Business Track

De kracht van Platform Engineering

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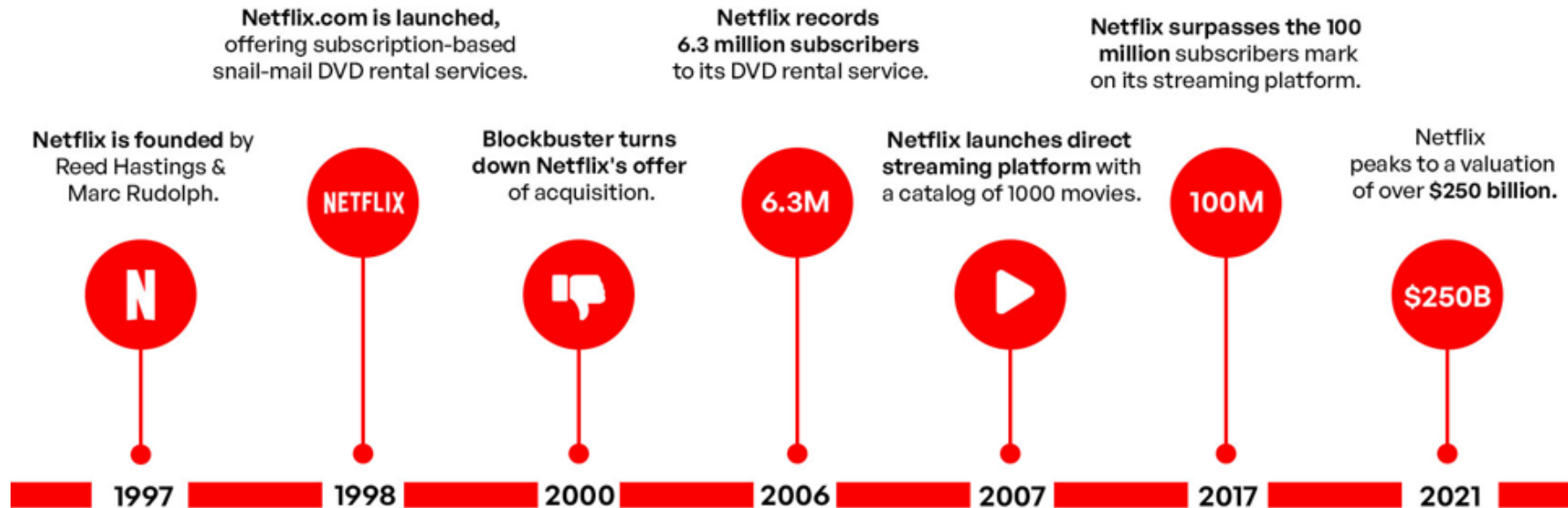
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AGENDA

- Introduction

- Accelerating Digital Transformation with Platform Engineering

- What is platform engineering?

- Pillars of Platform Engineering

- Fundamentals of Platform Engineering

- Stages of platform engineering

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Introduction

Case study Netflix: Netflix started with offering subscription-based snail-mail DVD rental services in 1998. In 2007 they started with their streaming platform.

Netflix.com is launched, offering subscription-based snail-mail DVD rental services.

Netflix records 6.3 million subscribers to its DVD rental service.

Netflix surpasses the 100 million subscribers mark on its streaming platform.

Netflix is founded by Reed Hastings & Marc Rudolph.

NETFLIX

Blockbuster turns down Netflix's offer of acquisition.

6.3M

Netflix launches direct streaming platform with a catalog of 1000 movies.

100M

Netflix peaks to a valuation of over $250 billion.

$250B

1997   1998   2000   2006   2007   2017   2021

Would Netflix still be a success if their streaming service did not come out in 2007 but later.

Would Netflix still be a success if they were part of a major data breach?

Would Netflix still be a success if the service would be not performant or unstable?

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Accelerating Digital Transformation with Platform Engineering

A digital transformation project is only succesful if it achieves its intended goals and aligns with the business objectives.

Success criteria should be both:
- Functional requirements as in the digital product resolves a problem for it's consumers
- Non-functional requirements as in the product is available when needed and it works in a performant and secure way.

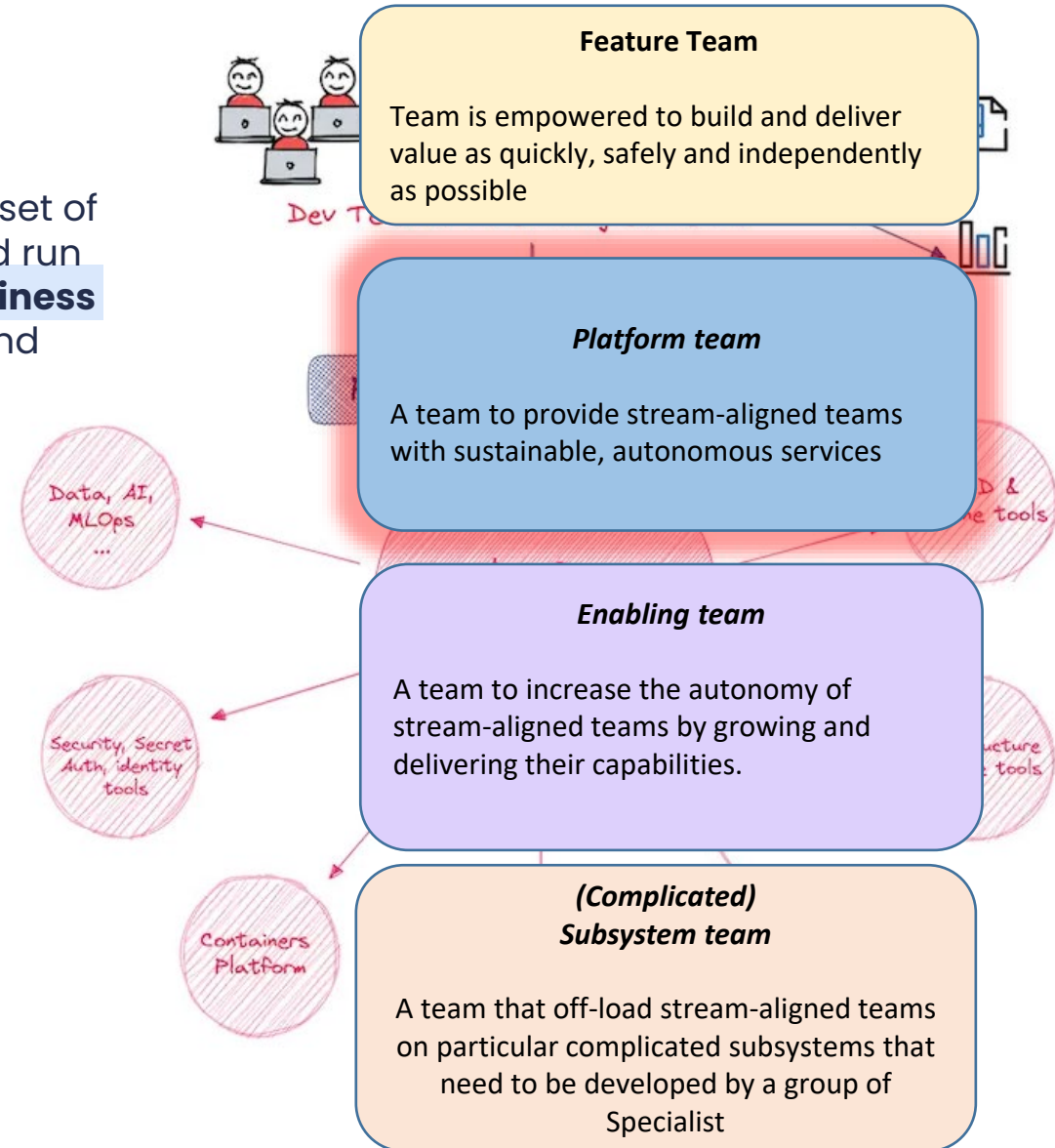**Platform engineering offers valuable benefits to organizations of any size.**

Functional Requirements		Non Functional Requirements		
Efficient Search Functionality	Rating System	High Availability	High Throughput	High Scalability

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What is Platform Engineering?

Definition

Platform engineering involves creating and maintaining a cohesive set of systems, tools, and processes that **enables other teams** to build and run reliable, scalable applications by keeping their **focus on adding business value.** It focuses on developing robust infrastructure, automation, and deployment pipelines.

Importance for the Organization

- Platform Team
  - War for talent
  - Reduce time to market
  - empowers teams to rapidly develop
  - cognitive load reduction for developers
- Scalability
- FinOps
- Reliability
- Performance
- Security & compliance
- Reduce time to market

Feature Team

Team is empowered to build and deliver value as quickly, safely and independently as possible

Platform team

A team to provide stream-aligned teams with sustainable, autonomous services

Enabling team

A team to increase the autonomy of stream-aligned teams by growing and delivering their capabilities.

(Complicated) Subsystem team

A team that off-load stream-aligned teams on particular complicated subsystems that need to be developed by a group of Specialist

Data, AI, MLOps ...

Security, Secret Auth, identity tools

Containers Platform

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Pillars of Platform Engineering

Scalability

It ensures the organization's ability to **scale efficiently** and **cost-effectively**, **accommodating** increases in user traffic and **business growth** while maintaining performance and reliability.

- Platform Team
- **Scalability**
- FinOps
- Reliability
- Performance
- Security & compliance
- Reduce time to market

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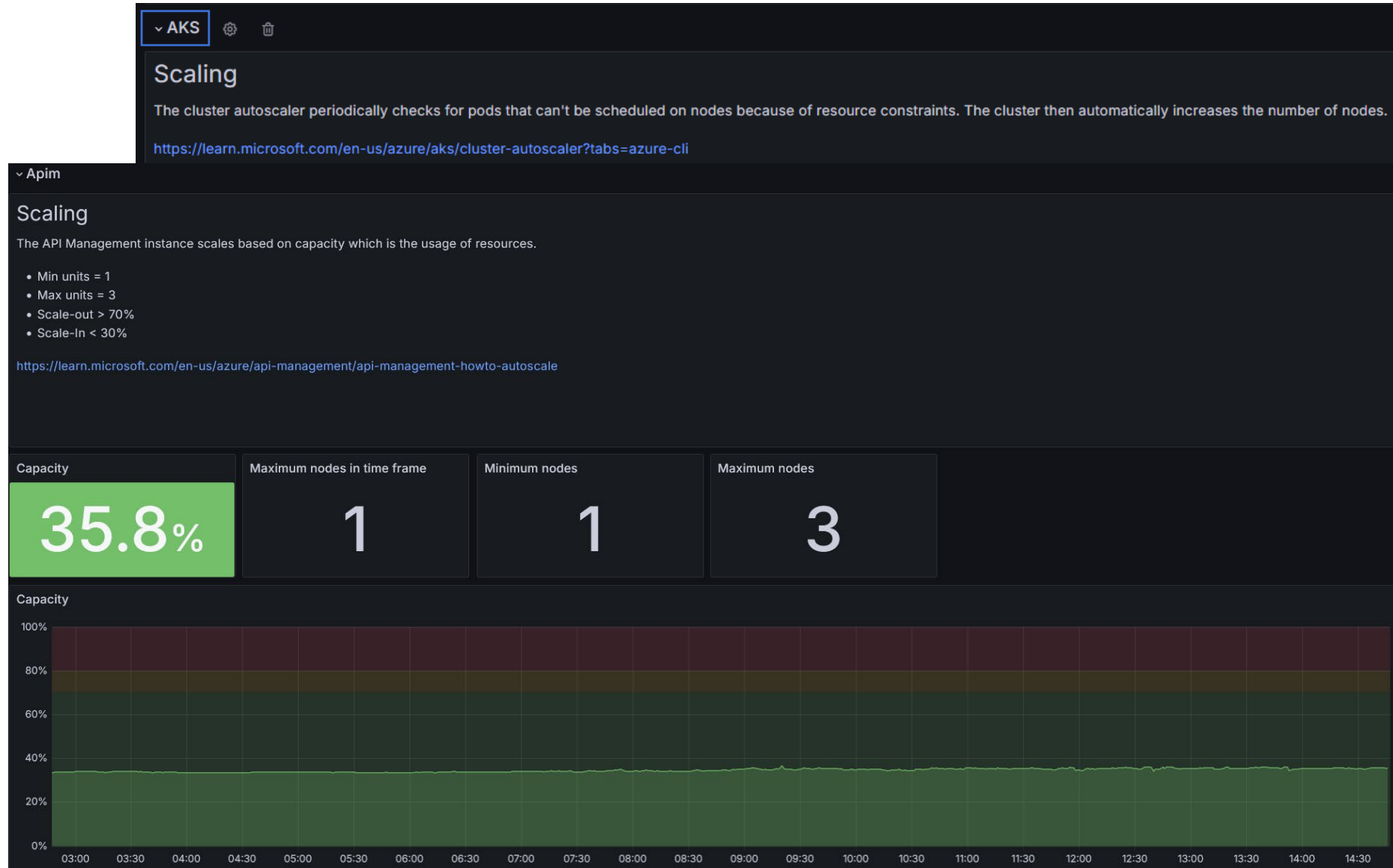
Pillars of Platform Engineering

FinOps

It promotes **financial accountability** in cloud usage, ensuring **cost optimization** and enabling **predictable cloud spending** through practices like budgeting, cost monitoring, and usage analysis.

- Platform Team
- Scalability
- **FinOps**
- Reliability
- Performance
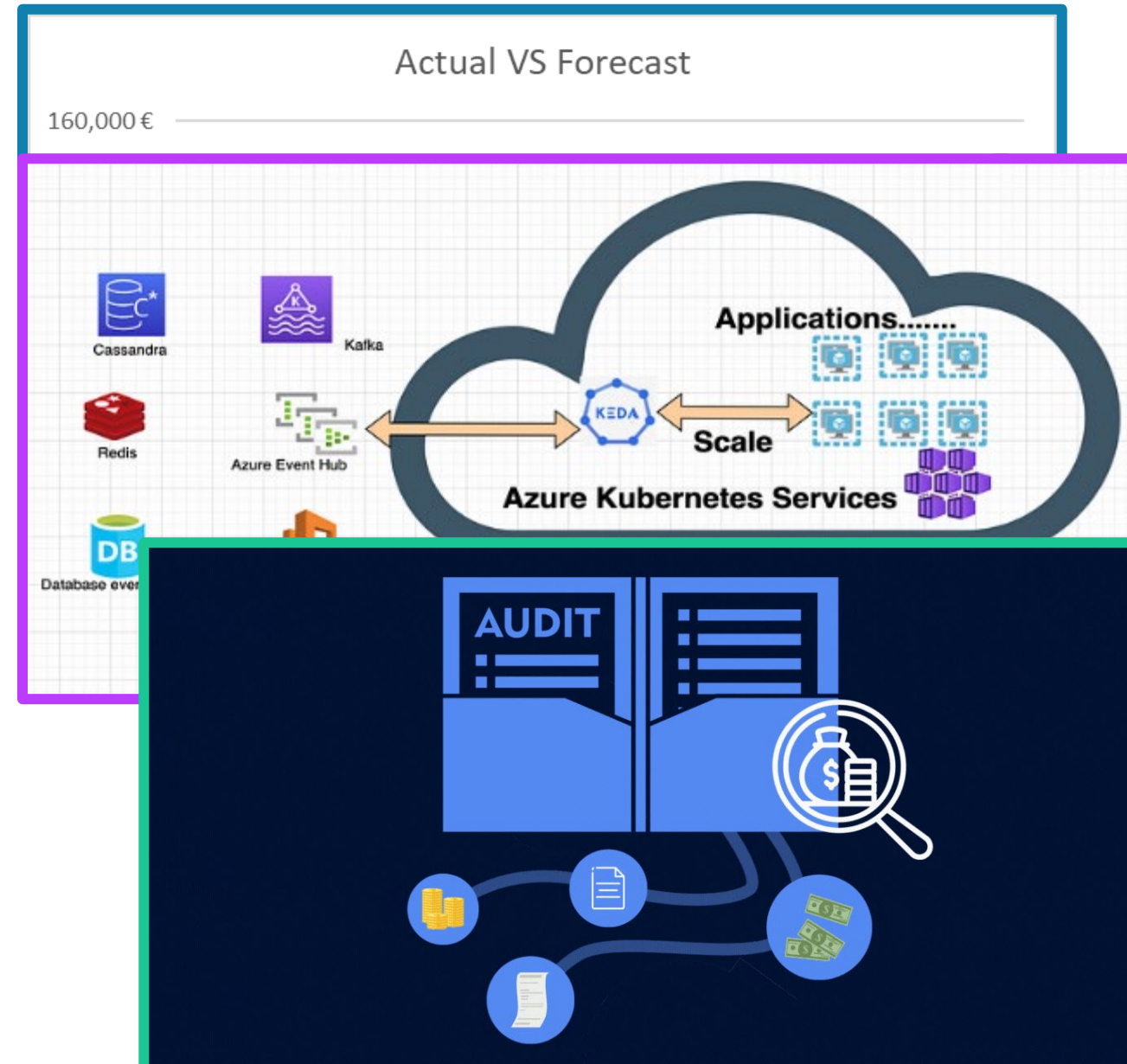- Security & compliance
- Reduce time to market

Inform | Optimize | Operate — FinOps

Inform:
- Gain visibility
- Understand usage
- Forecast

Optimize:
- Realise cost optimizations

Operate:
- Ensure the ongoing effort for Cost optimization

Actual VS Forecast

160,000 €

Cassandra · Kafka · Redis · Azure Event Hub · Database event · DB · KEDA · Scale · Applications....... · Azure Kubernetes Services

AUDIT

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Pillars of Platform Engineering

Reliability

It ensures the platform consistently delivers on its promises, **minimizing downtime** and disruptions through **robust infrastructure**, fault tolerance, and **proactive monitoring**. This is done by follow principles like **Design for failure**

- Platform Team
- Scalability
- FinOps
- **Reliability**
- Performance
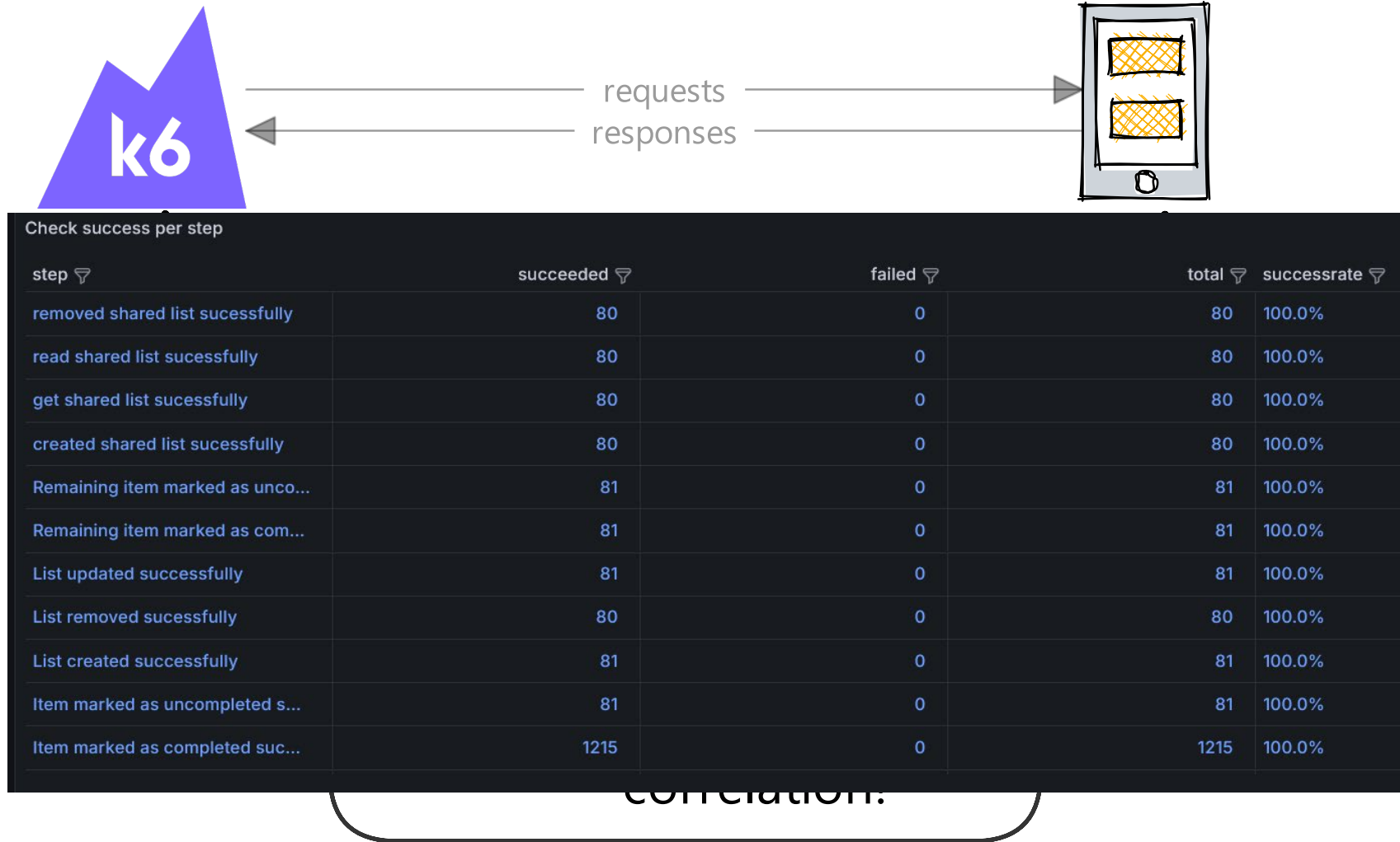- Security & compliance
- Reduce time to market
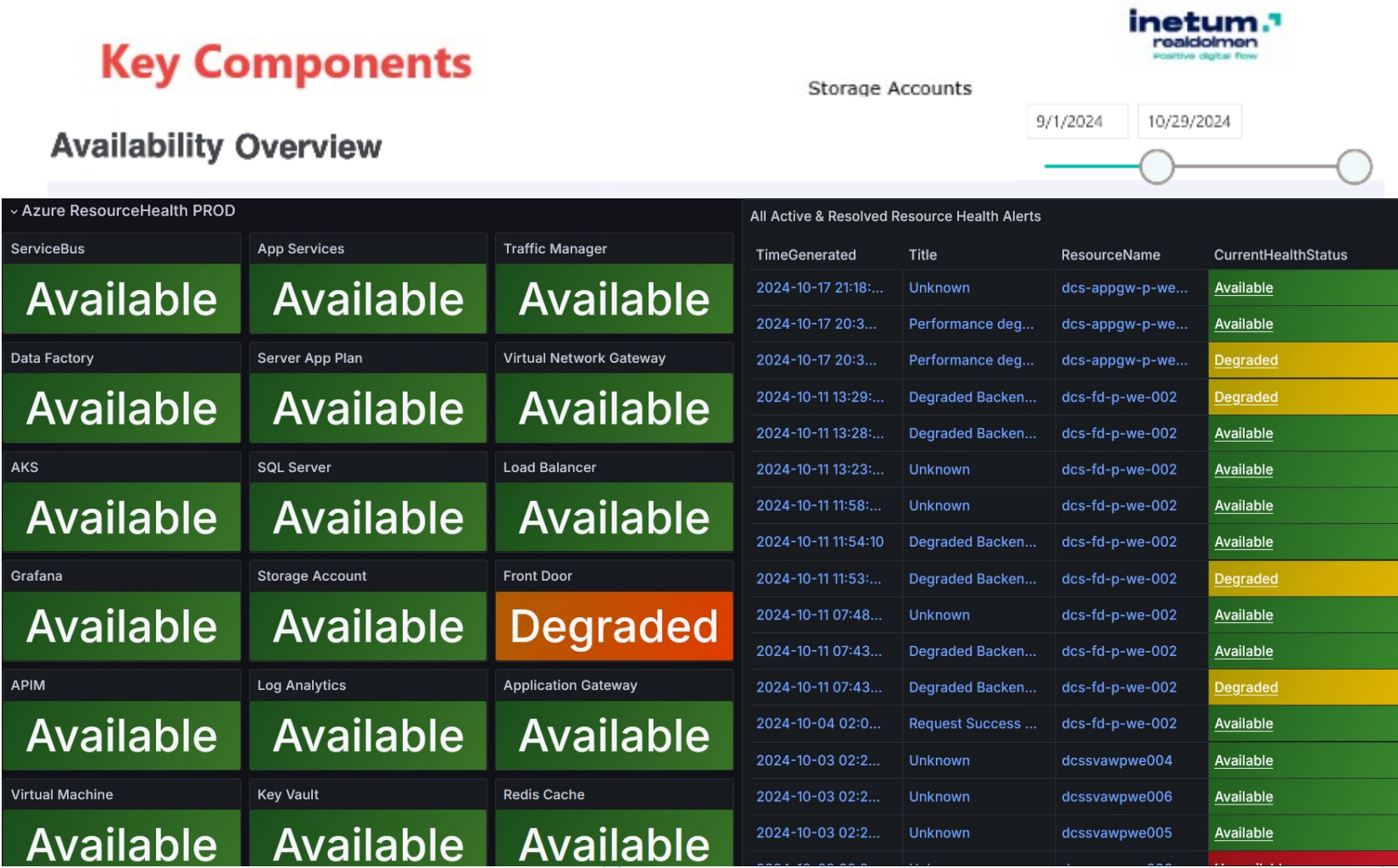
Pillars of Platform Engineering

Performance

A performant platform **responds quickly** to user requests, **efficiently** utilizes resources, and provides a **smooth and seamless user experience.**

- Platform Team
- Scalability
- FinOps
- Reliability
- **Performance**
- Security & compliance
- Reduce time to market

requests

responses

Check success per step

step	succeeded	failed	total	successrate
removed shared list sucessfully	80	0	80	100.0%
read shared list sucessfully	80	0	80	100.0%
get shared list sucessfully	80	0	80	100.0%
created shared list successfully	80	0	80	100.0%
Remaining item marked as unco...	81	0	81	100.0%
Remaining item marked as com...	81	0	81	100.0%
List updated successfully	81	0	81	100.0%
List removed sucessfully	80	0	80	100.0%
List created successfully	81	0	81	100.0%
Item marked as uncompleted s...	81	0	81	100.0%
Item marked as completed suc...	1215	0	1215	100.0%

correlation.

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Pillars of Platform Engineering

Security & compliance

Security & compliance **safeguards customer trust.** This is achieved **by ensuring data privacy**, **accuracy**, and **service accessibility**. This translates to peace of mind for customers, knowing their **information is safe**, transactions are reliable, and essential services are consistently available.

Platform engineering reinforces this by establishing **operational guardrails** for development teams. It provides the **necessary tools and processes** to adhere to these guardrails, while simultaneously **ensuring auditability and compliance** with **regulatory requirements** like NIS2.

CONFIDENTIALITY

CIA TRIAD

INTEGRITY   AVAILABILITY

CIS Azure Foundations v2.0.0 Compliance Report

CIS controls V8 Framework assessment

Standard best practices

36.00%
52.00%
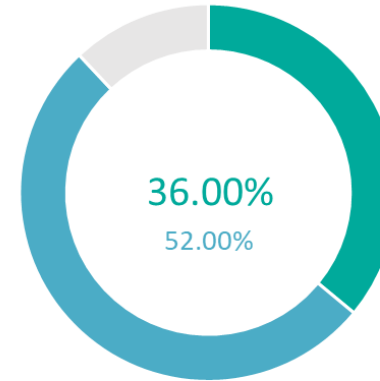
■ Implemented   ■ Partially implemented   ■ Not implemented

Advanced best practices *

24.56%
61.40%

■ Implemented   ■ Partially implemented   ■ Not implemented

Exe

Intro

Micros
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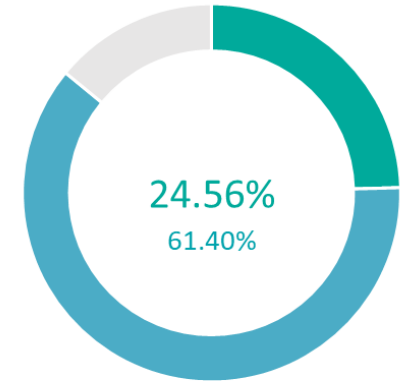
Premium best practices

26.32%
42.11%
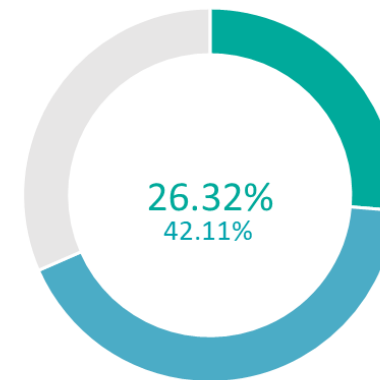
■ Implemented   ■ Partially implemented   ■ Not implemented

*Also works in Multicloud, Hybrid or other environments

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Pillars of Platform Engineering

Reduce time to market

Reduced time to market means launching products faster by **automating tasks**, **streamlining processes**, providing teams with **self-service scripts** and gaining a competitive edge through **rapid innovation** and **quicker delivery**.

- Platform Team
- Scalability
- FinOps
- Reliability
- Performance
- Security & compliance
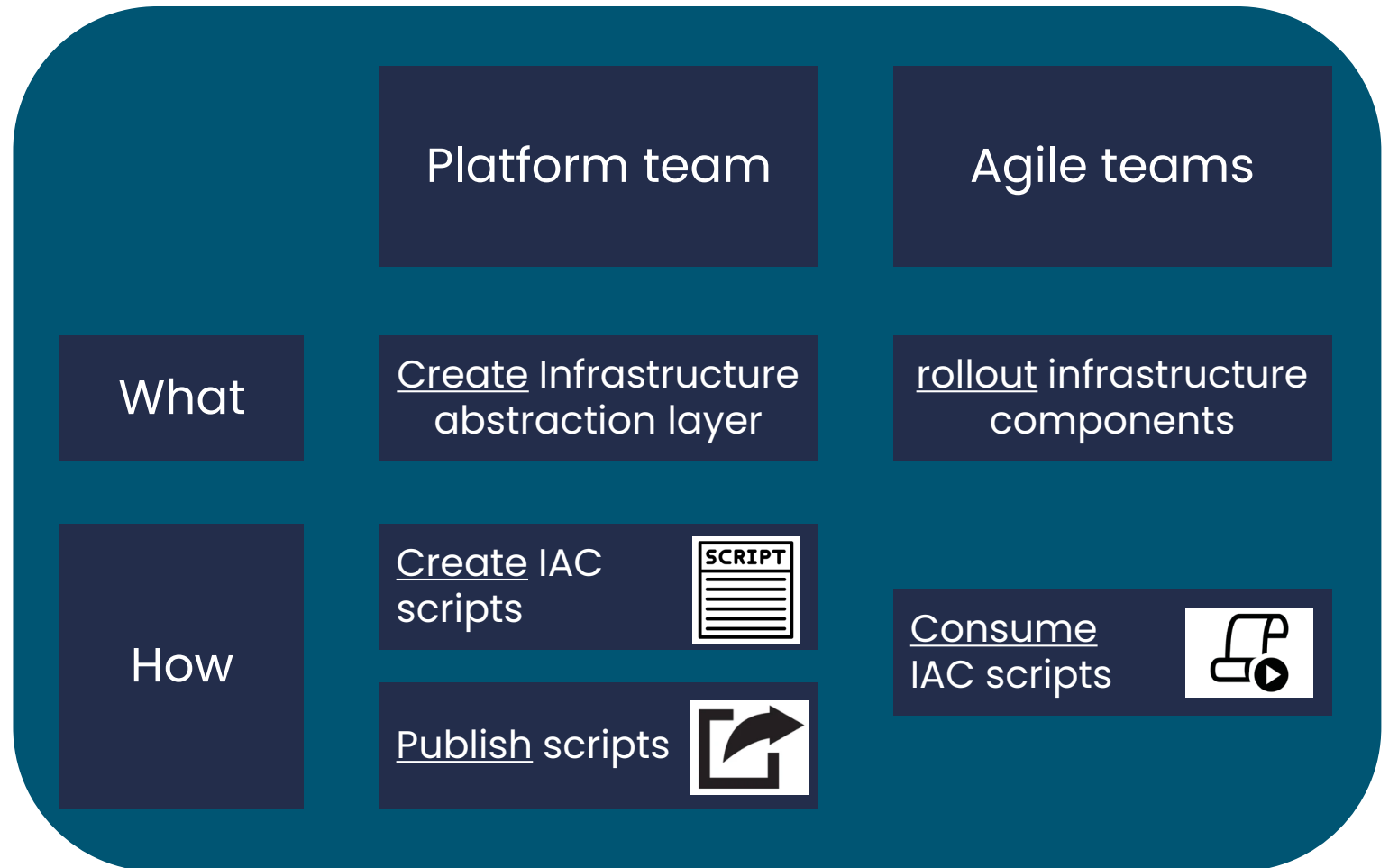- **Reduce time to market**

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Fundamentals of Platform Engineering

Continuous Integration and Deployment

Embraces **CI/CD pipelines** to enable frequent and reliable software releases, ensuring fast **feedback loops**, rapid bug fixes, and seamless feature delivery, enhancing **agility** and **quality.**

Standardization and Automation

Standardizes technologies, processes, and tools across the organization, while **automating** as much as possible to reduce manual effort and variability, ensuring **consistency** and **repeatability** of deployments.

	Platform team	Agile teams
What	<u>Create</u> Infrastructure abstraction layer	<u>rollout</u> infrastructure components
How	<u>Create</u> IAC scripts	<u>Consume</u> IAC scripts
	<u>Publish</u> scripts	

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Fundamentals of Platform Engineering

Containerization and Orchestration

Utilizes **containers** for packaging applications and their dependencies, along with orchestrating containerized services for **efficient deployment**, scaling, and management.
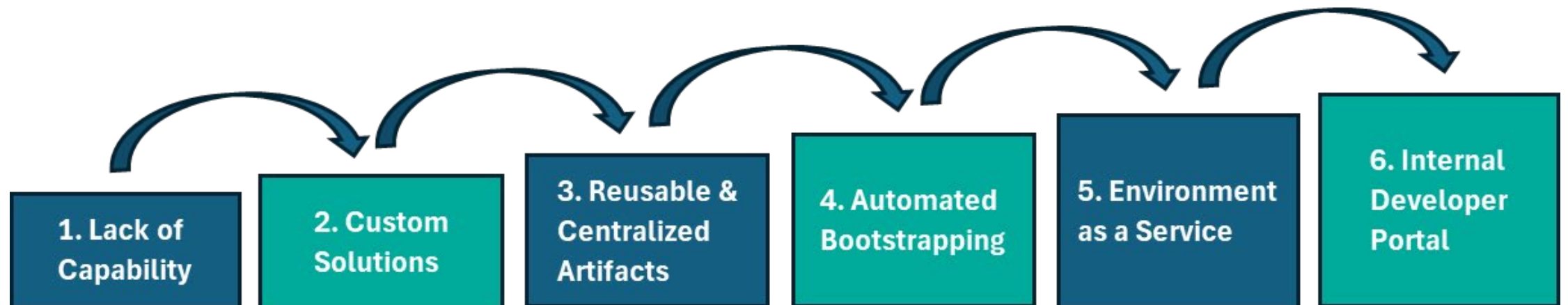
Infrastructure as Code

Automates the provisioning and management of **infrastructure, ensuring consistency** and scalability while **reducing** manual configuration **errors**. It enables the organization to treat infrastructure as software, promoting agility and reliability.

DevOps Practices

Integrates development and operations, fostering a culture of collaboration, automation, and continuous improvement. DevOps practices **enhance** delivery **speed**, **quality**, and resilience of software delivery.

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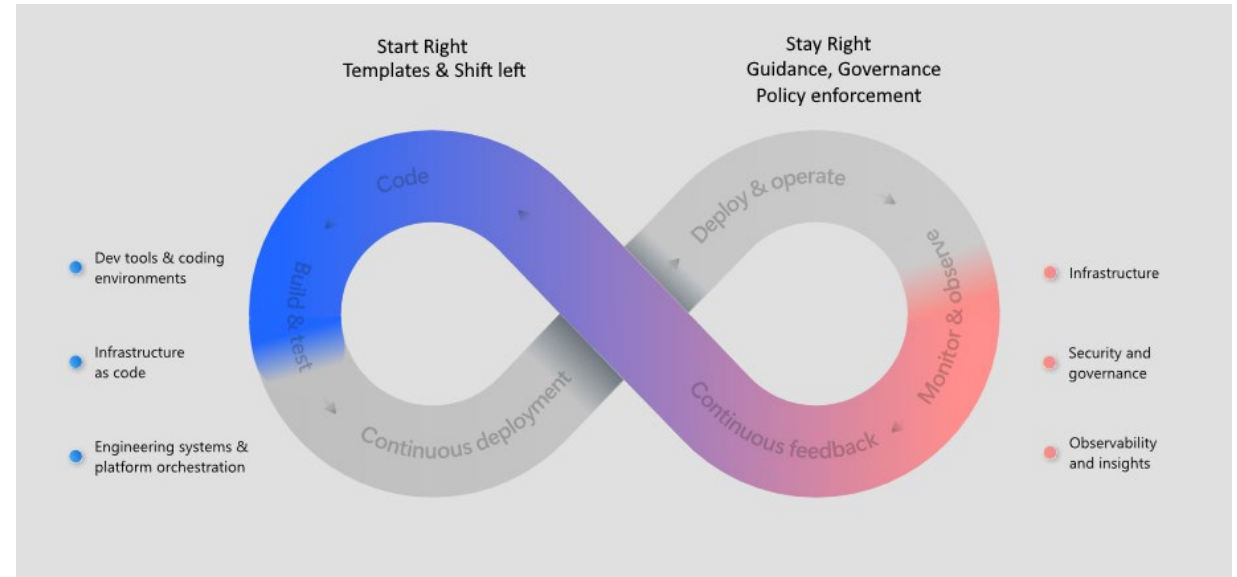
Stages of platform engineering

1. No existing process to fulfill this request.

2. Custom solutions with basic parameterization, but scaling requires manual effort.

3. Reusable modules, centralized artifacts, and "paved roads" for streamlined onboarding

4. Automated workflows simplify configuration and boost developer experience.

5. Provision new environment from template and limited effort required from platform team

6. Self-service portal with the platform treated as a product for continuous improvement.

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