

# Effective Continuous Verification

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Holistic Transformation with the right mix  
of Expertise & Technologies

# One hub. Multiple expertise.

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Enabling reliable digital solutions

## Our Purpose

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“ We are one hub of collaborative cells, each dedicated to a niche capability. While enabling and facilitating people-centric innovation and transformation, our collective purpose is to sustainably empower organizations to deliver reliable digital solutions. ”



## Digital Transformation Advisors

### ML Architects Basel

Designing & building  
the Digital Highway  
for **Data- & ML-driven systems**

**Culture-first, holistic  
transformation** to establish key  
Capabilities of the Digital  
Highway

### DigitalQ

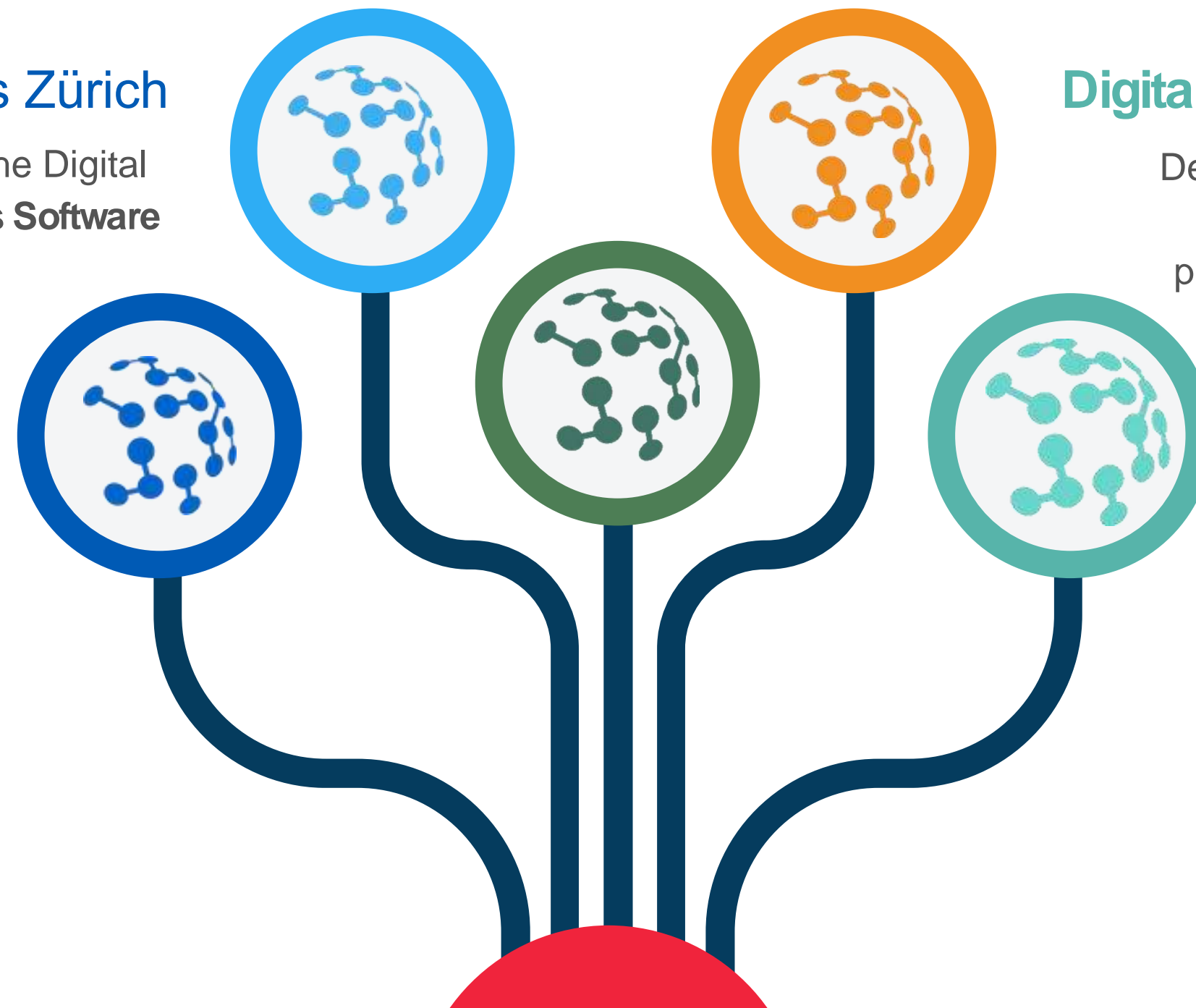
**Effective Continuous Verification**  
to enable Quality @ Speed within  
the Digital Highway

### Digital Architects Zürich

Designing & building the Digital  
Highway for **Continuous Software  
Delivery**

### Digital Innovation Partner

Designing & building effective  
**training & innovation**  
programs to build & operate  
the Digital Highway



**One Hub.  
Multiple Expertise.**

# Digital Highway

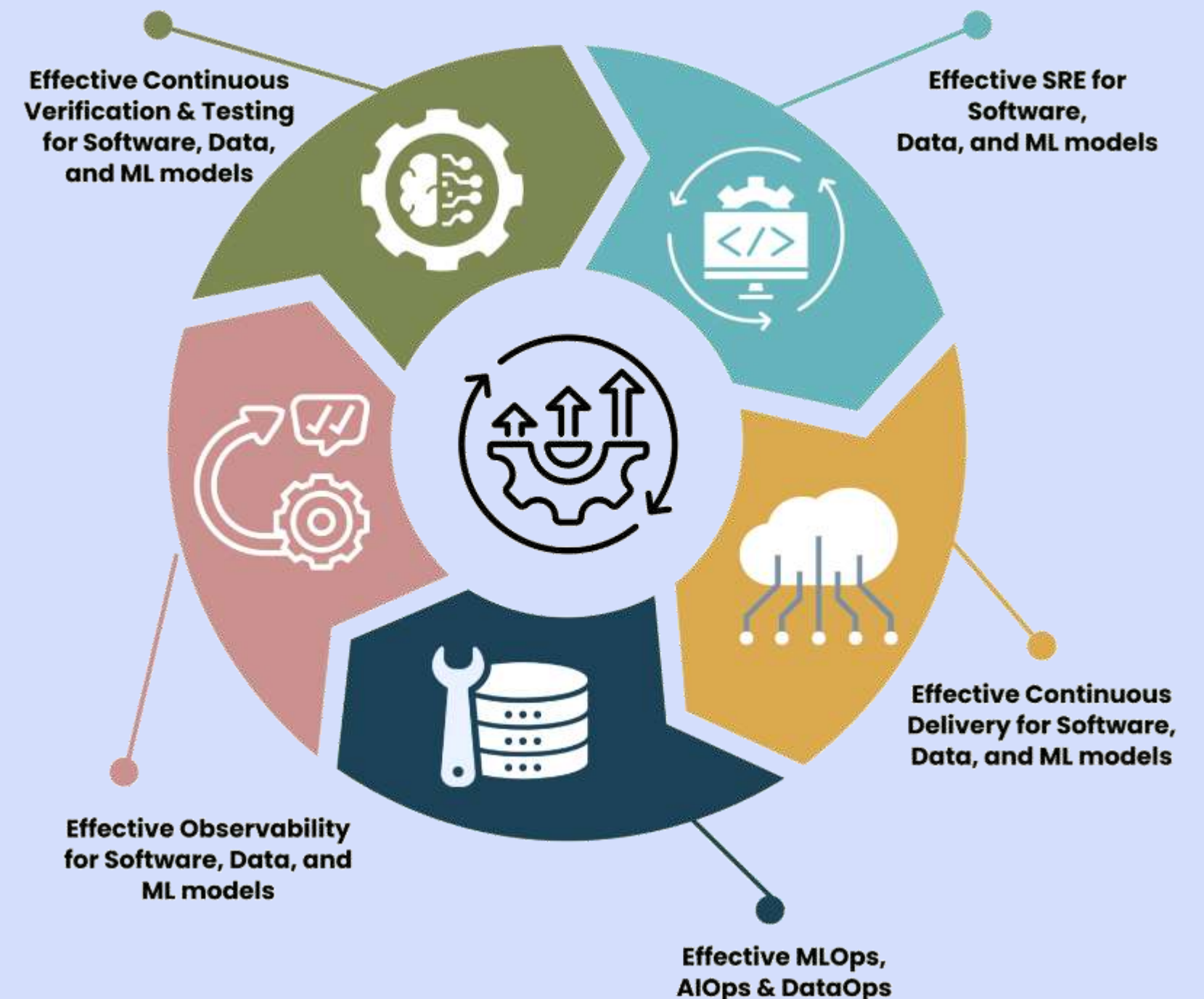
## Blueprint for High-velocity Delivery of Reliable Digital Solutions

The **Digital Highway**, a blueprint for high-velocity delivery of *Reliable Digital Solutions*, is based on five Capabilities:

- **Effective SRE** for Software, Data and ML Models
- **Effective Continuous Delivery** (CD) for Software, Data and ML Models
- **Effective MLOps, AIOps and DataOps**
- **Effective Observability** for Software, Data and ML Models
- **Effective Continuous Verification & Testing** for Software, Data and ML Models

Designing, building and maintaining the Digital Highway requires:

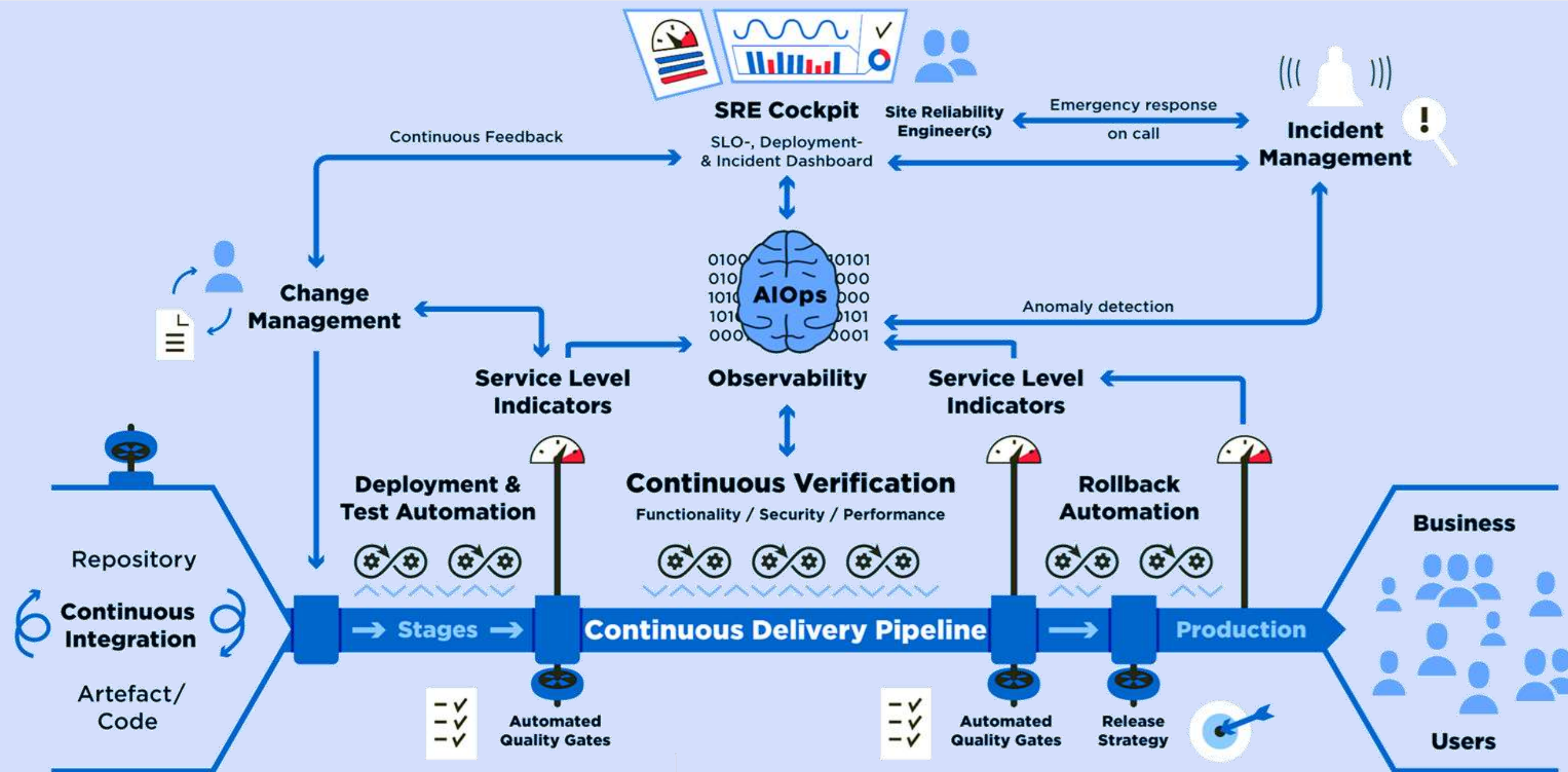
- Novel **operating model & engineering skills**
- An appropriate **mindset and culture**





# Digital Highway

## For Continuous Solution Delivery



Cloud Stack

Infrastructure Provisioning

Infrastructure & Monitoring  
as Code

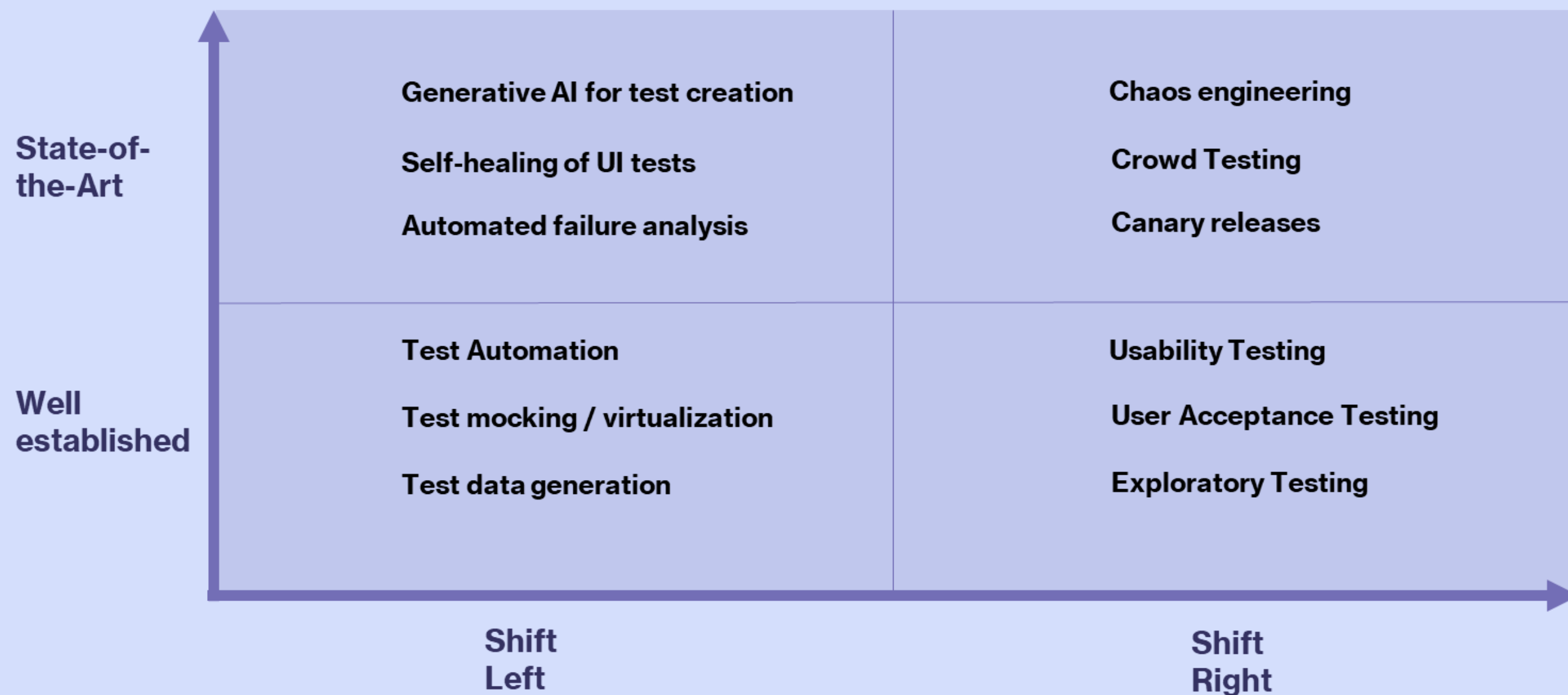
Audit & Compliance

Application Reliability  
Architecture

# Effective Continuous Verification

How to succeed disruptive transformation in testing

1. We guide our customers to find the right mix
2. between established Test Engineering and State-Of-The-Art Test & Verification approaches
3. while balancing shift left, shift right and ML/AI-driven practices.

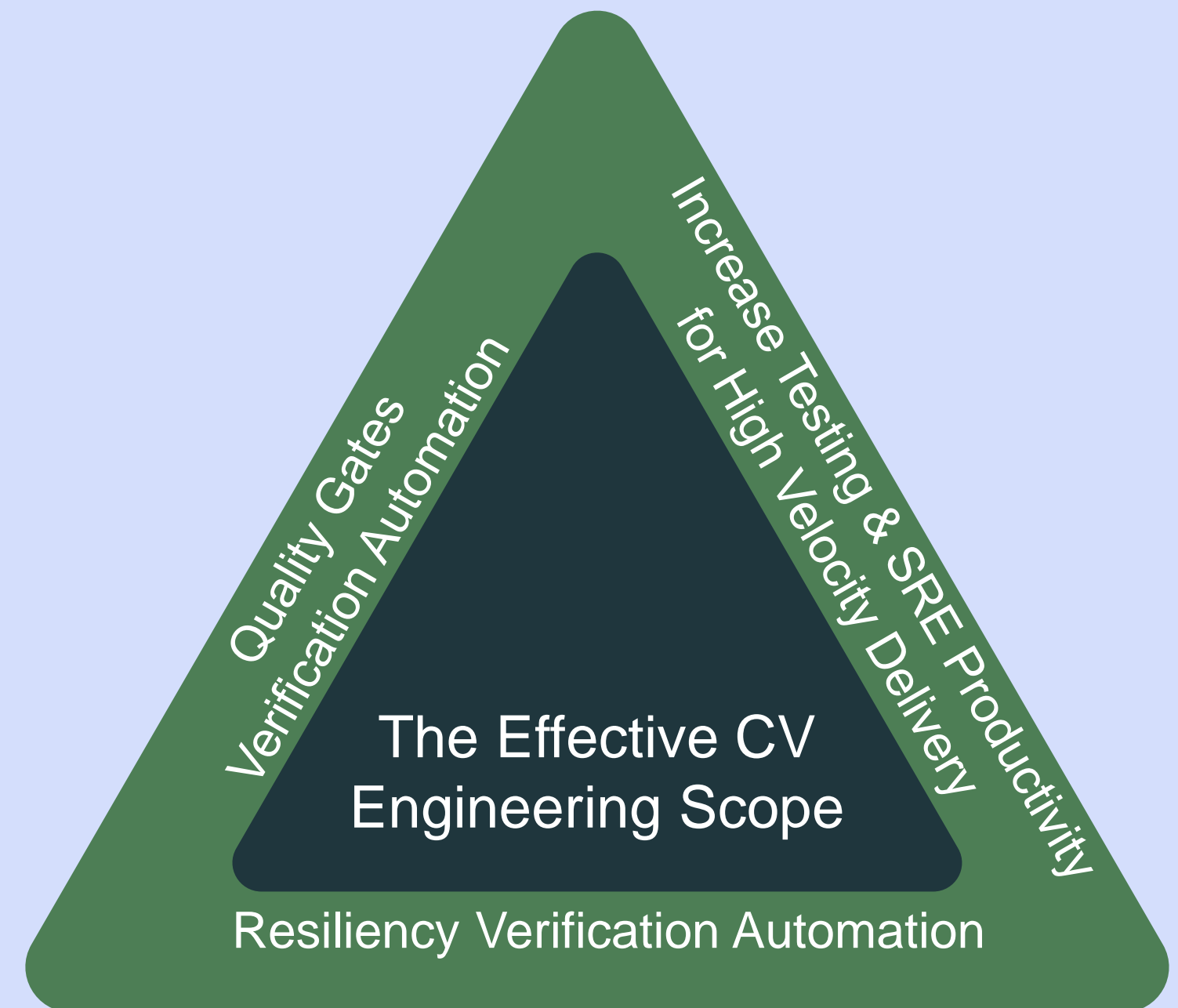


# Effective Continuous Verification

## Definition and Scope

Effective Continuous Verification (CV) is

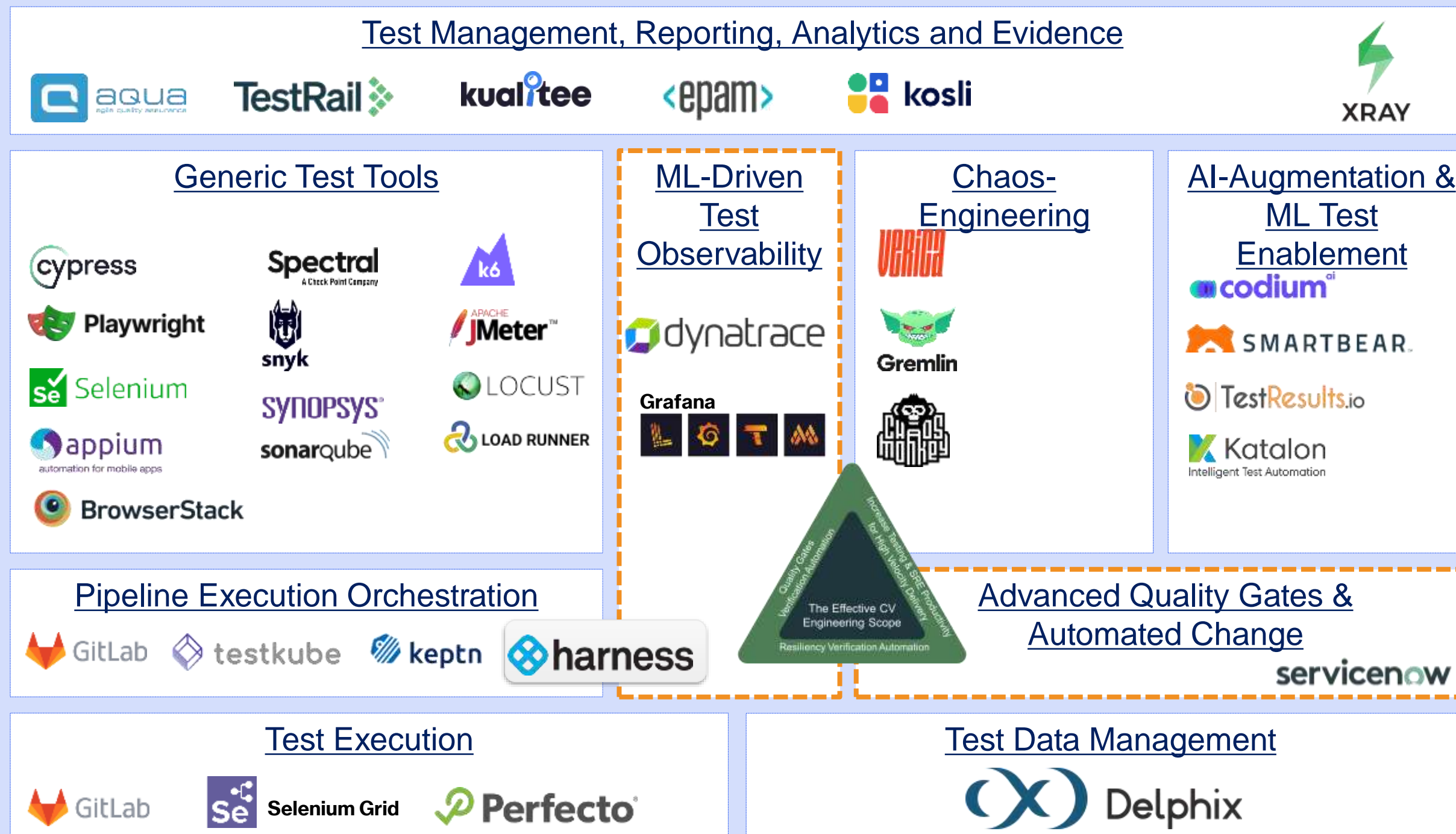
The application of a systematic, holistic and disciplined approach for the design, implementation and cost-effective data collection, processing & analytics to **implement quality gates through the delivery pipelines, automate their verification** and increase the overall **testing & SRE productivity**.





# Effective Continuous Verification

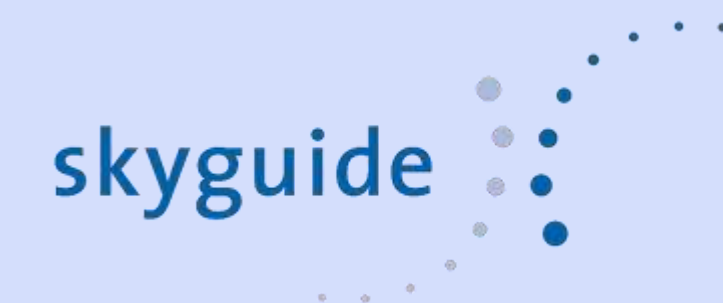
Engineering for high-speed solution delivery



# Swiss Digital Network



First-class services for Swiss Leading Enterprises





# Appendix



**SWISS**  
DIGITAL NETWORK

# MOTIVATION 3

## Effective Continuous Verification increases DevOps Maturity for High-Velocity Delivery



While Organisations embrace DevOps and MLOps (DevOps for ML Systems) as a true accelerator for their delivery velocity, testing is still the throttle for real agility.

To deploy continuously and on-demand, quality needs to be an intrinsic, observable vector within the CI/CD pipelines

Continuously verifying the state of the system enables developers and reliability engineers to embed quality analytics prediction and self-healing into delivery and operations.

Effective Continuous Verification is an incremental and adaptable path to transform testing practices into Continuous Verification. This increases value, reduces cost and fosters shared responsibility for quality across the organisation, and enabling high velocity delivery.

	Level 0	Level 1	Level 2	Level 3	Level 4
	Pre-Agile / Waterfall 1-4 Releases/Year	Continuous Integration 4-6 Releases/Year	Continuous Delivery Monthly Release	Continuous Deployment Weekly Release	Agile Product Delivery Release on-demand
Technology, Tooling & Automation	<ul style="list-style-type: none"><li>Disconnected Tooling chain for Dev, QA &amp; Ops</li><li>No clear backlog management</li><li>Possibly Build/CI Server</li><li>Infrequent/manual runs</li></ul>	<ul style="list-style-type: none"><li>Build-Server, CI Server, Static Code QA</li><li>Program and team backlogs exist</li><li>Possibly App. Deployment Automation</li></ul>	<ul style="list-style-type: none"><li>Continuous Delivery &amp; Verification</li><li>Self-Service Observability and AIOps</li><li>Extended Automation (testing, Recovery, Staging, etc.)</li></ul>	<ul style="list-style-type: none"><li>Continuous Deployment &amp; Rollback Automation</li><li>Shift Right Testing to production</li><li>Shift left of value delivery.</li></ul>	<ul style="list-style-type: none"><li>Release on Demand</li><li>Continuous &amp; AI-driven stability, reliability, availability and security Mgmt.</li><li>Release value at any time to meet customer and market demand</li></ul>
Operating Model, Processes & Roles	<ul style="list-style-type: none"><li>Manual and Low-frequency Release Mgmt</li><li>Discontinuous Delivery workflow &amp; and fragmented roles &amp; resp. with manual transition from the silos Dev, QA &amp; Ops</li></ul>	<ul style="list-style-type: none"><li>PO, Scrum Master</li><li>Product Management established, no end-to-end ideation</li><li>Possibly ITIL/Lean in Ops but Conv. Sys Admin-based Op. Model &amp; Roles in Ops</li></ul>	<ul style="list-style-type: none"><li>Cross Functional Teams for Dev and Ops</li><li>SRE-oriented Ops Model in Staging and Ops</li><li>SRE to assure SLO, Cont. Delivery and Ops Eff.</li><li>Manual Approval for Prod Deployment</li></ul>	<ul style="list-style-type: none"><li>Prioritised features according delivery capacity</li><li>Incremental/canary Release Engineering</li><li>Prod Mgt. collab. of biz, dev OR operations</li></ul>	<ul style="list-style-type: none"><li>Decoupled release from deployment</li><li>Product Management collab. of business, development AND operations.</li><li>Fast flow of planned work into production</li></ul>
Mindset, Principles & Culture	<ul style="list-style-type: none"><li>Silo-oriented mindset</li><li>Trade-off in objectives &amp; culture clash btw. Dev, QA &amp; Ops</li><li>Frequent stability issues and outages outside SLA</li><li>No/infrequent post-release evaluation</li></ul>	<ul style="list-style-type: none"><li>Partially Agile culture in Dev</li><li>Partially Lean culture in Ops</li><li>Quality Management for releases</li></ul>	<ul style="list-style-type: none"><li>Joint and authentic self-defined LADS (Lean, Agile, DevOps, SRE) Culture</li><li>Evaluation of releases' value based on feedback</li></ul>	<ul style="list-style-type: none"><li>Continuous Learning</li><li>Joint and authentic self-defined LADS Culture</li><li>Objective evaluation of releases' value</li></ul>	<ul style="list-style-type: none"><li>Continuous organization learning established</li><li>Full measures support fact-based decisions</li><li>Innovation accounting is established</li><li>Shared responsibility</li></ul>

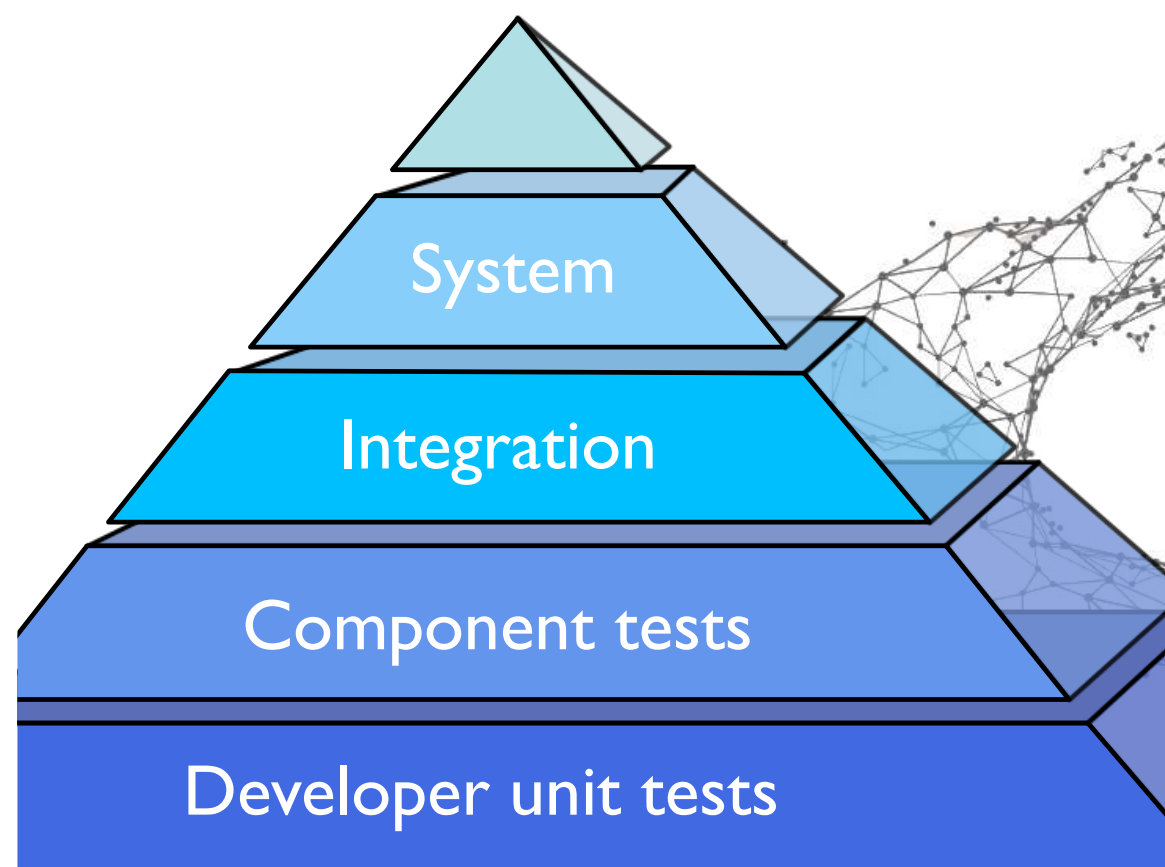
Effective DevOps Maturity Model  
Digital Architects Zurich, 2021



# DISRUPTION IN TEST ENGINEERING IS NEEDED I

*Breaking the pyramid - is needed but not enough*

- Established testing models are no longer fit-for-purpose.
- They provide no answers for microservice architectures, everything as code and continuous deployment.
- Agility, cloud-native technology stacks and ML/AI are driving the IT-transformation across the industry.
- Testing however, is still a mix of traditionally central or hybrid setup, that does not fit.
- We re-think testing with engineering DNA, and we help you to disrupt testing and build a right-sized model.



## DISRUPTION PRINCIPLES

CUSTOMER  
OUTCOMES

BREAKNECK  
SPEED

LEARNING  
ORGANIZATION

~~ZERO~~ LITTLE  
HERITAGE

THE 4 DISRUPTION PRINCIPLES



# EFFECTIVE CV FOR YOUR TEAM/ORGANISATION I

## *Our Offering Portfolio*



### One Partner for Your Effective CV Journey

Maturity Assessment, Target Definition & Transformation Roadmap

Effective CV Architecture & Tooling

Effective CV Training & Coaching

Effective CV Engineering Services

### One Partner for Multiple CV Practices

Continuous Performance Verification

Continuous Security Verification

Continuous Functional Verification

Chaos engineering

# EFFECTIVE CV FOR YOUR TEAM/ORGANISATION 2



## *Key Solutions Elements & Patterns*



**Our Proven Effective  
CV Maturity Model**



**Our Lean Onboarding  
Approach**



**Our Effective  
Continuous Verification  
Blueprint As Reference  
Model**



**Our CV Lab &  
Reference  
Implementation**



**Our Established  
Consulting &  
Technology Partner  
Landscape**

Effective Continuous Verification is not just a concept; it is a practical approach to enhance the quality, reliability, and security of your digital solutions. With our solution elements and patterns, we provide a comprehensive framework to guide and support your organization in achieving its “Quality@Speed” mission.