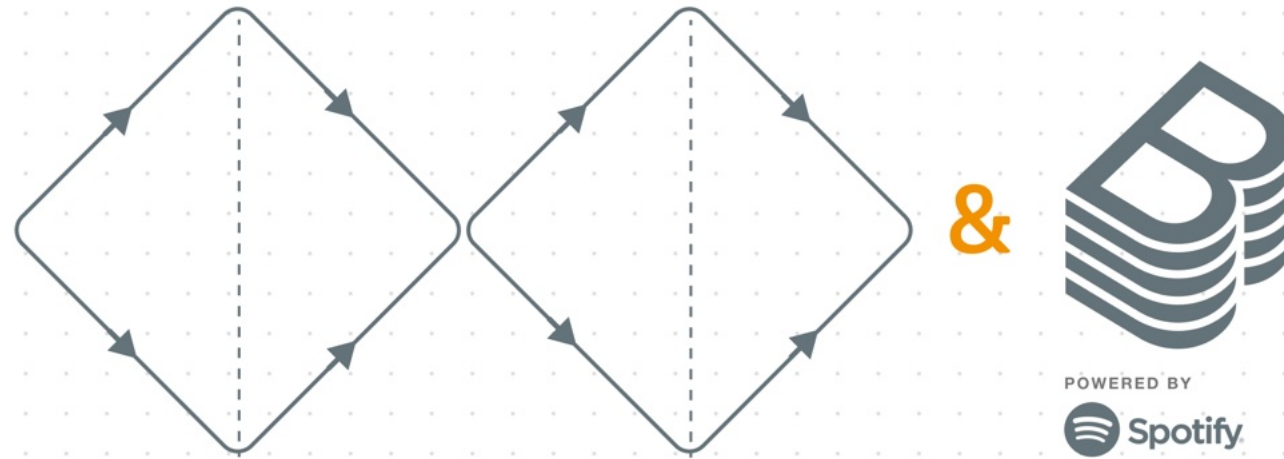


Combining Product Thinking and Spotify's Backstage for building NN's IDP





Flavia Naezer

Product Owner



Vijai Ramcharan

Principal Engineer

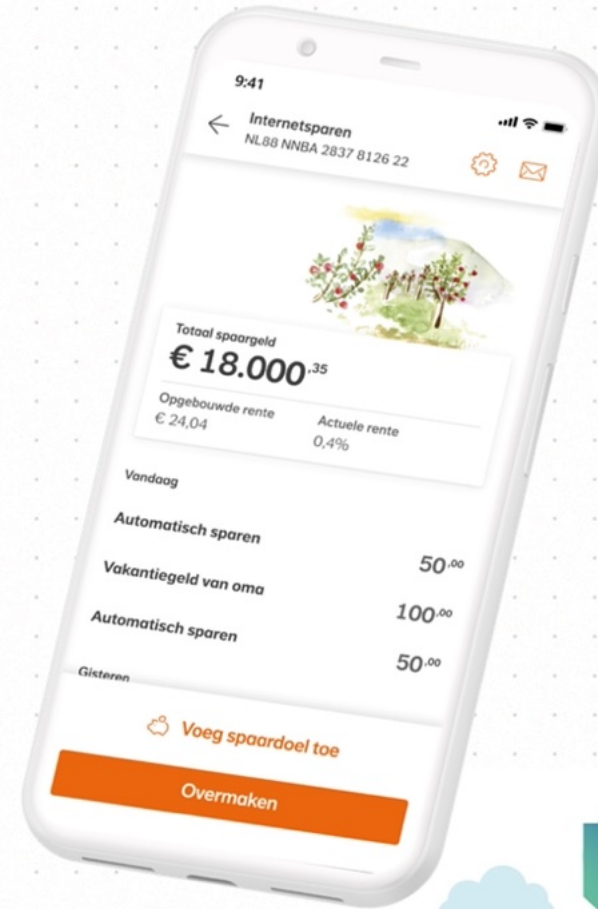
December 2023





Product Thinking for us

- Customer Obsession
- Deliver customer value quickly - through Landing Pages, Prototypes, MVPs
- Repeat
- Stakeholder alignment
- Backlog slicing, Roadmaps, OKRs



Internal Developer Platform

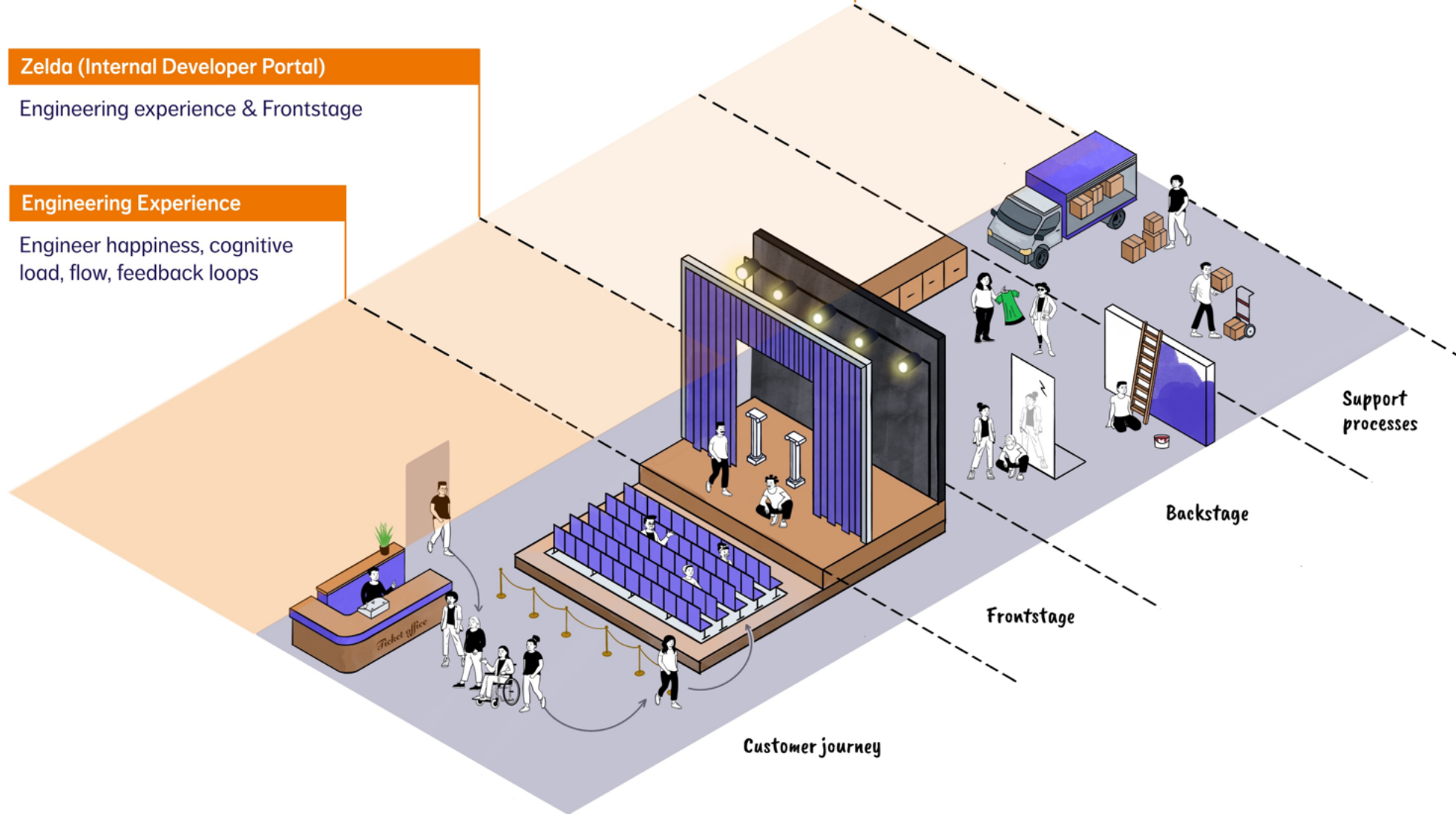
Zelda integrations, Platform engineering, Platform orchestration, Platform products

Zelda (Internal Developer Portal)

Engineering experience & Frontstage

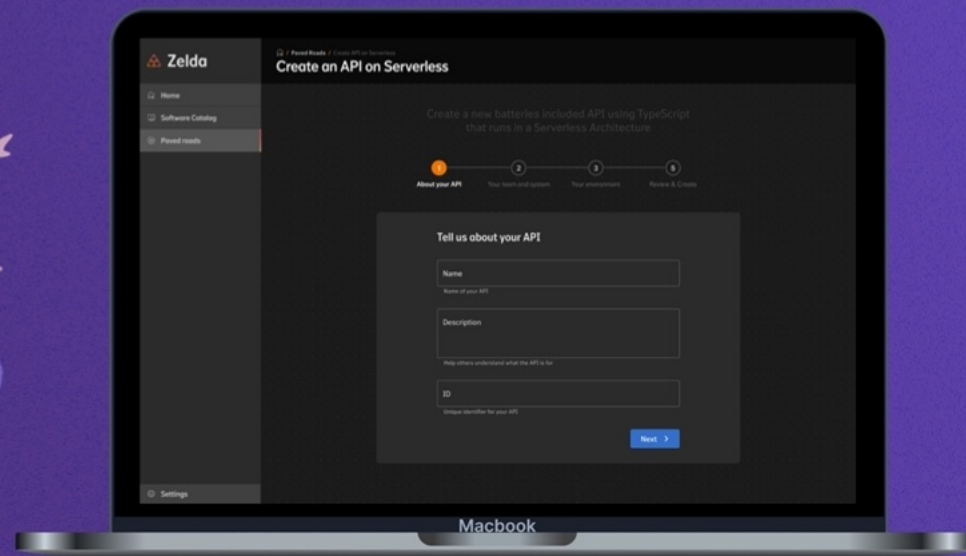
Engineering Experience

Engineer happiness, cognitive load, flow, feedback loops



Internal Developer Platform

AN EXTRAORDINARY PRODUCT IN ITS OWN SENSE



Stories that shaped the IDP Product Thinking

STORY 1 •

“Designing
a DevEx survey is
hard!”

Casper (teammate)

STORY 2 •

“Flavia,
je ziet het niet”
(“Flavia, you don’t
get it”)

Everyone from the Platform side

STORY 3

“Casper, all we need
is an API to get
insurance data”

NN before Platform Engineering

STORY 1

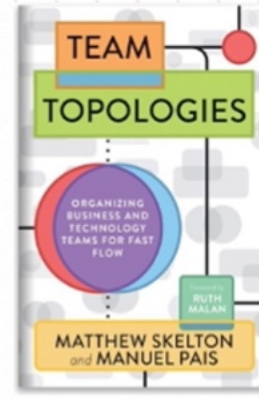


Designing
a DevEx Survey is
hard!

— Casper (teammate)



Software productivity practice over the years



2001

Agile
Manifesto:
small teams,
small
iterations

2016

DevOps: You build it, you run it

2018

DORA: 4 metrics of software delivery performance

2019

Team types,
Interaction
modes &
Cognitive
load

2021

SPACE:
Developer
Productivity
publication

2023

3 Core Dimensions of DevEx publication

Voice of the Engineer — Engineering Experience Research

Research goal: Capture the key pain points and frictions in the engineering journey “From Problem initiation to running your software in production”, that impacts their satisfaction, productivity & effectiveness



Research questions

- Where in the engineering journey are the biggest frictions / pain points
- What aspect if improved will have the biggest impact on the Engineering Experience
- What can Leadership / Managers do better to enhance the Engineering Experience



Target audience (Pilot)

- ☐ Engineering Managers Group IT NL,
- ☐ International ITS Engineering Team ES,
- ☐ C&C Engineering Team



In-depth interviews

5-6 interviews with Engineers across Spain and Group IT NL
Engineers interviewed were across a variety of profiles including Front-End Engineers. Ops Engineers, API Engineers, and Platform Engineers were included.



Critical assumptions (in)validated

- ✓ Knowing how to get stuff done is hard
- ✓ Test environments make it impossible to have confidence in shipping our software
- ✓ Our road to production is unclear & ambiguous



Survey

Based on the SPACE framework, a survey was designed to quantifiably measure and establish the state of Engineering Experience



Secondary data – besides data gathered from interviews & the survey, research study will also incorporate feedback captured through informal interviews, exit interviews etc.

Engineering Experience Research Pilot

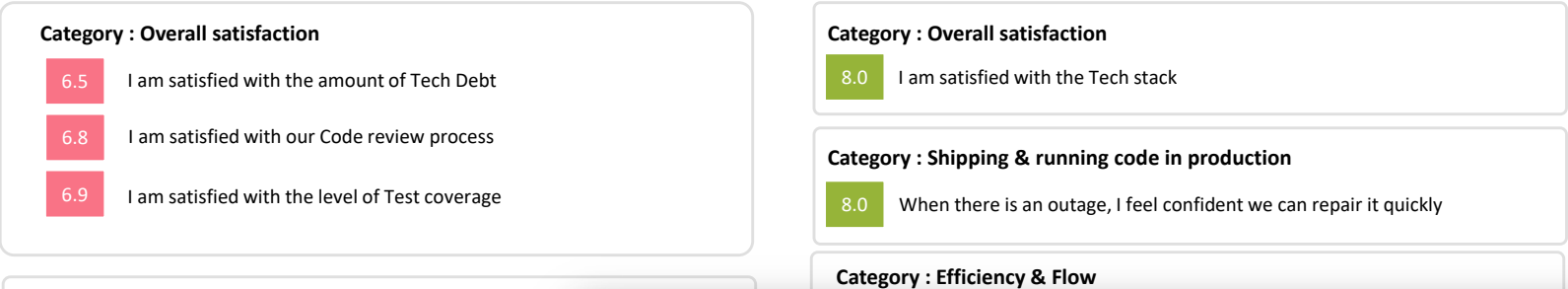
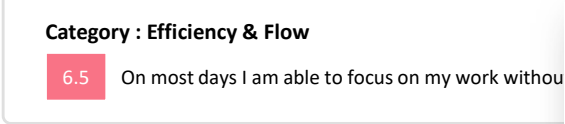
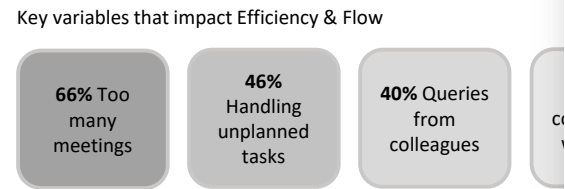
What are the top 3 problems that engineers are asking us to solve?

1. Knowing how to get stuff done in NN is hard
2. Our test environments make it impossible to have confidence in shipping software
3. Our road-to-production processes are unclear & ambiguous



NN Engineering Experience Survey results

N = 42 (Participants were asked to rate the following statements using a 10-point rating scale and based on the product they work on the most)



Deep-dive sessions – Few Customer quotes



“Discovering knowledge at NN is like archaeology”

Jaime Alvaro Moreno, Head of DevOps @ NN Tech Services International



“API is not infrastructure, it’s a product”

Flavio Stutz, Tech Lead Mortgages @ NN Bank



“We need shorter paths from questions to answer”

Mark van Straten, Developer Advocate, Group IT

Formulating a Product Challenge



HMW — HOW MIGHT WE



Give our engineers an **API paved road** so that they can immediately start adding business value and rely on us for the heavy lifting, best practices, secure & compliant building blocks?



Make it easier for engineers to **discover** teams, applications, and other software at NN?

SUMMARY STORY 1

‘Designing a DevEx Survey is hard!’

- ✓ Hiring our first user researcher - Tanushree
- ✓ Capturing the ‘Voice of the Engineer’
- ✓ Evidence-driven product backlog



STORY 2



**Flavia, je ziet
het niet**

(Flavia, you don't get it)



— Everyone at Platform



Service blueprinting



Offering name: replace this with the name of your offering
Scenario name: replace this with a name for your scenario

The diagram illustrates a sequence of steps and layers. The grid is organized into two phases: Phase 1 (Steps 1-4) and Phase 2 (Steps 5-9). The columns represent steps, and the rows represent layers. The colors of the squares indicate the state of each layer at each step.

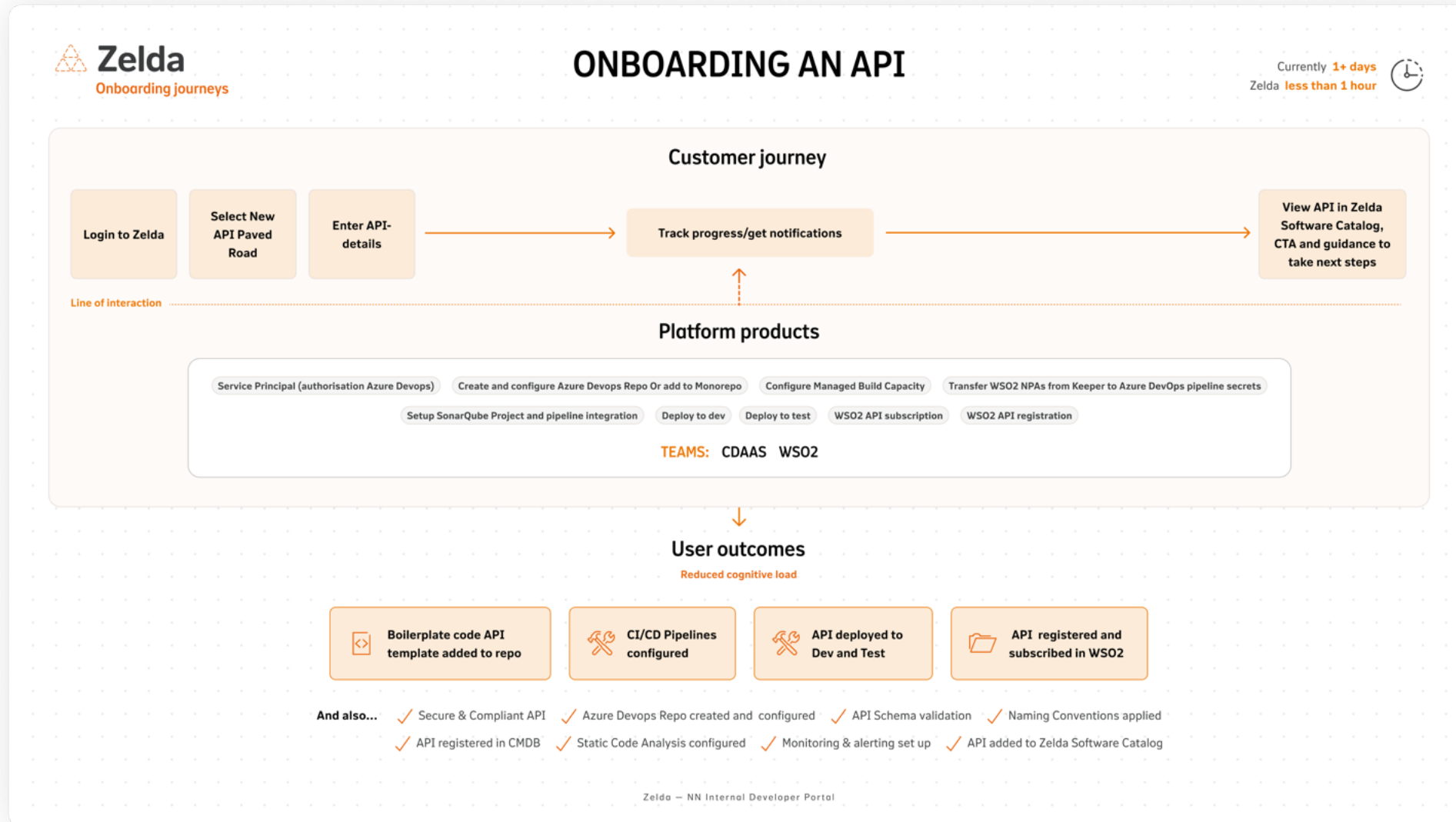
Phase	Step 1	Step 2	Step 3	Step 4	Phase	Step 5	Step 6	Step 7	Step 8	Step 9
Layer 1	White	Black	Black	White	White	White	Black	White	Black	
Layer 2	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue
Layer 3	Green	Green	Green	Green	Green	Grey	Green	Green	Green	Green
Layer 4	Grey	Pink	Pink	Green	Green	Orange	Pink	Green	Pink	Pink
Layer 5	Grey	Grey	Grey	Pink	Pink	Purple	Grey	Pink	Pink	Grey
Layer 6	Red	Orange	Red	Grey	Pink	Yellow	Grey	Grey	Grey	Orange
Layer 7	Yellow	Red	Yellow	Orange	Grey	Cyan	Orange	Red	Red	Red
Layer 8	Cyan	Yellow	Yellow	Red	Red		Red	Purple	Yellow	Yellow
Layer 9		Purple	Purple	Purple	Yellow		Red	Cyan	Purple	Purple
Layer 10		Purple	Cyan	Purple	Purple		Yellow			Purple
Layer 11		Cyan		Cyan			Purple			Cyan
Layer 12							Cyan			

Time									Seconds		
Step (invisible)	Login with SSO	Paved Roads Section	'New API' Paved Road	Gather data	Create new API flow	Validate "Create new API" flow fields	Validate uploaded OpenAPI schema	Service Principal (authorisation Azure Devops)	Create and configure Azure Devops Repo Or add to Monorepo	Repo created	Boilerplate
Touchpoint	Zelda	Zelda	Zelda	Zelda	Zelda	Zelda	Zelda			Zelda	
Platform Product	Active Directory Domain Services			Zelda Software CatalogZelda Templates	Zelda TemplatesZelda Composer	Zelda ComposerWSO2	Zelda Composer	Zelda Composer	CI/CD pipeline based on Azure DevOpsZelda Composer		Zelda Template
Implementation				Postgres database		WSO2	Stoplight Spectral		Restful API		
Platform Team				Team Zelda	Team Zelda	Team ZeldaWSO2	Team Zelda	CDAAS	Team ZeldaCDAAS		
Policy							OpenAPI schema should be valid, otherwise allow to continue with boilerplate schema				TPAB: Mainstream templates must be approved
Gap					API naming and route convention			Platform product is unknown (check with Hylke)			
Notes				Check with Hylke: Team administration AP-Code is a prerequisite	User optionally uploads OpenAPI schema (to override boilerplate) API name, version, and route (the url / WSO2 context)	Check if name and route exists in WSO2 Suggest another name if the name already exists	Embed errors from schema validator / linter re-upload schema or continue with boilerplate schema	Composers identity should be able "to act on behalf of the team", which should be opt-in and/or can we build on top of what CDAAS has already built for this? opt-in can be arranged in the New Team Paved Road scope is purely to get access to azure devops repo	e.g. Branch policy		Is this step https://making.no/spaces/cloud/cdaas/

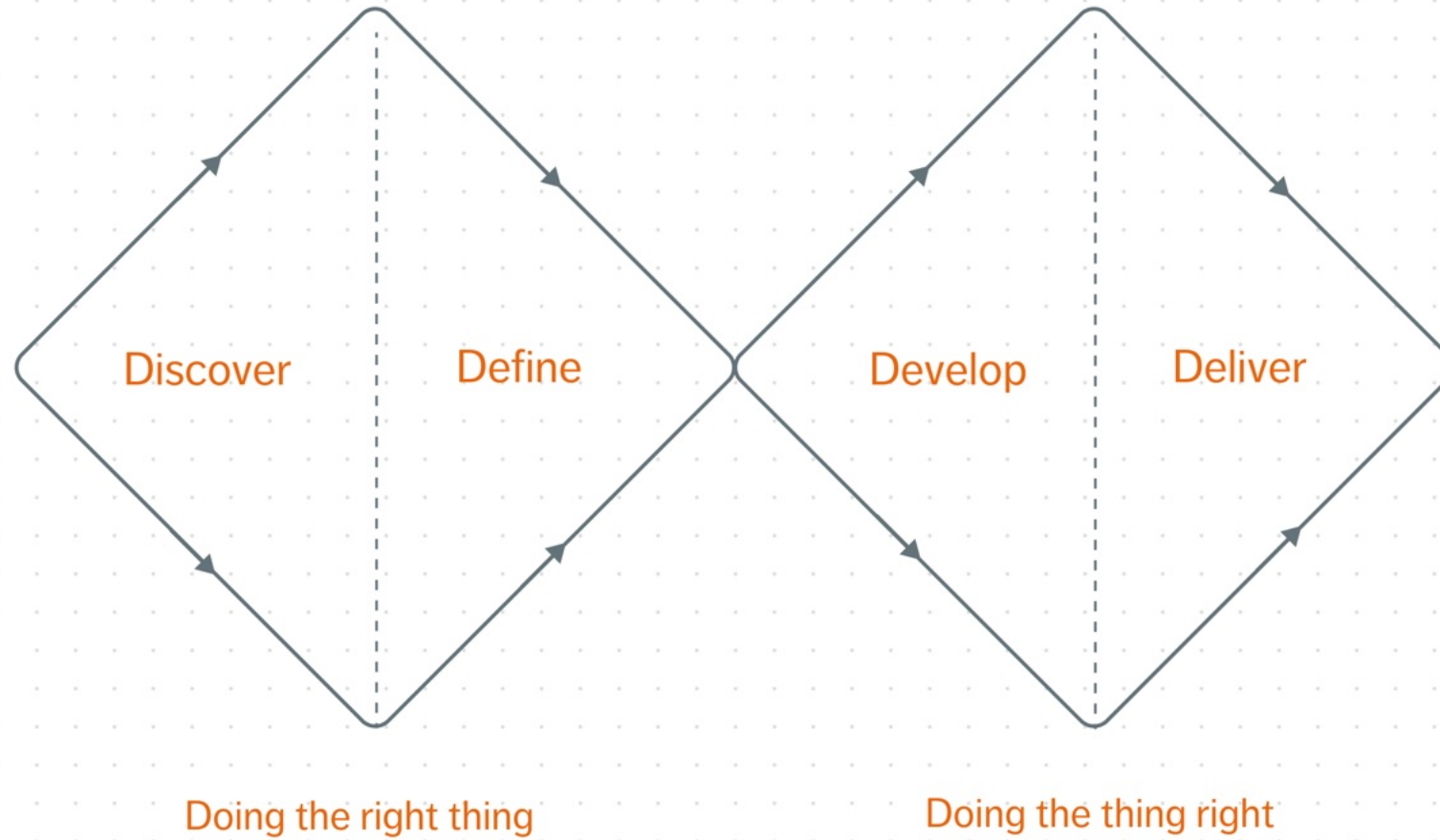
Our service blueprint

Doing	Following link from <ul style="list-style-type: none">SharepointMaker portalBookmark	Selecting Paved Roads Section	Selecting "Create New API"
Thinking	No separate login needed, nice	I want to make a new API. Is Paved Road what I should select?	Let's create an API
Feeling			
Time			
Step (invisible)	Login with SSO	Paved Roads Section	New API Paved Road
Touchpoint	Zenix	Zenix	Zenix
Platform Product	Active Directory Domain Services		
Implementation			

Product card: Onboarding a new API



Double Diamond Model



SUMMARY STORY 2

Flavia, je ziet het niet

(Flavia, you don't get it)

- ✓ Hiring our first UX designer – Michiel
- ✓ Service Blueprints to visualize the Customer Journey & Platform Products
- ✓ Using the Design Thinking toolbox to make the hidden un-hidden

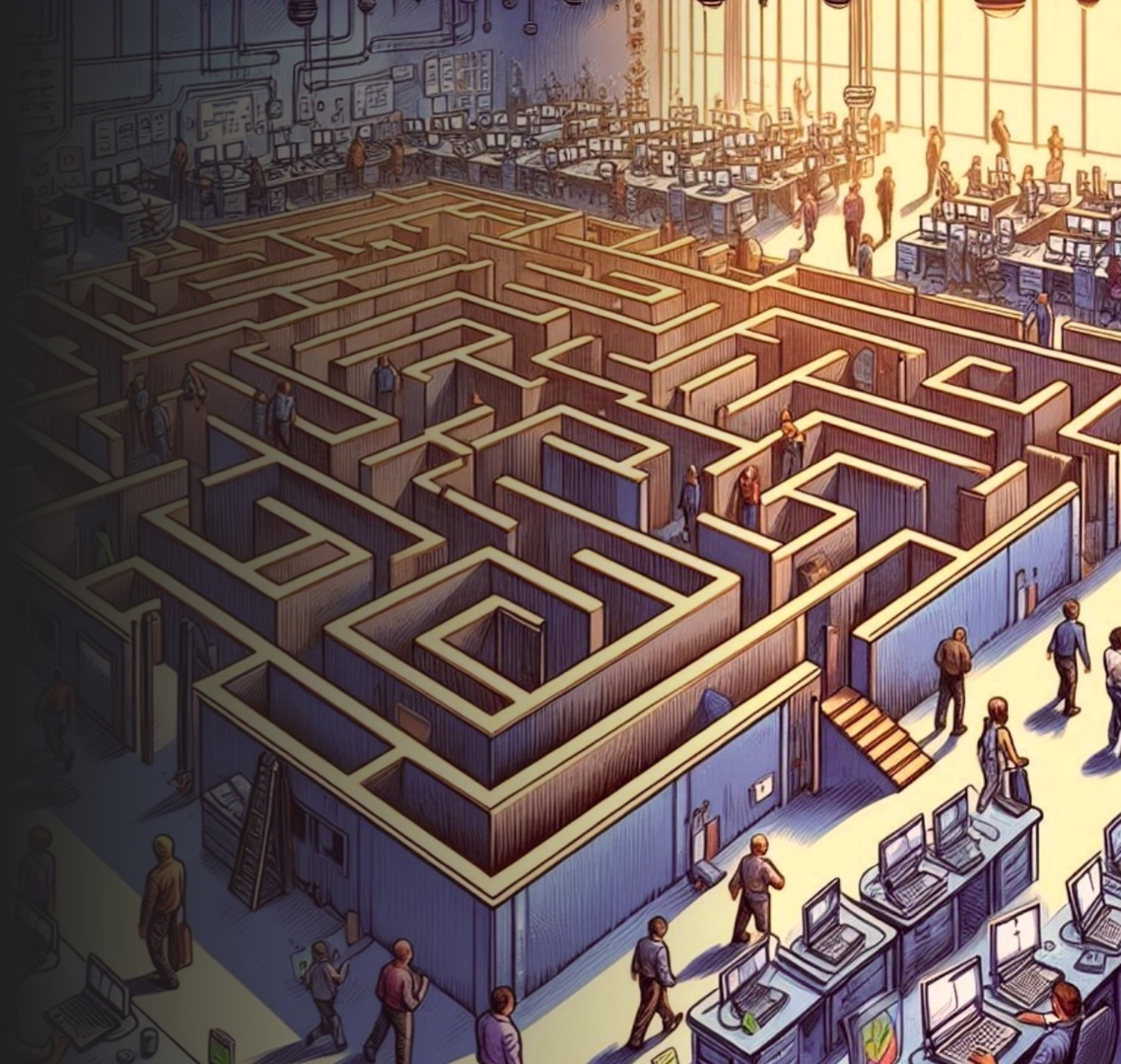


STORY 3



Casper, all we
need is an API to
get insurance data

— NN Non-life & Sparklab
(2020, NN before platform engineering)



BACKSTAGE

TOP 10 MISTAKES

YOU CAN PREVENT WITH

GENAI!!!

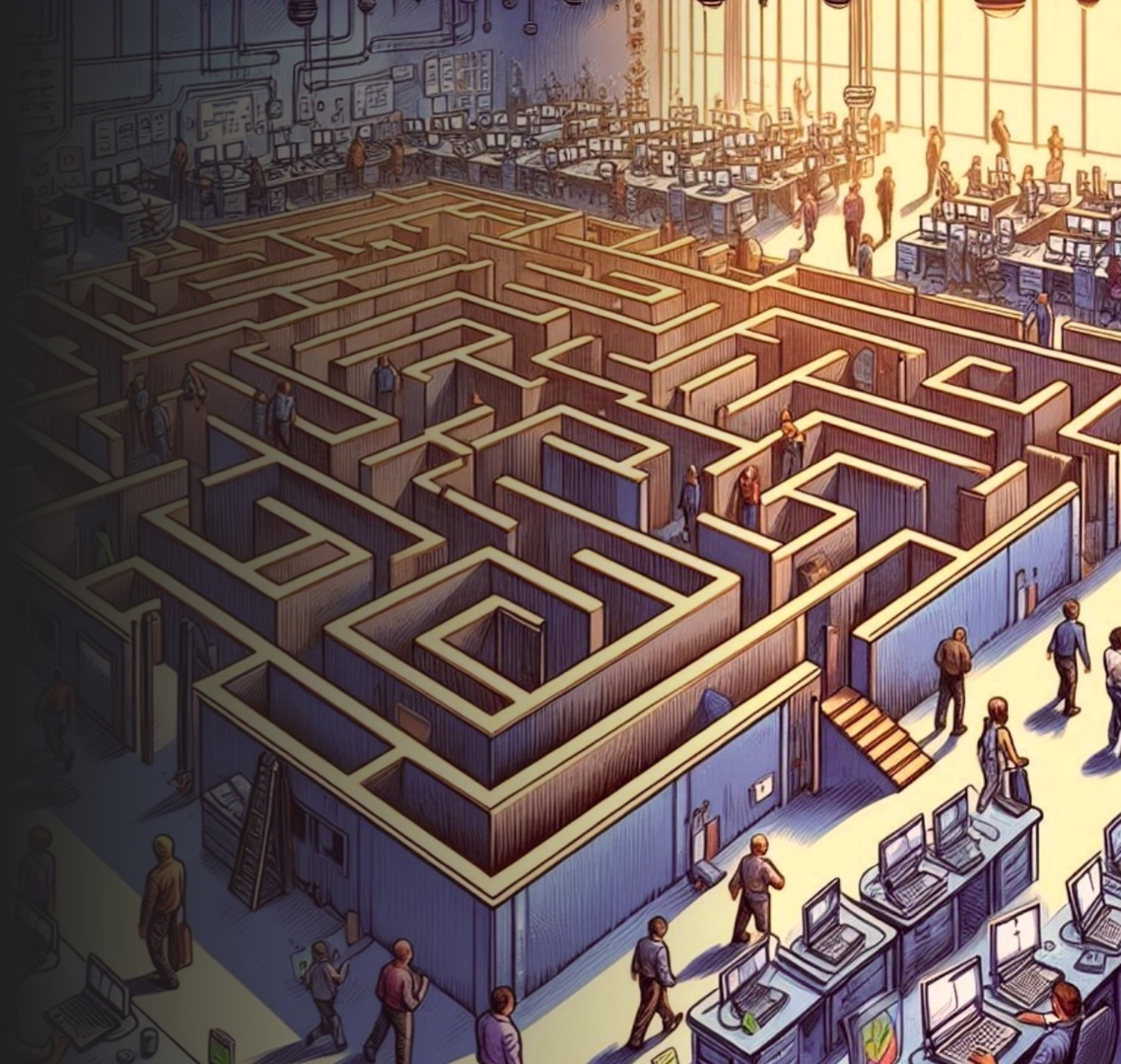


STORY 3



Casper, all we
need is an API to
get insurance data

— NN Non-life & Sparklab
(2020, NN before platform engineering)



”Rumour-Driven Development”

**How We Use Golden Paths to Solve Fragmentation
in Our Software Ecosystem**

Source: Spotify Engineering Blog by Gary Niemen (August 2020)

AI, AI and Platform Engineering

Gartner Hype Cycle for Software Engineering, November 2023

- **AI Coding Assistants** Gartner predicts that by 2027, 50% of enterprise software engineers will use ML-powered coding tools, up from fewer than 5% today.
- **AI-Augmented Software Engineering** This allows software engineers to focus their time, energy and creativity on high-value activities like feature development.
- **Platform Engineering** Platform engineering focuses on providing self-service tools, capabilities and processes that help platform users deliver business value, while managing cost and risk.

Spotify open sources **Backstage**

ThoughtWorks “platform engineering product teams” to adopt

First edition of **PlatformCon**

CNCF accepts **Backstage** as incubating project

Puppet “State of DevOps Platform Engineering Report”

Gartner Hype Cycle for Software Engineering

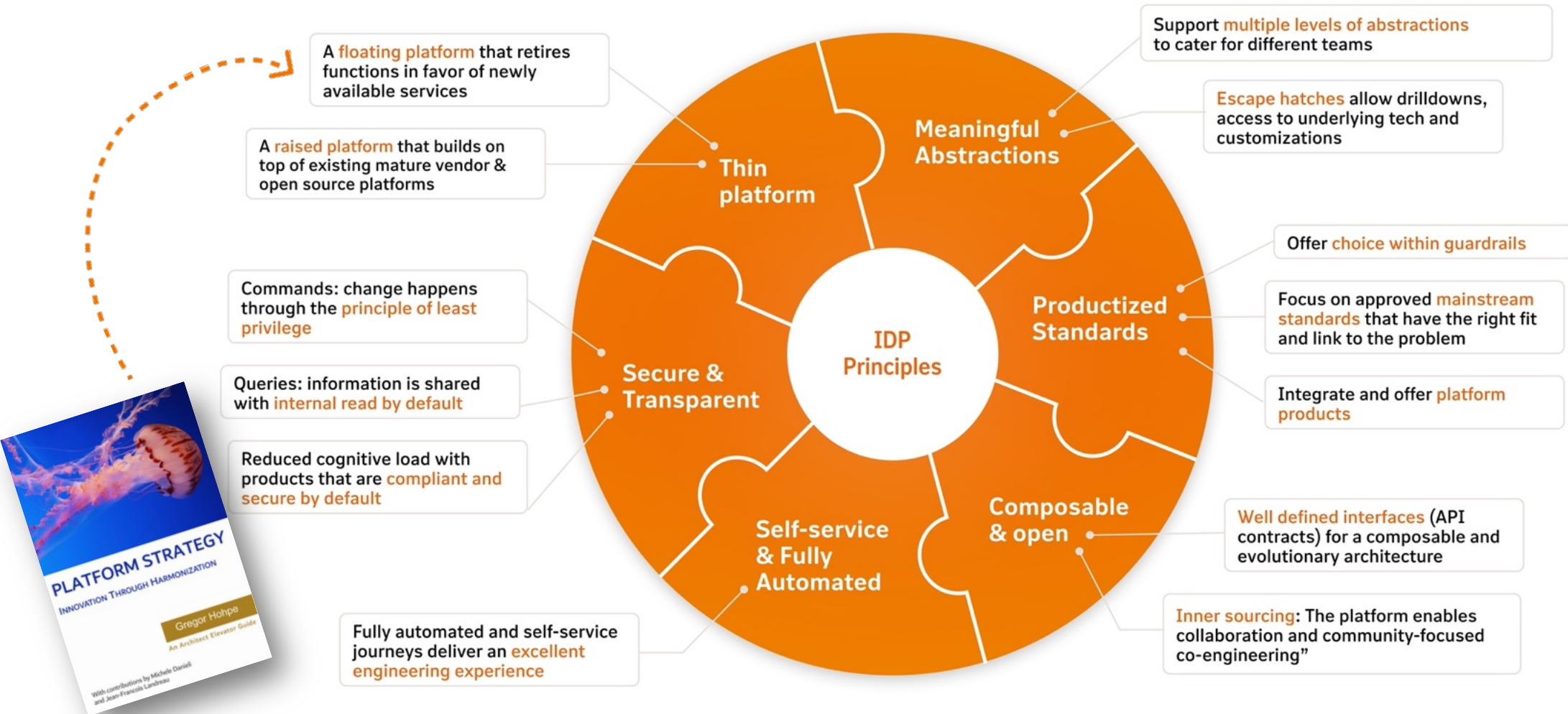


Our Platform Engineering Cookbook

Not a real book



Recipe 1: Define Principles





What the platform team
promised



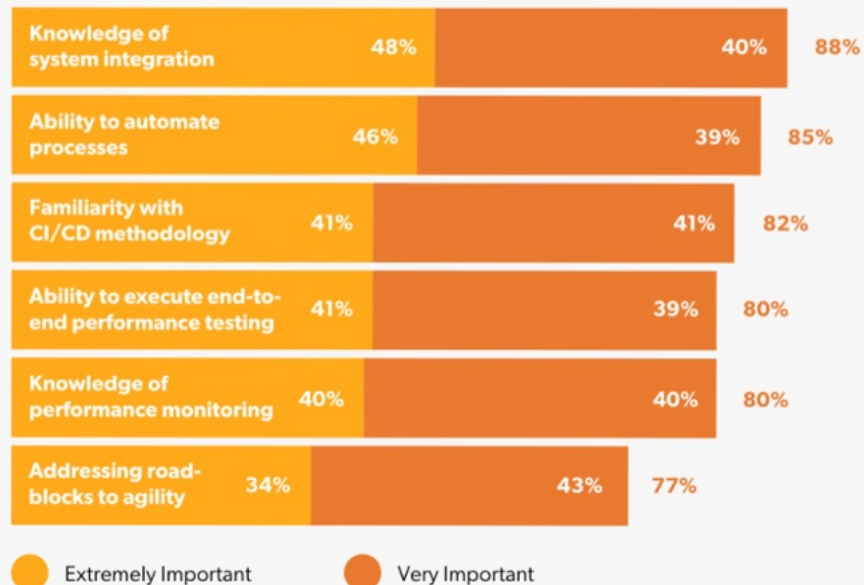
What the platform team
delivered

Source: Platform Strategy by Gregor Hohpe

Recipe 2: Hire the Right Engineers

PLATFORM TEAMS REQUIRE THE SKILLSET OF FULL-STACK DEVOPS ENGINEERS

How Important are These Skills for Building a Successful Platform Engineering Team?



2024 State of DevOps: The Evolution of Platform Engineering

Flavia Naezer (She/Her) • You
Product Owner Internal Developer Portal at NN | Strong Tech background...
4w • Edited •

Awesome product, ambitious mission and an amazing team. Come, join me & my team build the [#NN #IDP](#)

Platform Engineer Internal Developer Platform (Full Stack) | NN Group
nn-careers.com

Noortje Schravensande and 30 others
1 comment • 1 repost

Reactions

Like Comment Repost Send

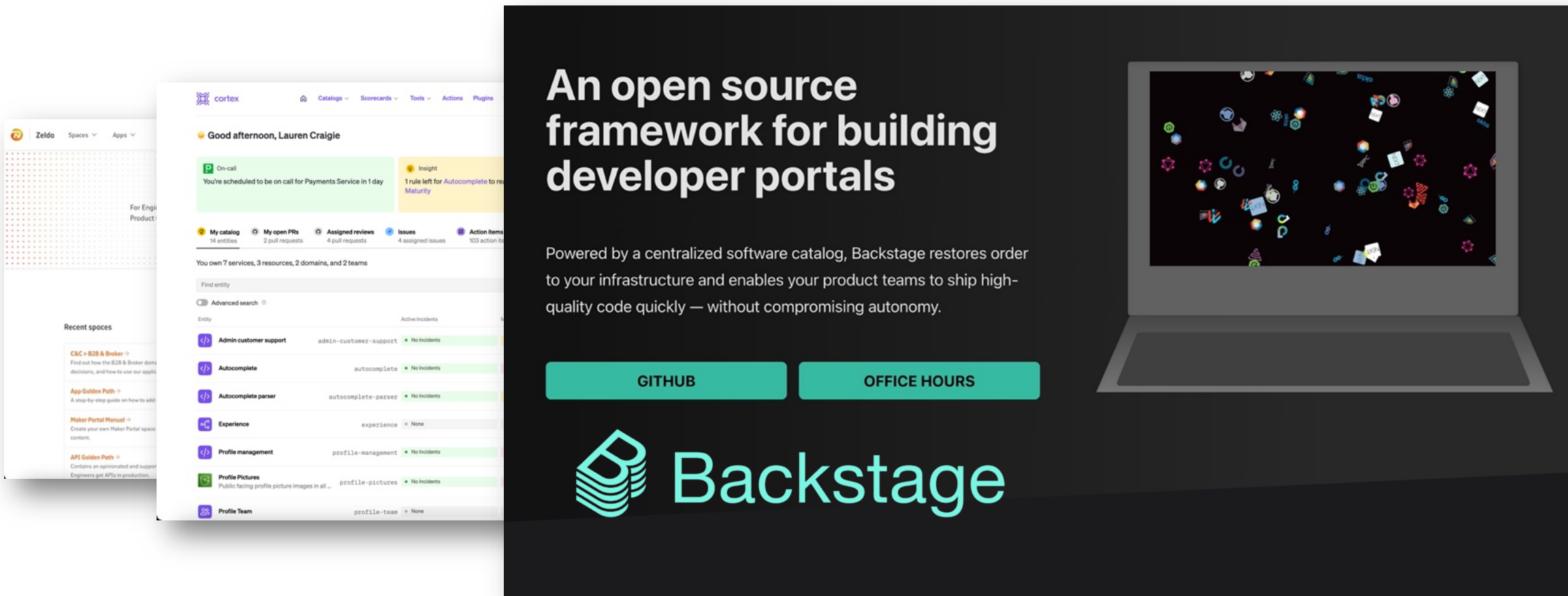
1,951 impressions [View analytics](#)

Add a comment...

Most relevant

Hylke Stapersma • 1st
Product owner CDaaS bij Nationale-Nederlanden
Great opportunity!
Love · 1 · Reply

Recipe 3: Do a Tech Assessment



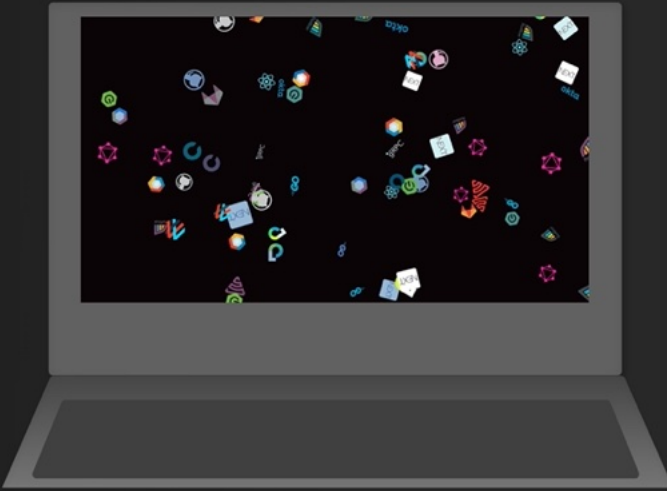
An open source framework for building developer portals

Powered by a centralized software catalog, Backstage restores order to your infrastructure and enables your product teams to ship high-quality code quickly — without compromising autonomy.

[GITHUB](#) [OFFICE HOURS](#)



Backstage



DIY

SAAS

Open Source Framework

Recipe 4: Get ready to read the Backstage code



Scaffold your backstage powered internal developer portal

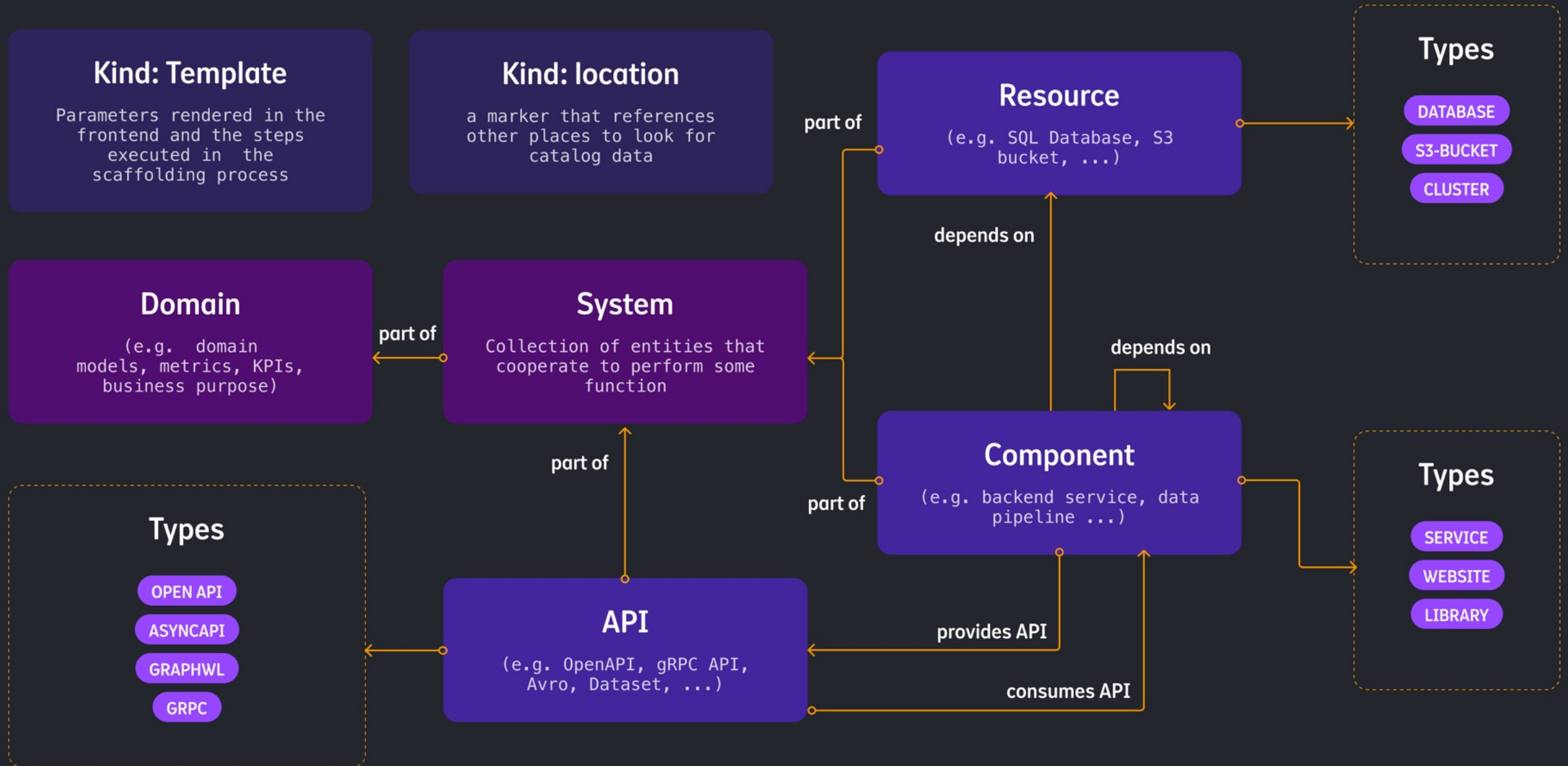
```
~/dev $ npx @backstage/create-app
```

Clone the backstage source code for reference

```
~/dev $ git clone https://github.com/backstage/backstage.git
```

```
~/dev $ git clone https://github.com/backstage/community-plugins.git
```


Recipe 5: Embrace the Backstage System Model



OwnedBy

OwnedOf



Types

OPEN API

ASYNCAPI

GRAPHWL

GRPC

Kind: Group

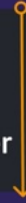
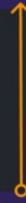
parentOf

childOf

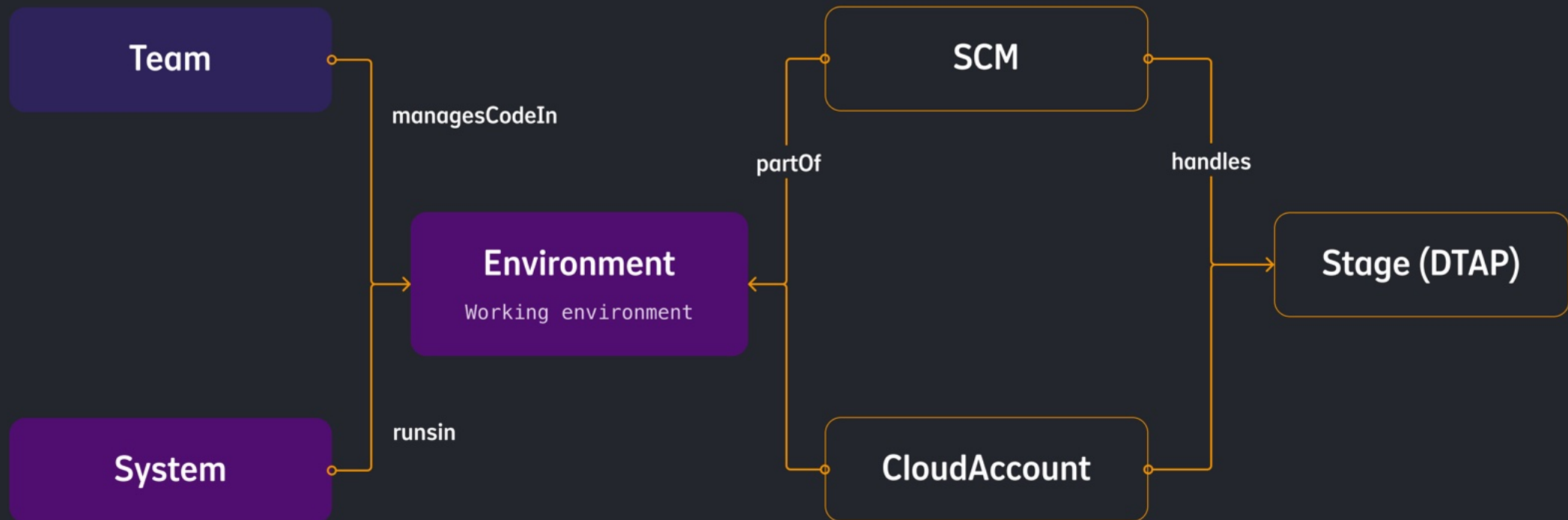
hasMember

MemberOf

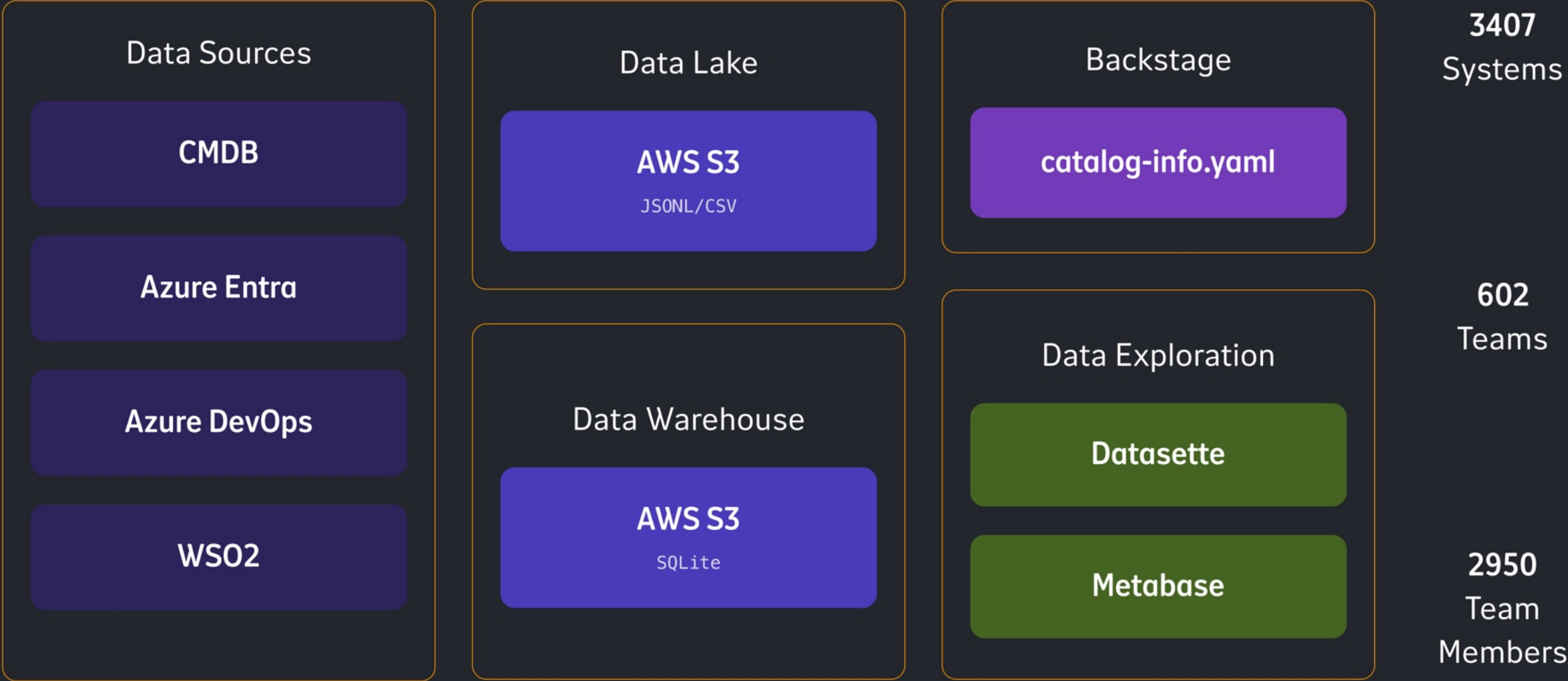
Kind: User



Recipe 6: Extend the Backstage System Model



Recipe 7: Local-first Engineering Datawarehouse



What the heck is Platform Engineering anyway?

“Platform engineering is an **emerging technology approach** that can accelerate the delivery of software and the management of infrastructure and the business value of the organization.”

DevOps

Gartner

DevOps is dead, long live Platform Engineering!

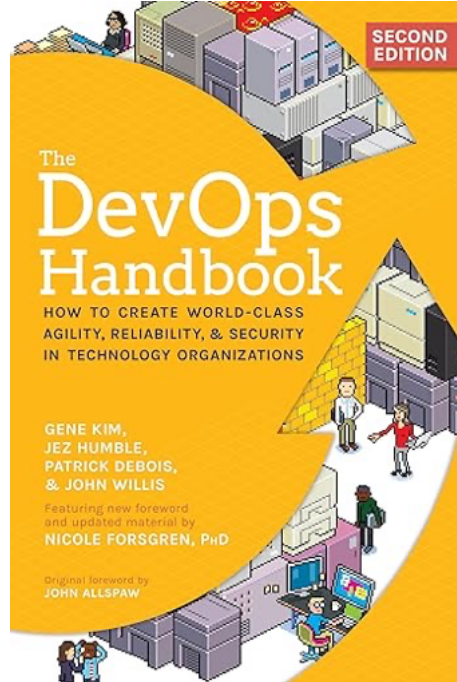
“The industry is moving from a focus on **support** to a focus on **platform** engineering. Platform engineering is a new way of thinking about infrastructure that can reduce operational complexity and improve time to market.”

Thoughtworks

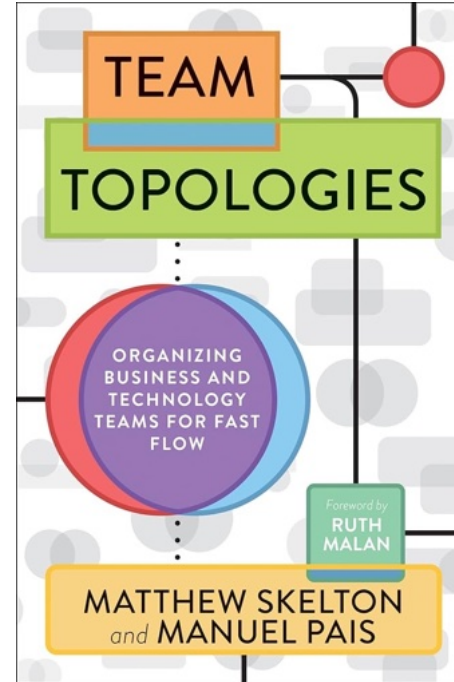
What the heck is Platform Engineering anyway?



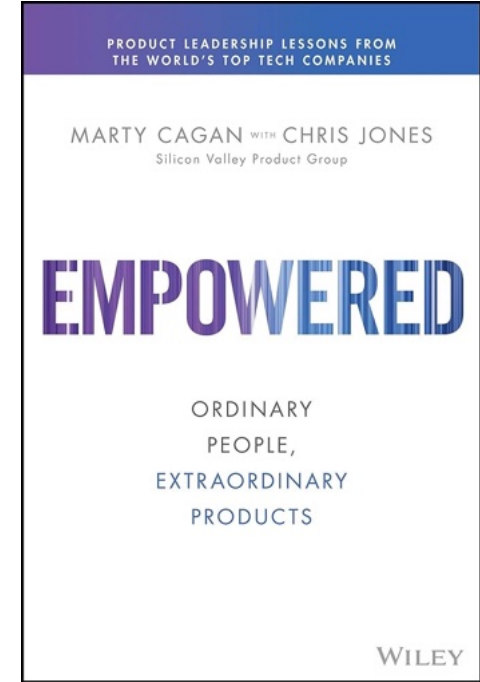
2006



2016



2019



2020

Platform engineering, in essence, is about building the right product that empowers ~~Casper~~ engineers in your stream-aligned teams.

This “Internal Developer Platform” commonly includes a developer portal, offers paved roads with templates and automated infrastructure. It offers tools to operate and optimize well-architected solutions.

SUMMARY STORY 3

‘Casper, all we need is an API to get insurance data’

- ✓ Platform engineering is an emerging field focused on creating an internal developer platform to solve important problems stream-aligned teams are running into
- ✓ Backstage is one of the tools in this field, helping you to create the face of your ID platform
- ✓ We talked about some recipes to help you when you venture into this field



3 months

Time wasted



TIME SAVED

3 months

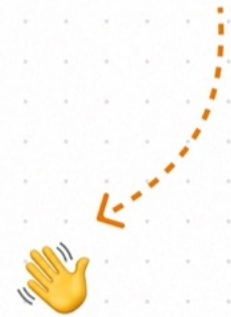


Thank you

Vijai Ramcharan
Principal Engineer

Flavia Naezer
Product Owner

Connect with
us on LinkedIn



& find us at the NN
Booth in the main hall