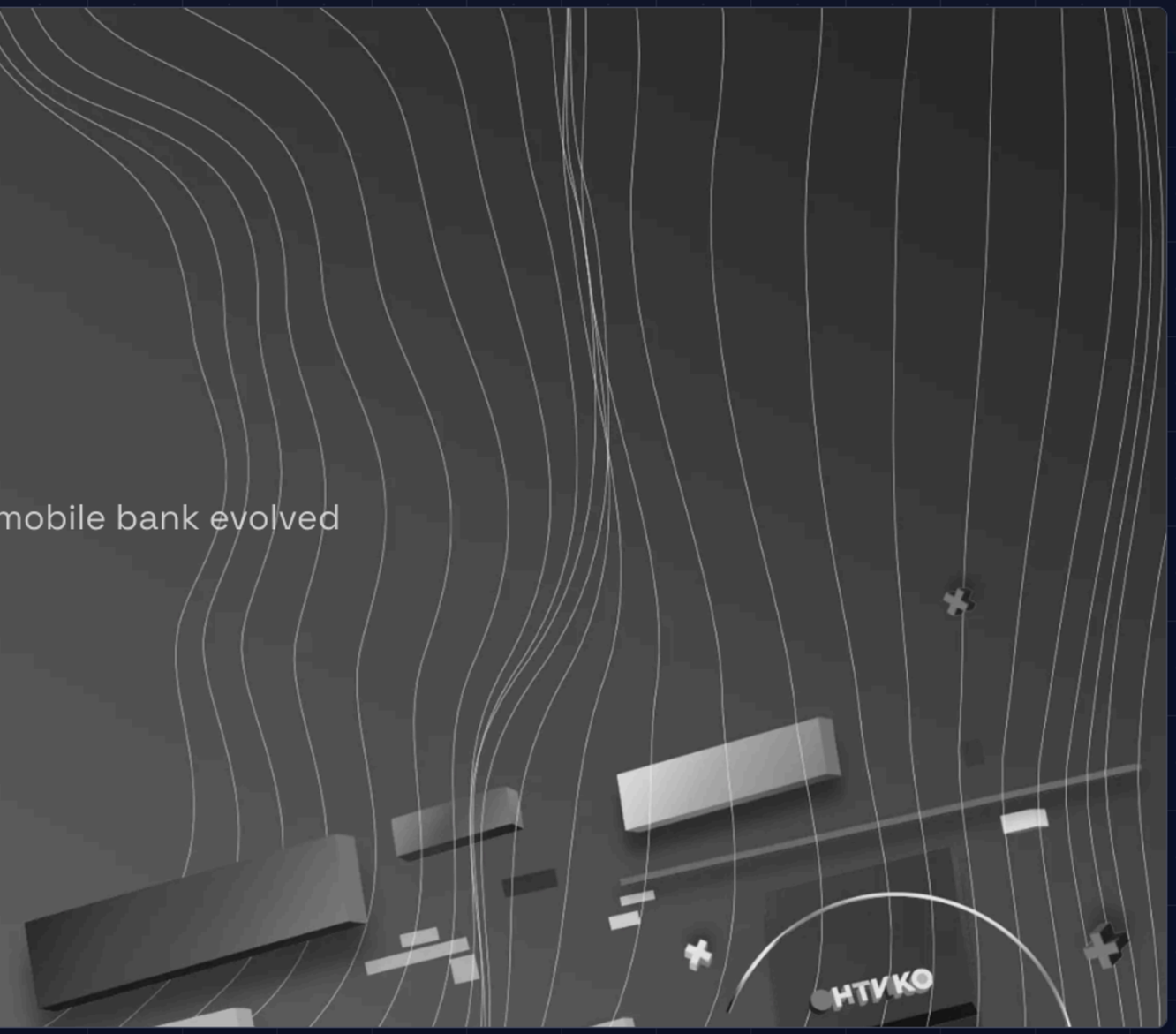
Saint HighLoad++ · September 22, 2022

Channel.
Product.
Platform.

How the approach to building Tinkoff's mobile bank evolved



HL++ 2022 Saint HighLoad++

Alexander Polomodov

Speaker Hello

CTO of the mobile bank, online acquisition and more

- I curate our System Design and Troubleshooting interviews

Audience Four questions

For anyone who has asked these questions

Who this talk is for

- Why scale development at all?
- How do you do it evolutionarily, without dropping business work?
- Which target topology should your teams aim for?
- How do you balance platform and product development?

Sixteen years in six milestones

Timeline 16 years

The mobile bank as channel, product and platform



Channel → product → platform → end-to-end team

Part 1

01

The mobile bank as a channel

2006–2011: from postal mail to the first app

2006 How it started

A branchless bank on the Capital One model

How it all started (2006)

- Credit cards only at the start
- Direct sales by postal mail
- Customer contact through call centres

The first version of the app was built by contractors

2011 Mobile bank

The mobile bank appears as an additional channel

- Basic services were picked for the launch
- The first version was built to order by contractors
- Requirements were written screen by screen
- Planning ran as app versions with scope fixed up front

Part 2

02

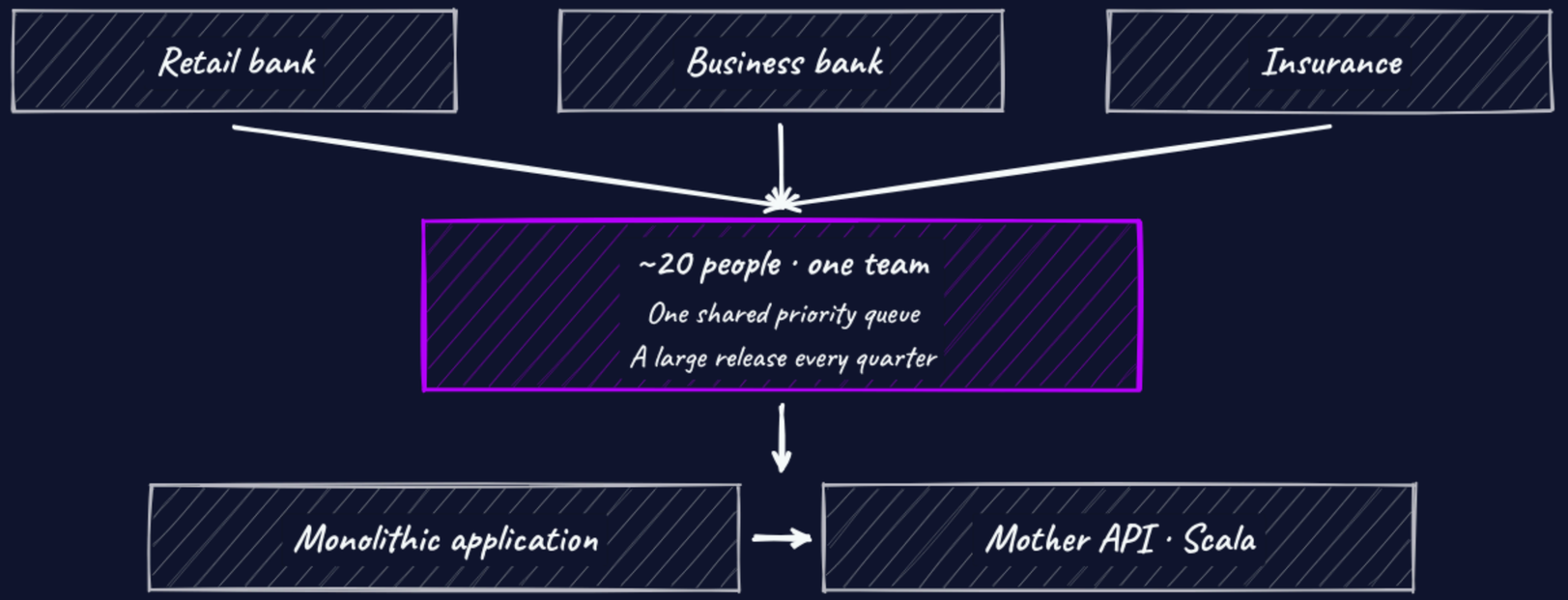
The mobile bank as a product

2015: development moved in-house

2015 Product

One team of twenty for three customers

The mobile bank as a product



This worked — and here is why

While there are few products and the team is small

- There were a few main products taking the resources
- The team was small — around 50 people by 2019
- Priorities could still be managed by hand
- The focus was on extending functionality

Part 3

03

The mobile bank as a platform

2019: verticals, teams and architecture

Ecosystem 2019

A monoline bank grew into a set of verticals

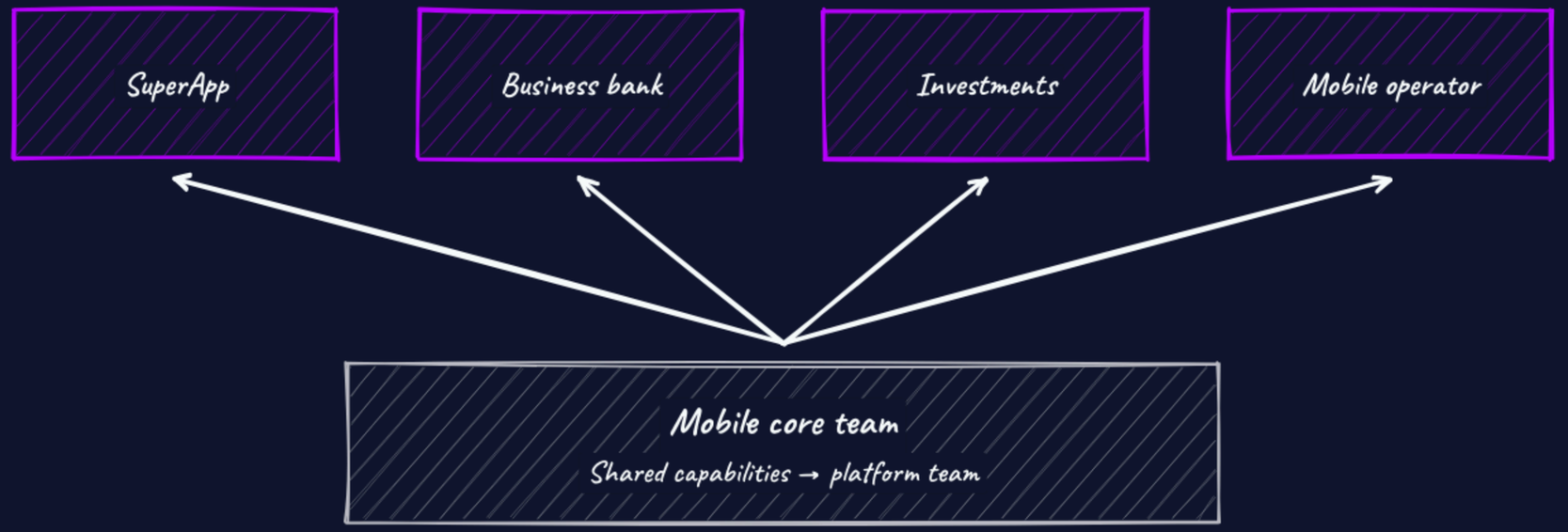
The group's growth and the IT landscape

- 2006–2019: from monoline bank to SuperApp
- Verticals: retail, SME, investments, insurance
- …the mobile operator and non-financial services
- And platforms: data, ML, origination, infrastructure

Several apps now, and still one core team

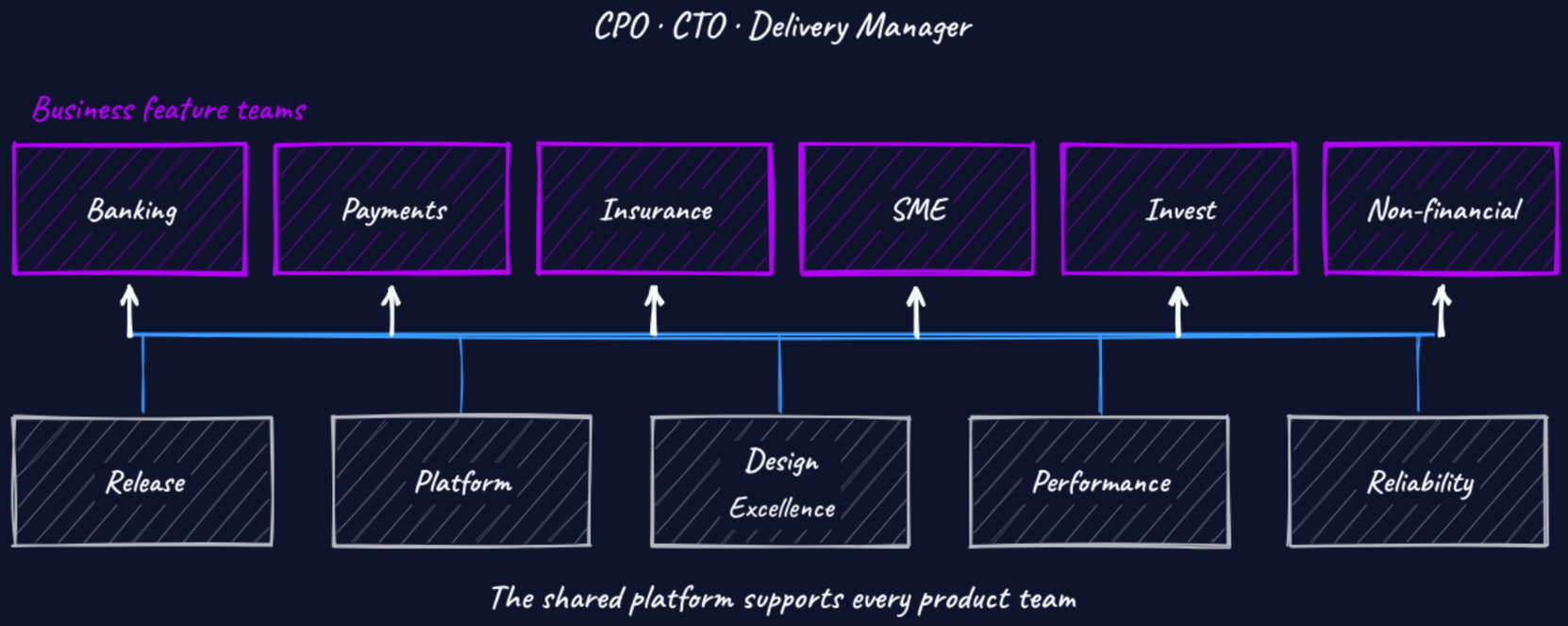
Apps Core team

Different apps and a shared core team



Six business teams and five platform teams

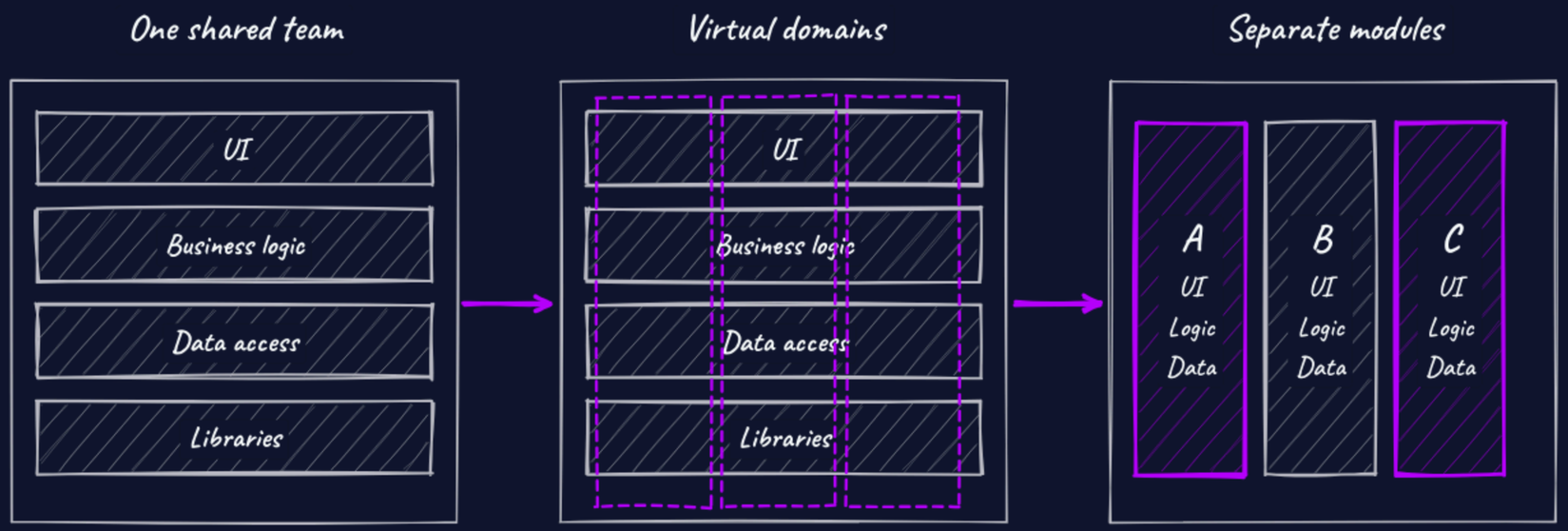
The new team structure



Change the teams and you change the architecture

Architecture Conway's law

Three states of the same diagram

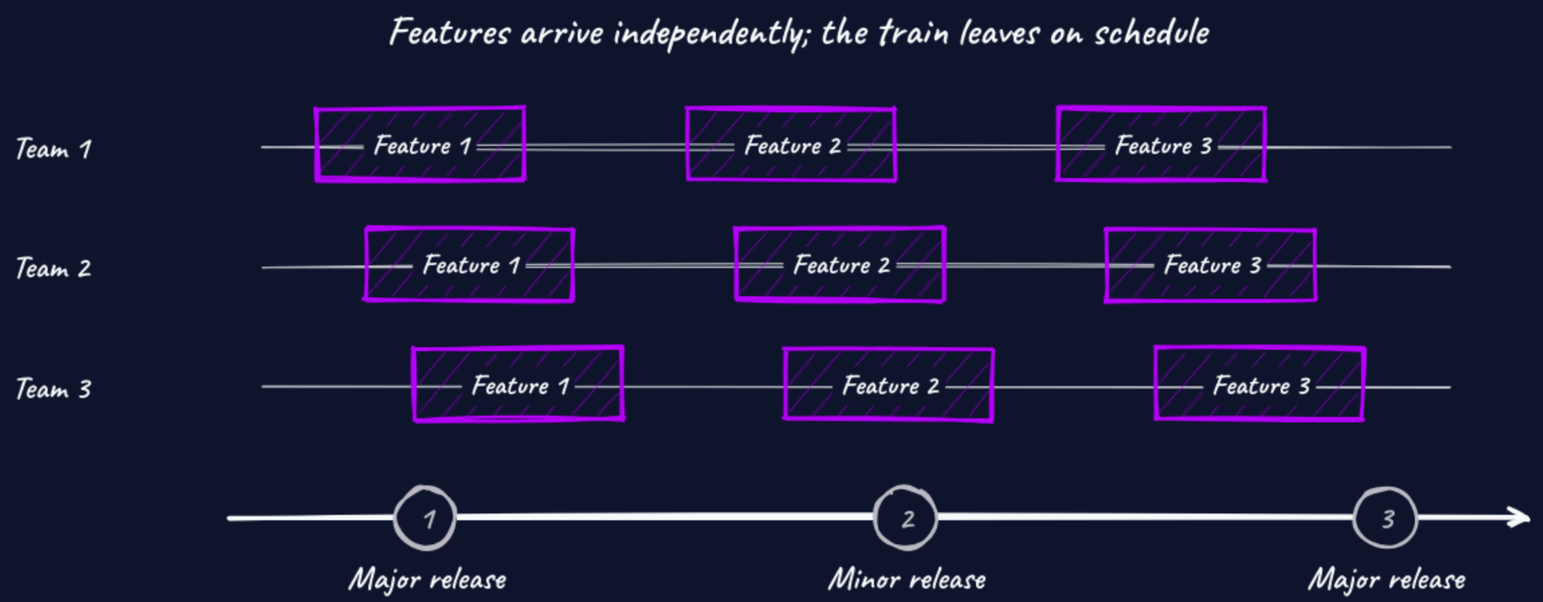


Evolve the existing system while continuing to ship features

Releases are tied to dates, not to scope

Process Release trains

Release trains and the engineering culture



Large releases every four weeks

Interim results

- Plus smaller releases in between
- Processes documented, owned by the team and the DM
- Platform teams rolled out modularisation
- Set up mobile SRE and optimised performance

Part 4

04

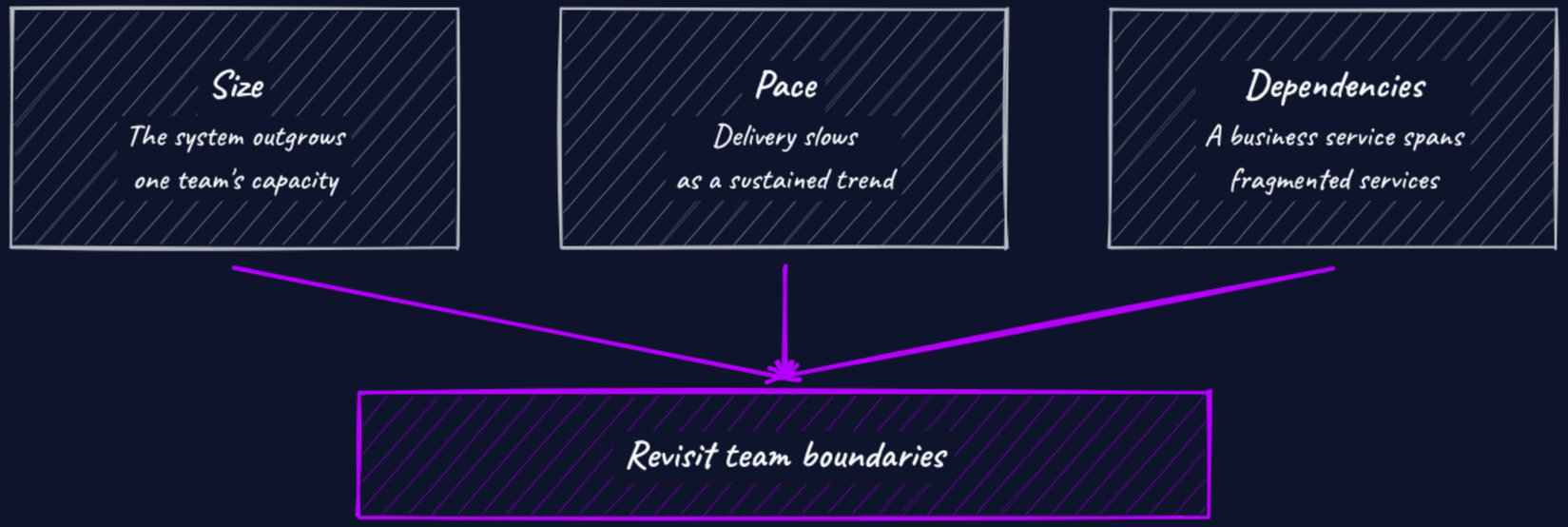
So what next?

2022: end-to-end delivery and governance

Triggers Team Topologies

Three triggers that it is time to change the teams

The business wants better end-to-end value delivery

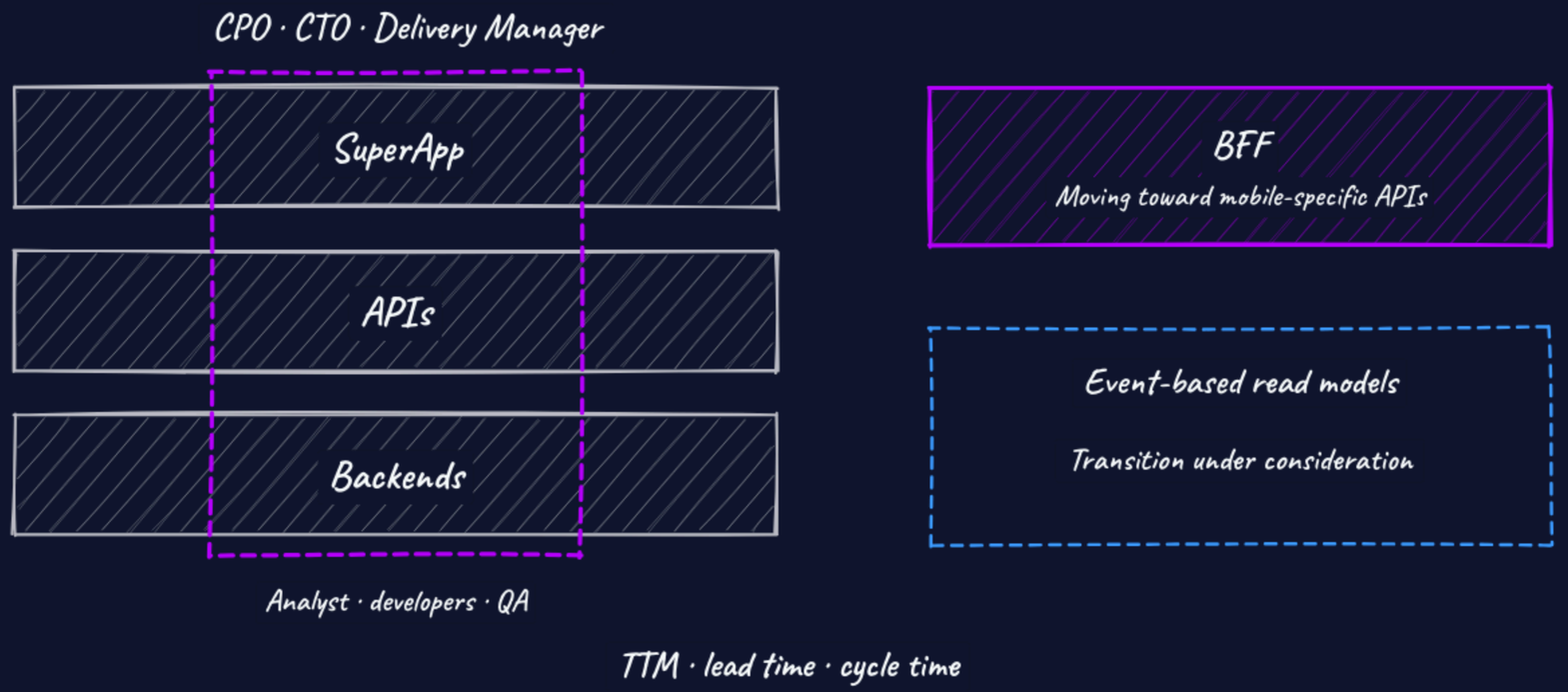


The end-to-end process runs through a delivery manager

Teams spanning SuperApp, APIs and Backends

Cross-cutting teams

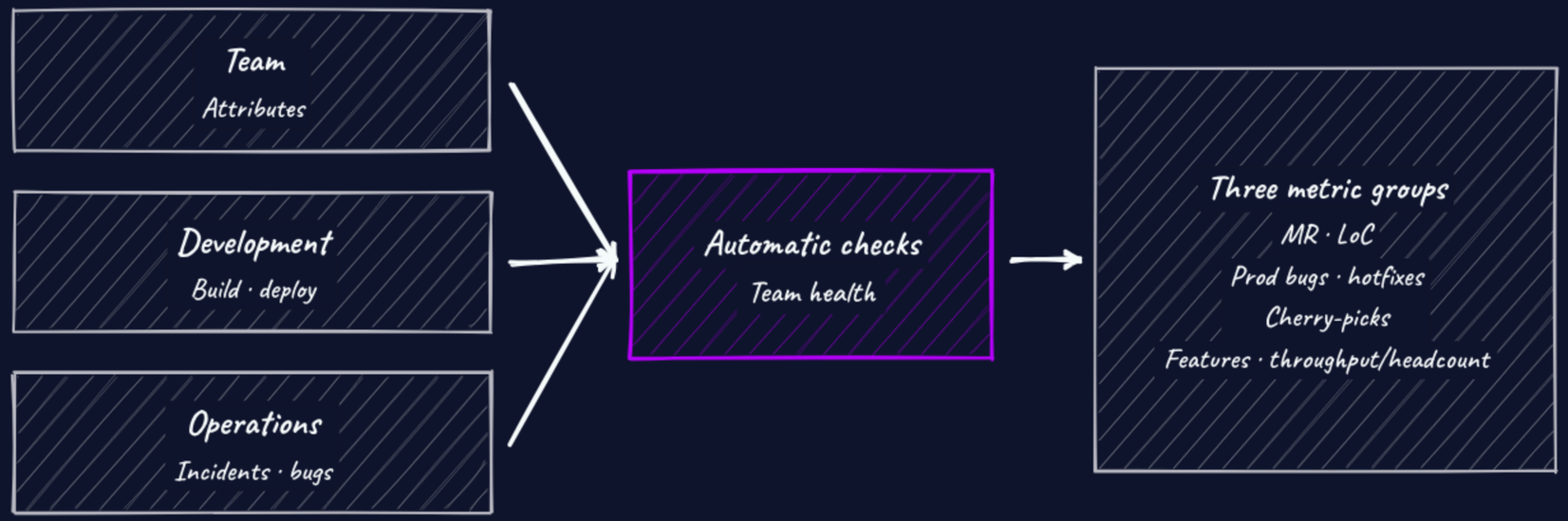
Delivery Manager



Governance Rules and metrics

The rules check themselves automatically

Platform technical governance



Shared rules support team autonomy

Part 5

05

Wrap-up

The questions I promised to answer

Wrap-up Answers

From a startup to a SuperApp team of ~400 engineers

The questions I promised to answer

- At the start there was no in-house mobile development at all
- The app became an advantage — development moved in-house
- Products multiplied — a platform became necessary
- Cross-cutting teams demanded technical governance
- Take this experience and map it onto your own situation

- Why scale, how to do it evolutionarily, which topology, and how to balance platform against product

Materials for further study

Materials Further study

From the talk’s closing slide

- The written version of the talk — ↗bit.ly
- All recommended materials are listed at the end of the article

polomodov.tech

Thank you!

All slides and links are in the Telegram channel

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