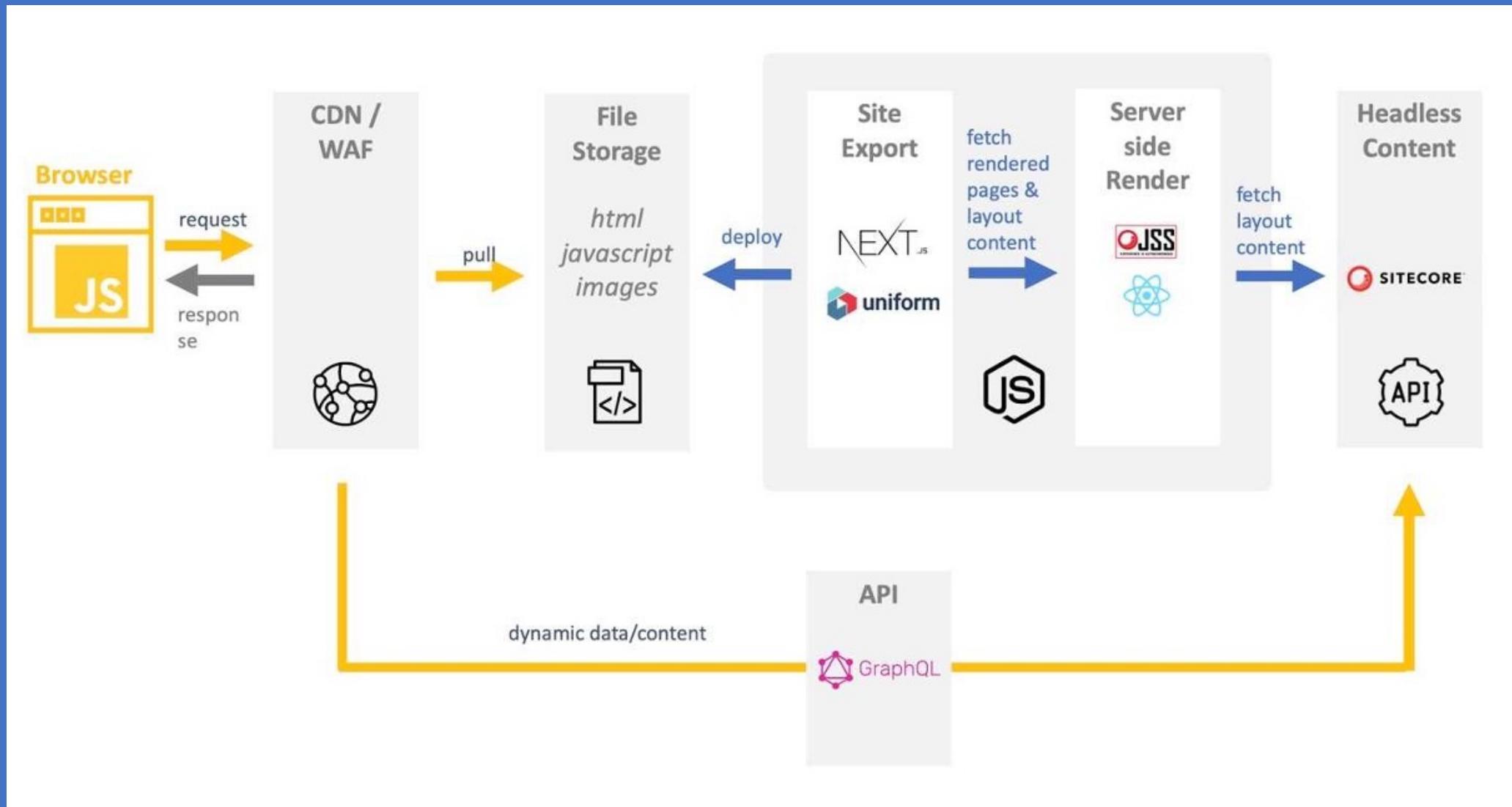
 Jamstack



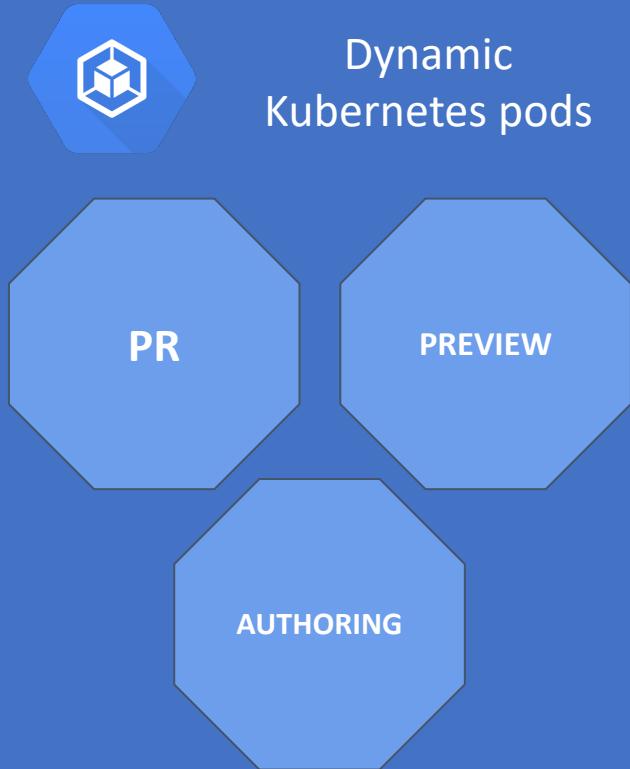
**Content pre-rendered =
lightening fast delivery**

**Content exported =
simple and hyper-resilient
deployment options**

PIVOT TO JAMSTACK



CHALLENGES



Dynamic
Kubernetes pods



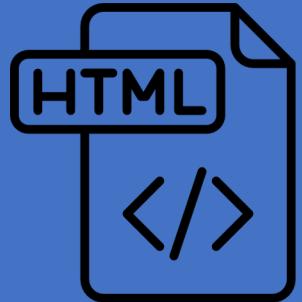
Integration

Preprod

Prod

Static Environments

CHALLENGES



900 Pages



Optimise export for
acceptable publish time



Blue / Green Azure
Storage Deployment

Results



EXPERIENCE OBJECTIVES

- 1 Increase traffic driven by Natural Search
- 2 Improve Natural Search keyword rankings
- 3 Increase Mortgage traffic to DIP conversion
- 4 Maintain existing App Start to App Complete conversion rates
- 5 Reduce digital fall out
- 6 Reduce immediate repeat searches
- 7 Reduce repeat searches within visit
- 8 Improve Experience Tracker satisfaction score
- 9 Increase task completion rates (Experience Tracker)
- 10 Improve Ease & Effort score (Experience Tracker)
- 11 Reduce user generated errors
- 12 Reduce system generated errors
- 13 Improve help content quality (in-page feedback tool)
- 14 Minimise volume of 404 errors seen



Finance CX top 70

Which Finance companies deliver the best digital customer experience in the UK, The Netherlands, Spain and Germany?

Are you among the companies with the best online CX? Does your company top the rankings as a winner or are you lagging behind on your competitors?

[Discover your position](#)

Best performing finance websites on CX - top 10



01	Nationwide.co.uk	71
02	ING.es	71
03	Tescobank.com	70
04	Openbank.es	69
05	BBVA.es	69
06	Rabobank.nl	69
07	VirginMoney.com	69
08	NatWest.com	68
09	MoneySavingExpert.com	68

DEVOPS

FROM:

1 week route to live

40 hours manual *install* and test in 2 environments

TO:

1 hour route to live

Fully automated deployment and test in 4 environments

BUY-IN



Great results, but how do you convince a large organisation
to early adopt?

EXPERIMENTATION

Hypothesis Driven Development

We believe *that DAPR*
Will result in *an increase in engineer
productivity and increase portability*
We will have confidence to proceed
When *we have measured a reduction
in boilerplate code or demonstrated
portability*

DECIDE REVISIT PIVOT

Architecture Decision Record

<https://adr.github.io/>

```
# [ADR-0002] Choose build tooling for CI build for Monorepo

- Status: Proposed
- Deciders: Jamie Greeff
- Date: 2019-03-04

Technical Story: --redacted--

Jamie Greeff, 3 years ago | 1 author (Jamie Greeff)
## Context and Problem Statement

When building a monorepo, the build times can increase over time as more people start to add projects to the repository their own respective CI scripts/tooling. This can be a serious issue as with a monorepo you have a lot of churn as it forces people to resolve integration issues at the time of merging branches, potentially causing more commits than usual, meaning build times need to be kept to a minimum.

Jamie Greeff, 3 years ago | 1 author (Jamie Greeff)
## Decision Drivers

- Need short build times due to potentially high volume of commits
- Potentially reduce work done by individual builds so we're not wasting compute building artifacts that have already been built, this is especially apparent when doing a Monorepo where you want to avoid building things that you haven't changed

Jamie Greeff, 3 years ago | 1 author (Jamie Greeff)
## Considered Options

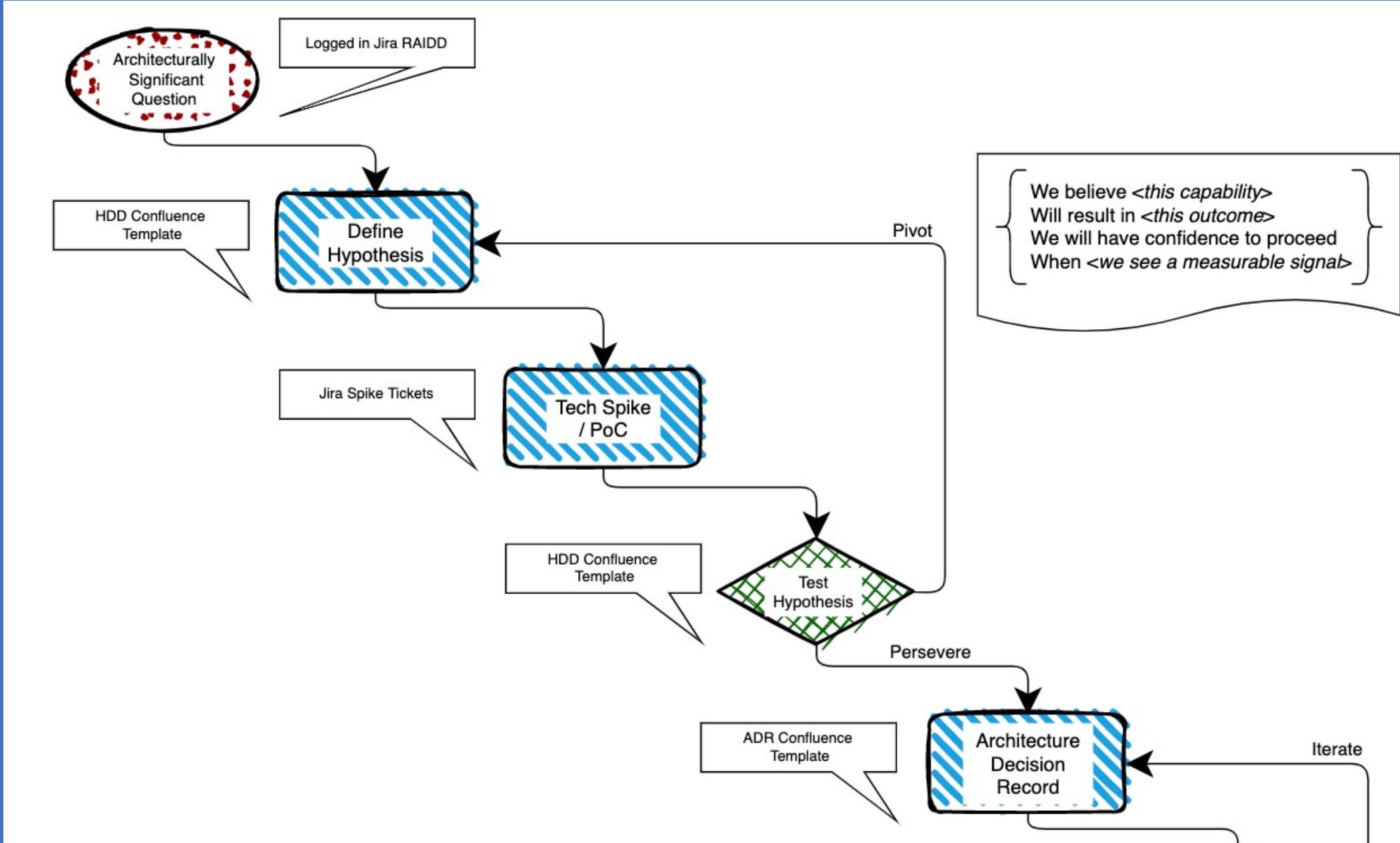
listed in order that they were tried

- Different build definitions (azure-pipelines.yaml) for different projects in Monorepo, can then filter build triggers on code changed using trigger paths in Azure Devops
- Bazel (https://bazel.build/)
- Buck (https://github.com/facebook/buck)
- Nix (https://github.com/NixOS/nix)

Jamie Greeff, 3 years ago | 1 author (Jamie Greeff)
## Decision Outcome

Chosen option: **Nix**. Jamie Greeff, 3 years ago • Add initial ADRs to repo
```

LEAN-ISH ENTERPRISE GOVERNANCE



OPENSOURCE CONTRIBUTION

 [dapr/components-contrib](#) Public

 Code  Issues 95  Pull requests 22  Actions  Security  Insights

Pass the message body in OPA middleware #1166

 Closed richgo opened this issue on 23 Sep 2021 · 1 comment

 richgo commented on 23 Sep 2021 · edited  Contributor 

Proposal

As an engineer building GraphQL APIs I would like to be able to apply Rego policies to graph queries outside of my code base so that policies can be standardised. Whilst it is possible to call out to OPA from a resolver in Apollo/Hot chocolate etc or even deploy a WASM file with my Graph implementation, doing so requires adding libraries like opah to my codebase.

This can be solved by passing the message body to OPA middleware so that the Rego policies deployed by DAPR can be run against the incoming request outside of the GraphQL implementation.

Contrib PR:
[#1165](#)

Docs PR:
[dapr/docs#1833](#)

 [GoogleContainerTools/skaffold](#) Public

 Code  Issues 550  Pull requests 12  Actions  Security  Insights



 Clear current search query, filters, and sorts

 2 Open  4 Closed   

 [Docker Buildx Integration](#) area/build build/docker kind/feature-request platform/buildkit priority/blocked
#5018 by no1elman was closed on 19 Mar 2021

 [FR: Allow "delete" to target a specific release](#) kind/feature-request priority/p3
#3986 opened on 20 Apr 2020 by no1elman

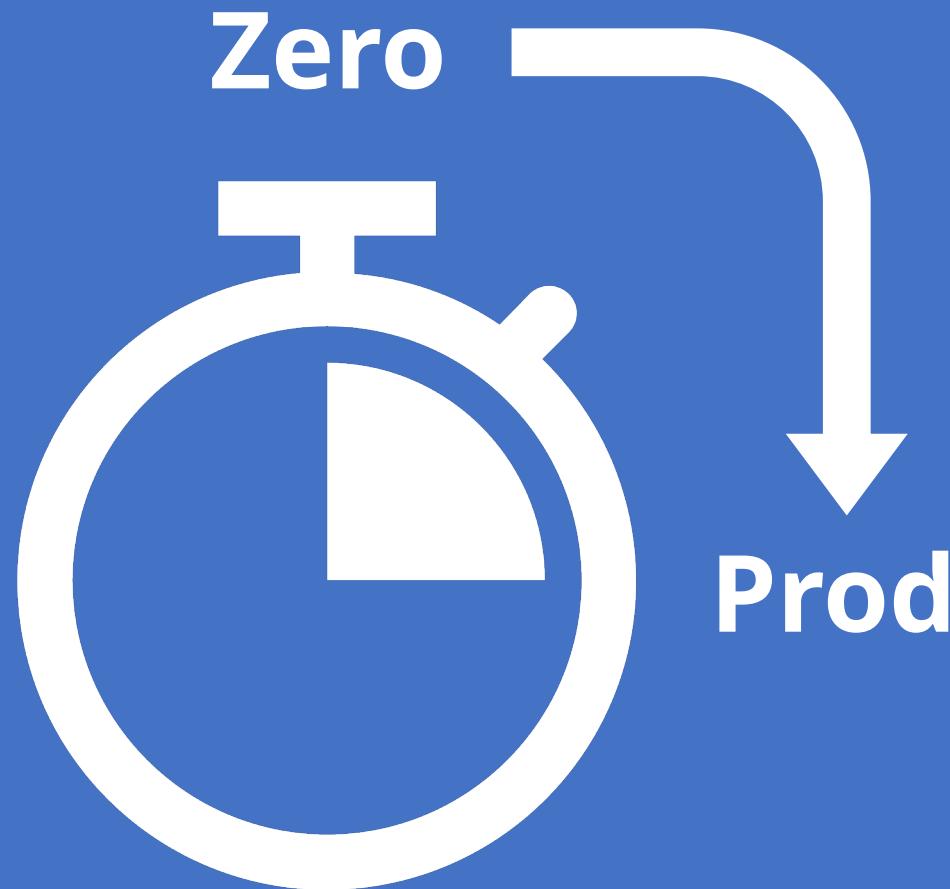
 [helm: delete doesn't respect namespace](#) area/deploy deploy/helm in progress kind/bug priority/p1
#3843 by no1elman was closed on 21 May 2020

 [Build Artifact Output as Standard](#) area/build kind/question priority/awaiting-more-evidence
#3836 by no1elman was closed on 20 Mar 2020

 [Multistage Docker Build Cache](#) area/build area/cache build/docker kind/feature-request priority/p3
#3831 opened on 16 Mar 2020 by no1elman

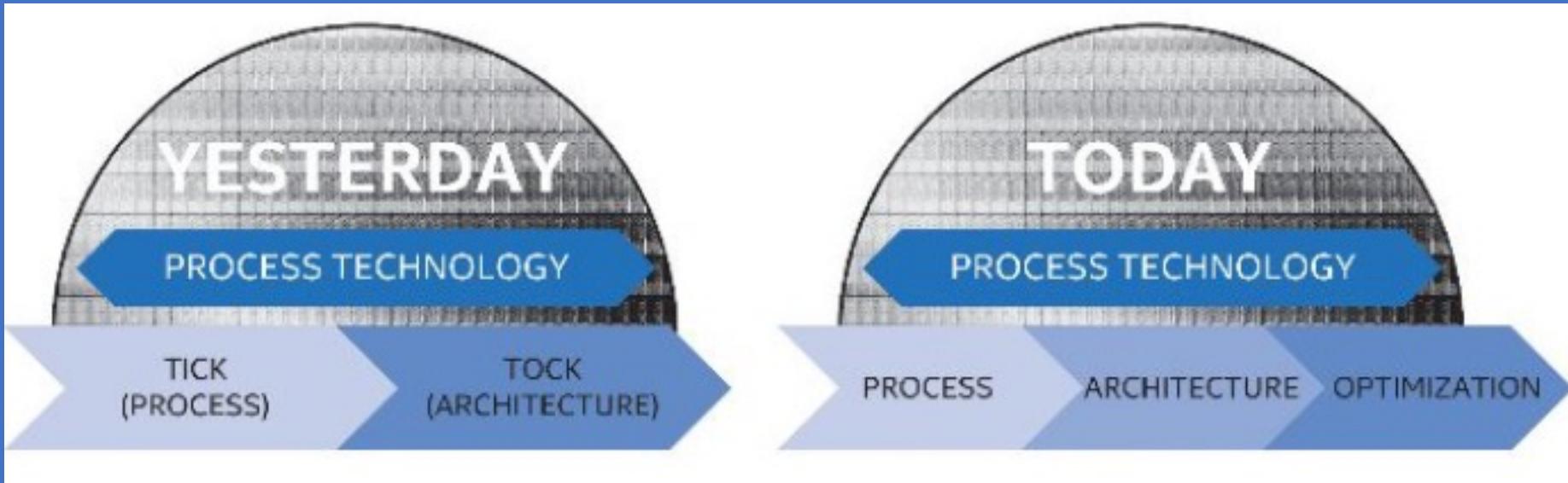
 [Getting Remote Config even for local Docker Image](#)
#3808 by no1elman was closed on 12 Mar 2020

TIMING



Rule of thumb:
shouldn't be bigger than quarter for big ticket items

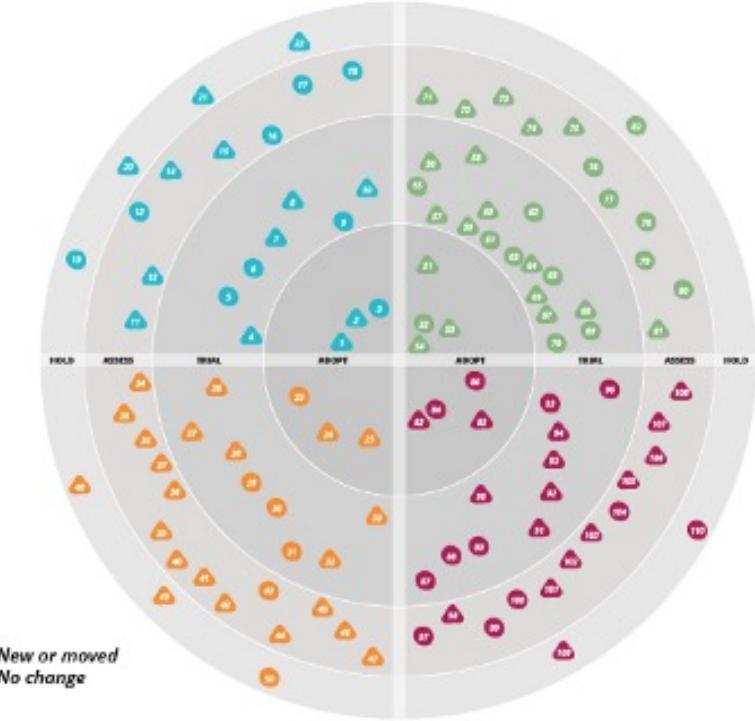
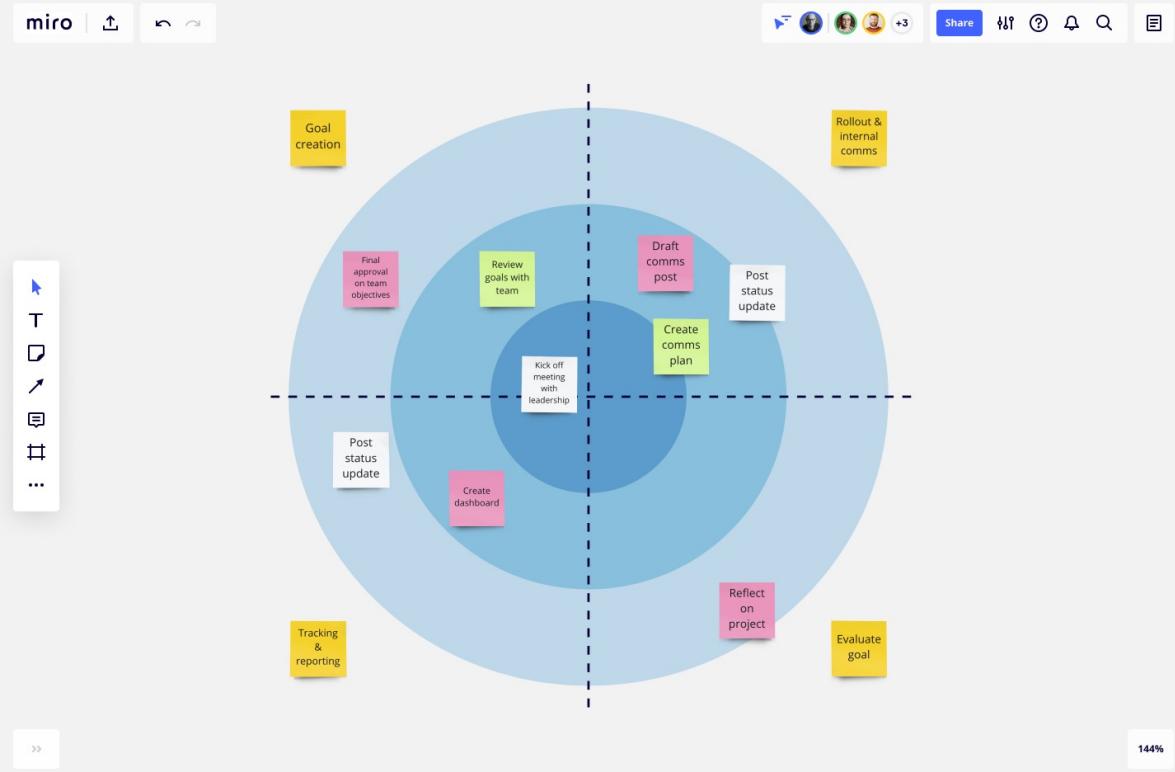
TIMING



Rule of thumb:

Throttle new tech adoption. Tick one sprint, Tock the next

TIMING



**Build you own radar to track new technology maturity
Time PoC's and [potential] adoption accordingly**

CONWAYS LAW

Conway's Law asserts that organizations are constrained to produce application designs which are copies of their communication structures. This often leads to unintended friction points.

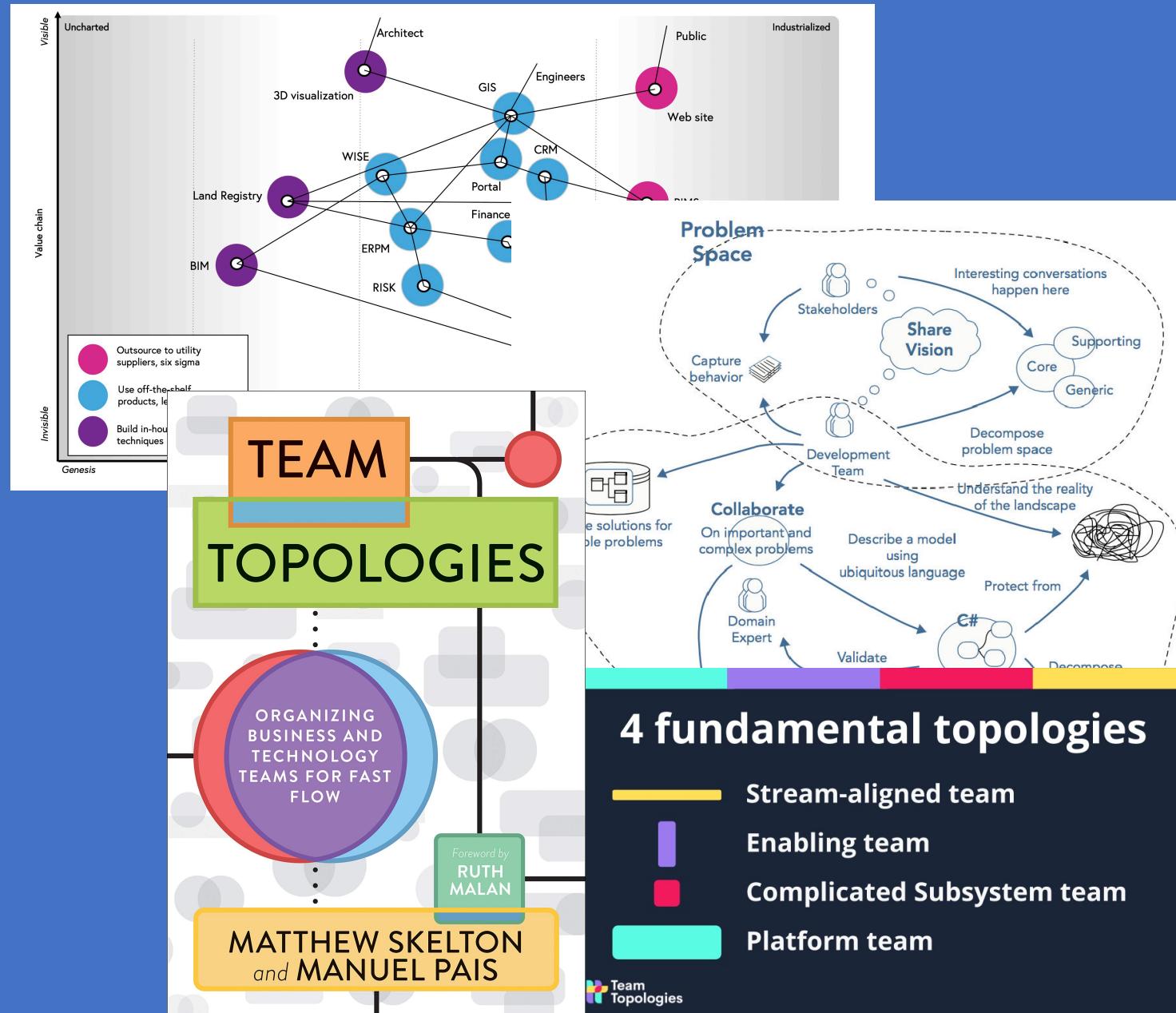
INVERSE CONWAY MANEUVER

The 'Inverse Conway Maneuver' recommends evolving your team and organizational structure to promote your desired architecture.

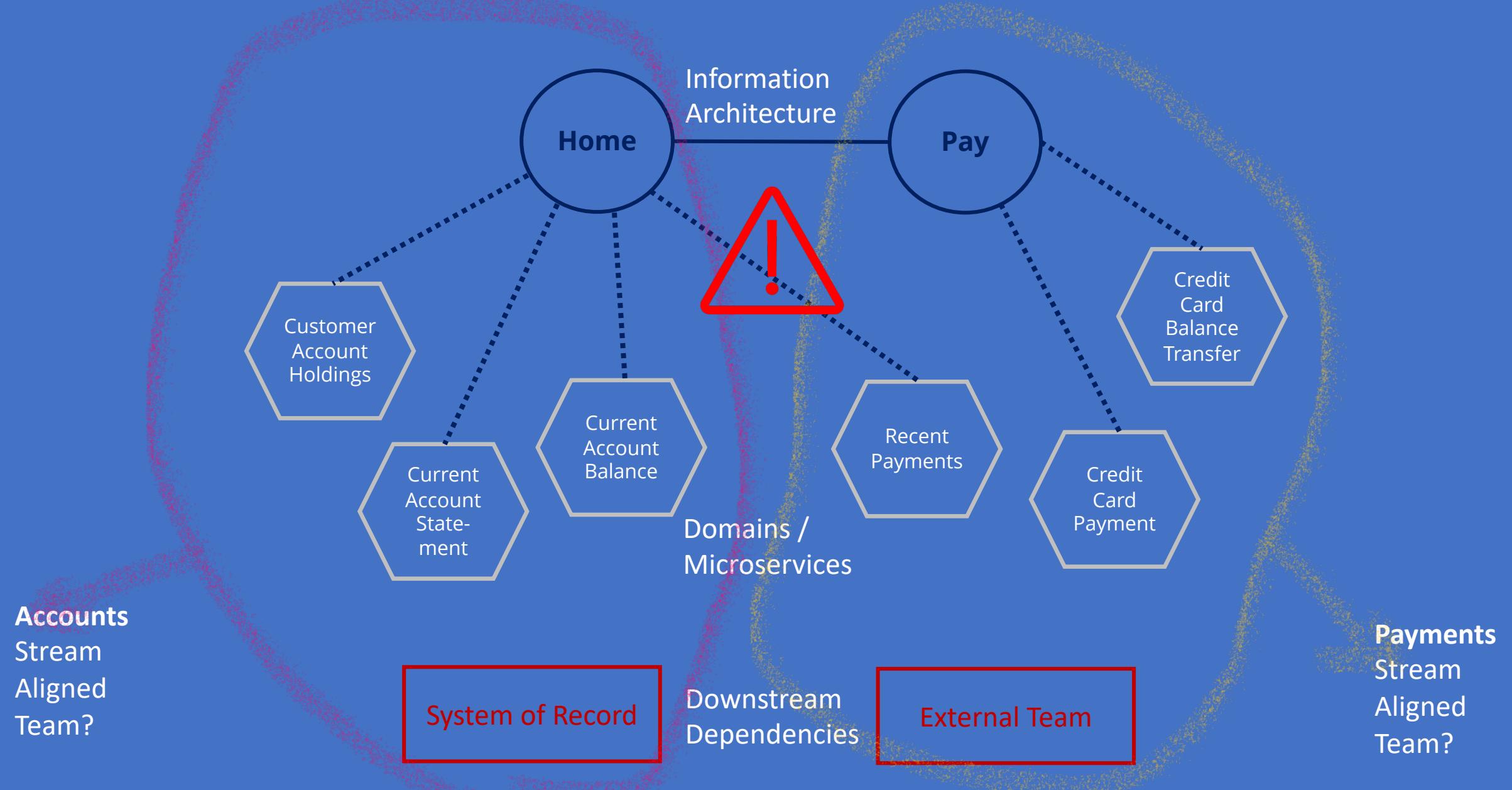
Ideally your technology architecture will display isomorphism with your business architecture.

SOCIOTECHNICAL ARCHITECTURE

- Wardley Mapping
- Domain Driven Design
- Team Topologies



SOCIOTECHNICAL ARCHITECTURE



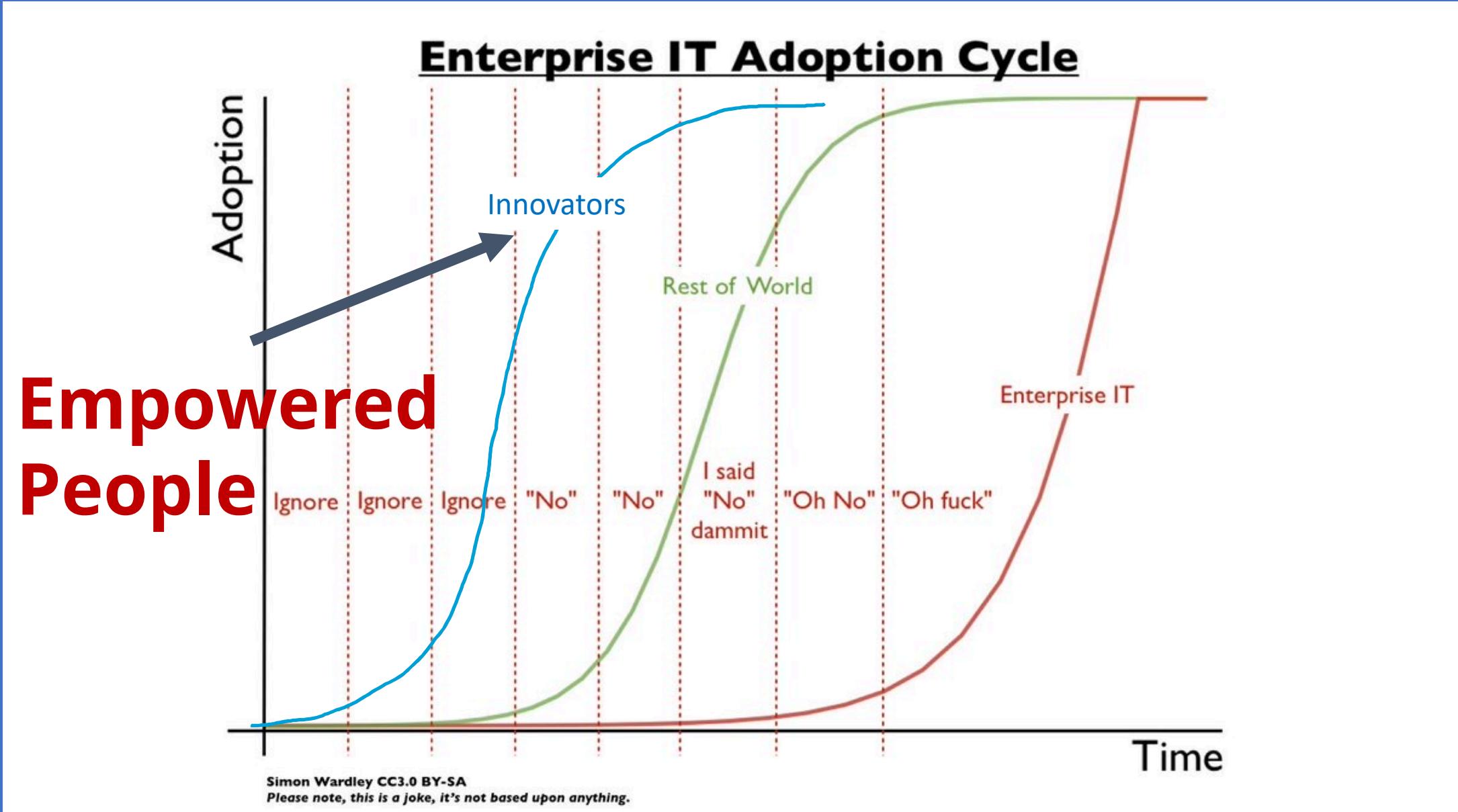
PSYCHOLOGICAL SAFETY

High performing teams are empowered to make mistakes knowing they will not be punished.

If you want to lead you have to invest in innovation, and celebrate failure and learning.



BLEEDING EDGE



Thank you

@richgojames

www.linkedin.com/in/richgojames

**DEVOPS
ENTERPRISE
SUMMIT**

AN  REVOLUTION EVENT