Secure by Design: Scaling Agile within and across Large-Scale Organisations

Agile Organisations towards Trusted Digitization

Sascha Block - Warsaw - June 11, 2025

Building better
Government software
at scale

- IT architect in Germany's public sector – building secure, scalable systems in one of Europe's most regulated digital infrastructures

- Domain: telematic infrastructure

- **combines hands-on experience** in large-scale IT with academic depth in IT infrastructure and agile methods

- entrepreneur of **Rock the Prototype** – a podcast & YouTube format for prototyping & software development

- author of "**Large-Scale Agile Frameworks**", bridging governance, agility, and infrastructure at scale

rock the
PROTOTYPE

Sascha Block

IT Architect

Why change is hard – and why it's worth it !
Does this structure look familiar to you?
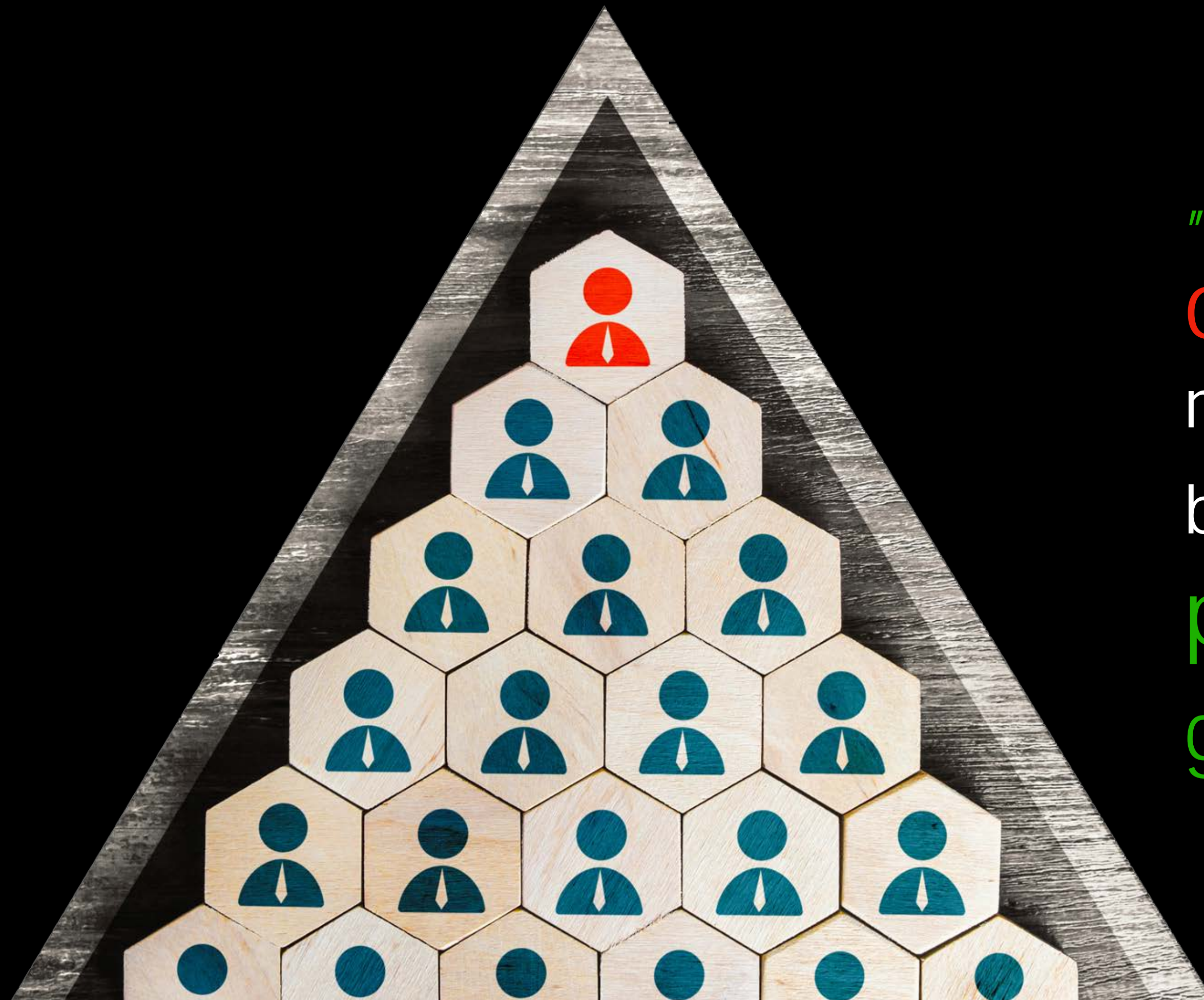
„Agile transformation challenges not only your tools - but your roles, functions, prioritization and will need to grow your agile mindset..."

Change begins with the courage to change ourselves.

Many changes don't fail because of technology.
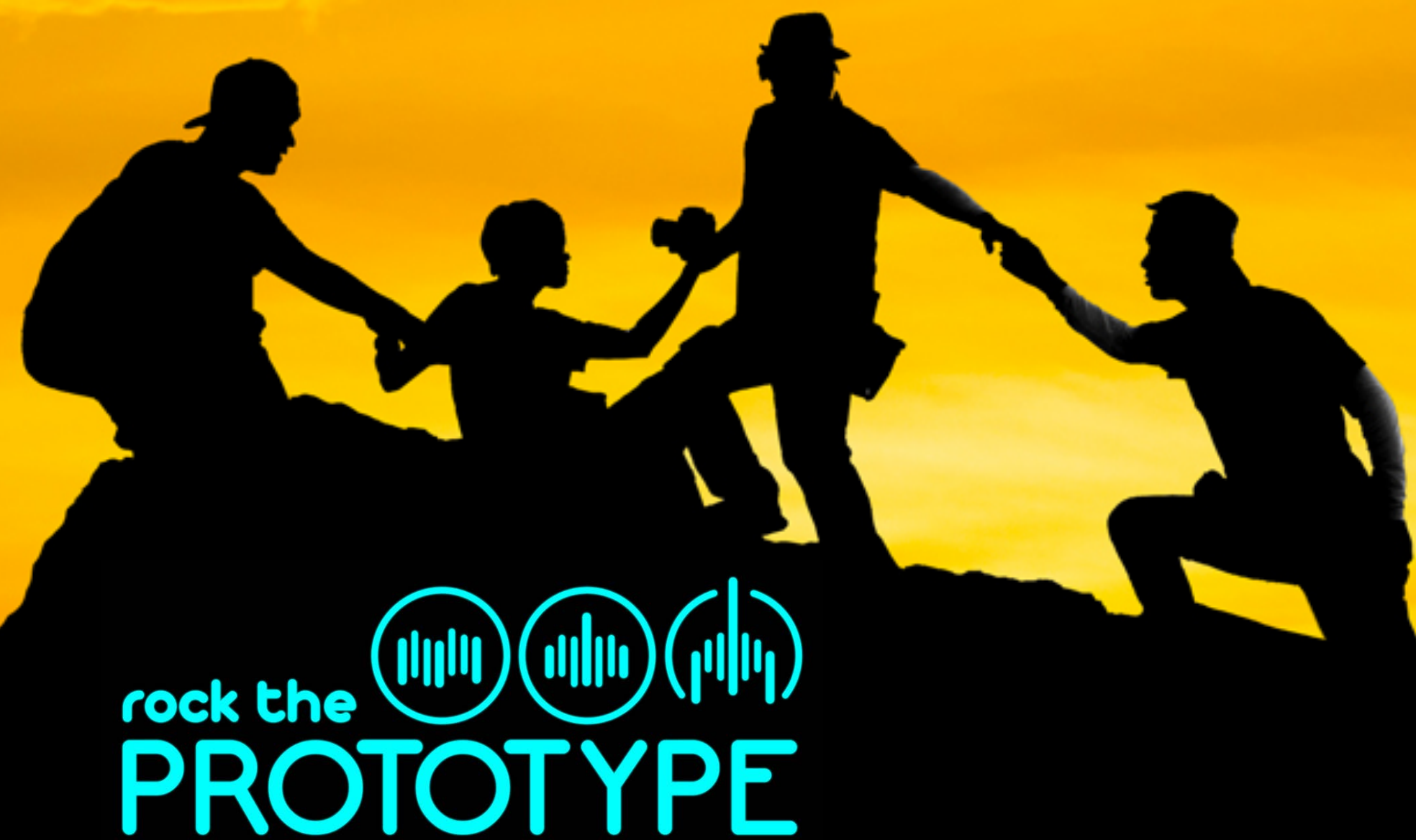
But because of **habits**.

And their twin sister: **convenience**.

True agility begins...

...where we are prepared to rethink responsibility.

Where we relinquish control - in order to gain trust.

And where we transform our fear of making mistakes

into a willingness to learn.

rock the PROTOTYPE

Agile organization

**Four pillars
of agile organizations**

Agile mindset	agile teams	Agile feedback	Digital infrastructure
• agile leadership culture and adaptive change management	• Interdisciplinary teams	• Continuous feedback...	• Technology as an Enabler for agility
• healthy error culture	• Cross-functional teams	• ...and validated customization	• Interoperability & established IT standards
• Agile evolution and continuous progress	• Self-organized teams	• Key Performance Indicators	• Technology as an Enabler for agility
• Decisive at all levels	• Close cooperation with stakeholders	• Data-Driven Decisions	• IT Compliance
• Eager to experiment & culture of innovation	• Remote & hybrid cooperation	• Live-Testing & Early Validation	• IT Security, Zero Trust Security & Data Protection
• Transparent communication		• Customer centricity	• Automation
			• Monitoring

**close relationship with customers and connection of
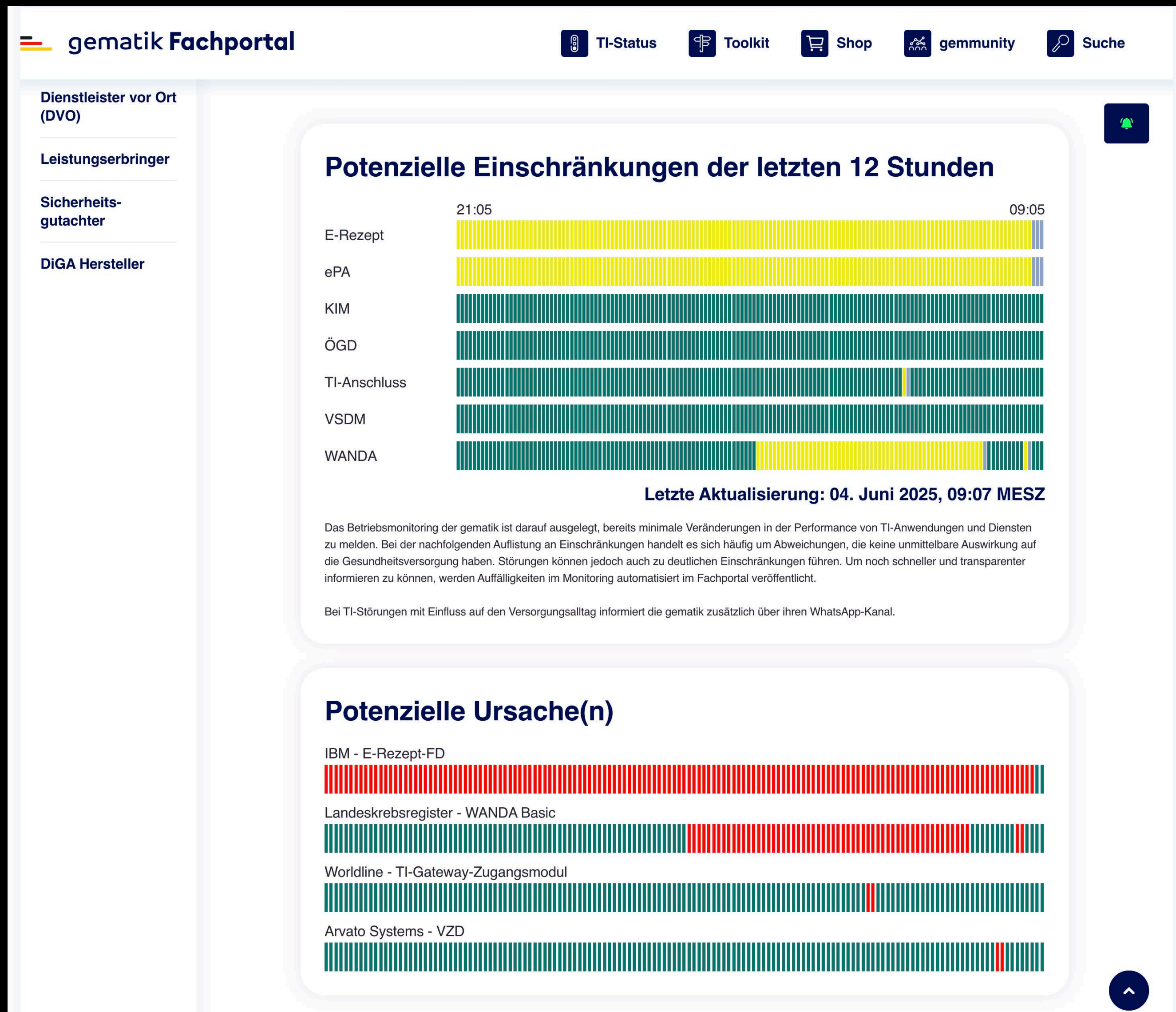partners, service providers and 3rd parties. parties**

"Secure by design — how should secure processes look like today?"

rock the PROTOTYPE

Secure by Design @ Large-Scale

Need for Large-Scale Agile within and across Large-Scale Organisations

E-Rezept: Electronic prescriptions must be validated, transmitted, and redeemed — instantly and securely.

ePA: The electronic patient record links sensitive medical data with access protocols across actors.

KIM: Secure messaging in the healthcare sector — any failure interrupts communication between doctors and providers.
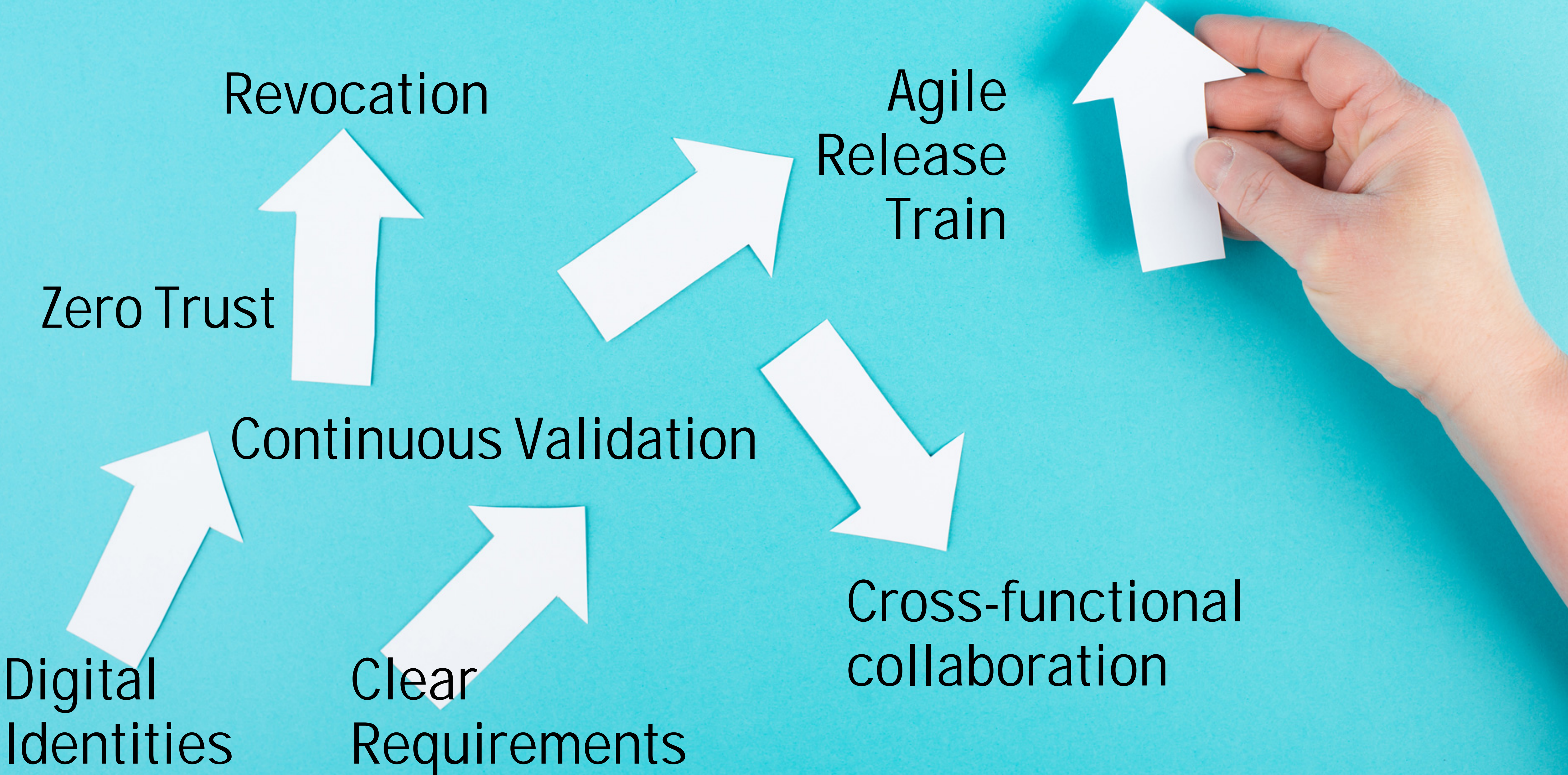
ÖGD: Public health infrastructure depends on secure data flows, especially during crises.

TI-Anschluss & VSDM: These are the gatekeepers to digital identity and insurance verification.

WANDA: Specialized registry access — important but less critical in direct patient interaction.

„What we need is not a cascade of support – but a system that doesn't rely on it."

What do we need to Large-Scale Trusted Digitization?

Revocation

Agile
Release
Train

Zero Trust

Continuous Validation

Cross-functional
collaboration

Digital
Identities

Clear
Requirements

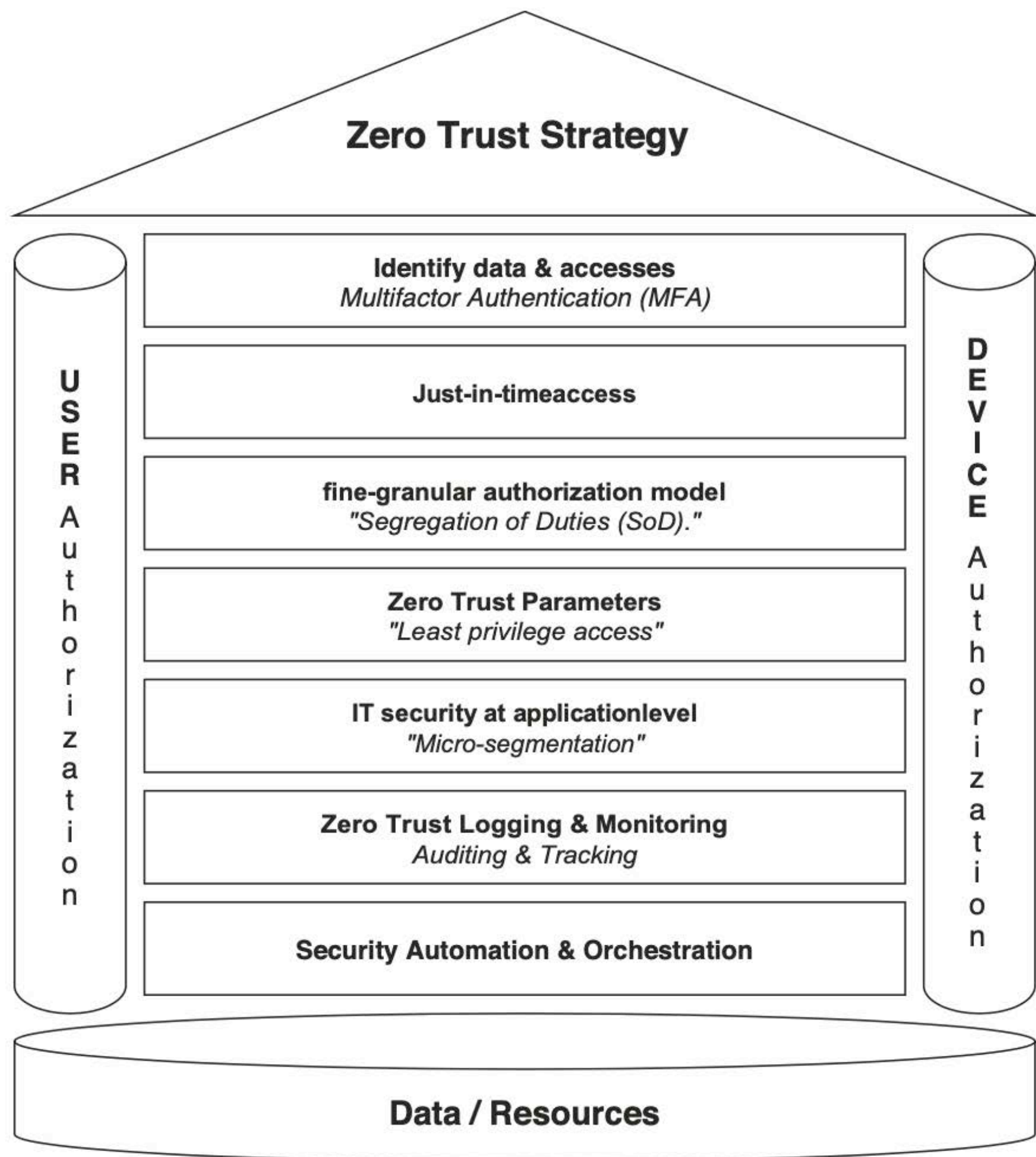# Zero-Trust strategy is based on the basic principle "never trust, always verify".

Fig. 4.5 Zero-Trust Strategy—Representation based on Mehraj/Banday.
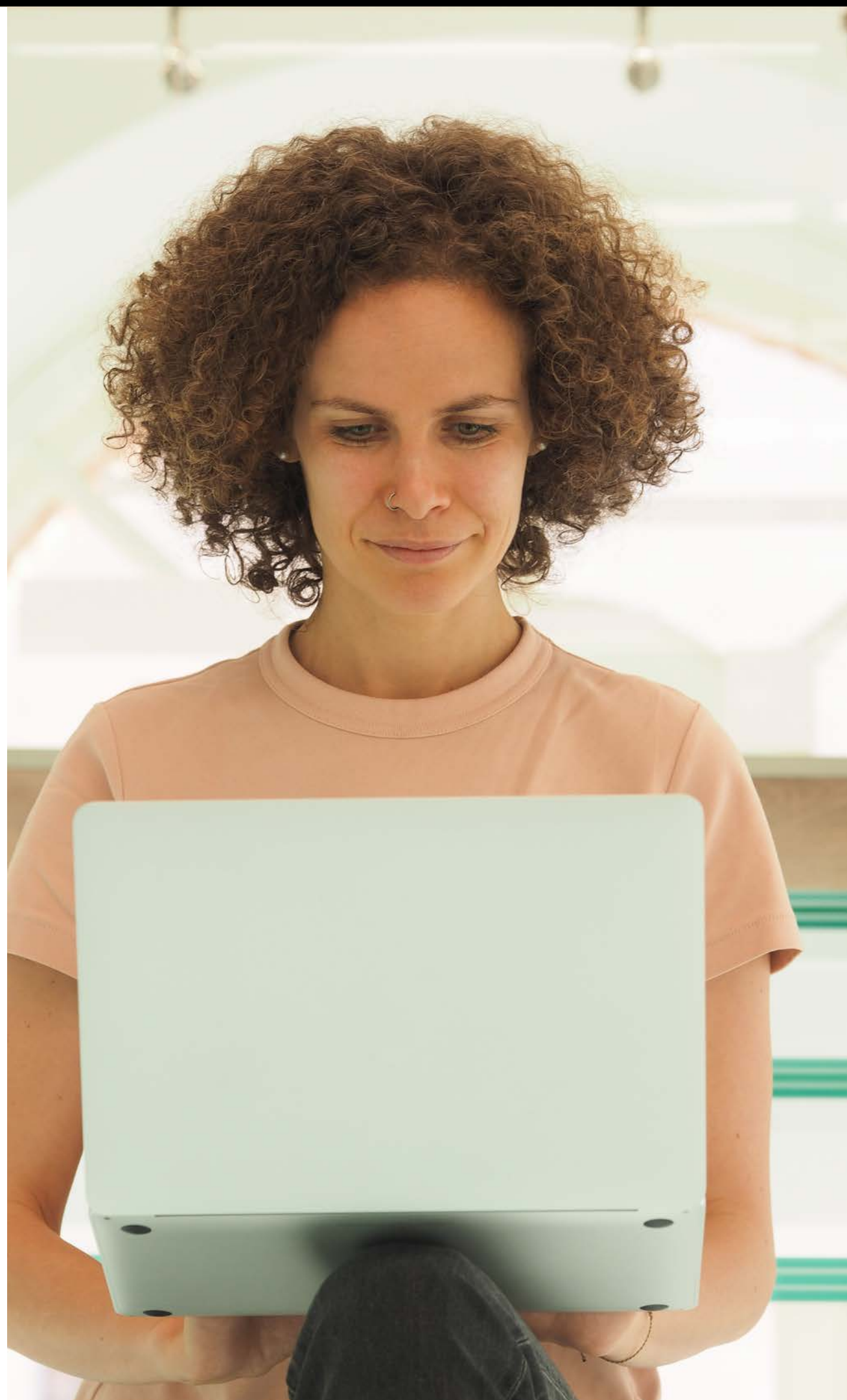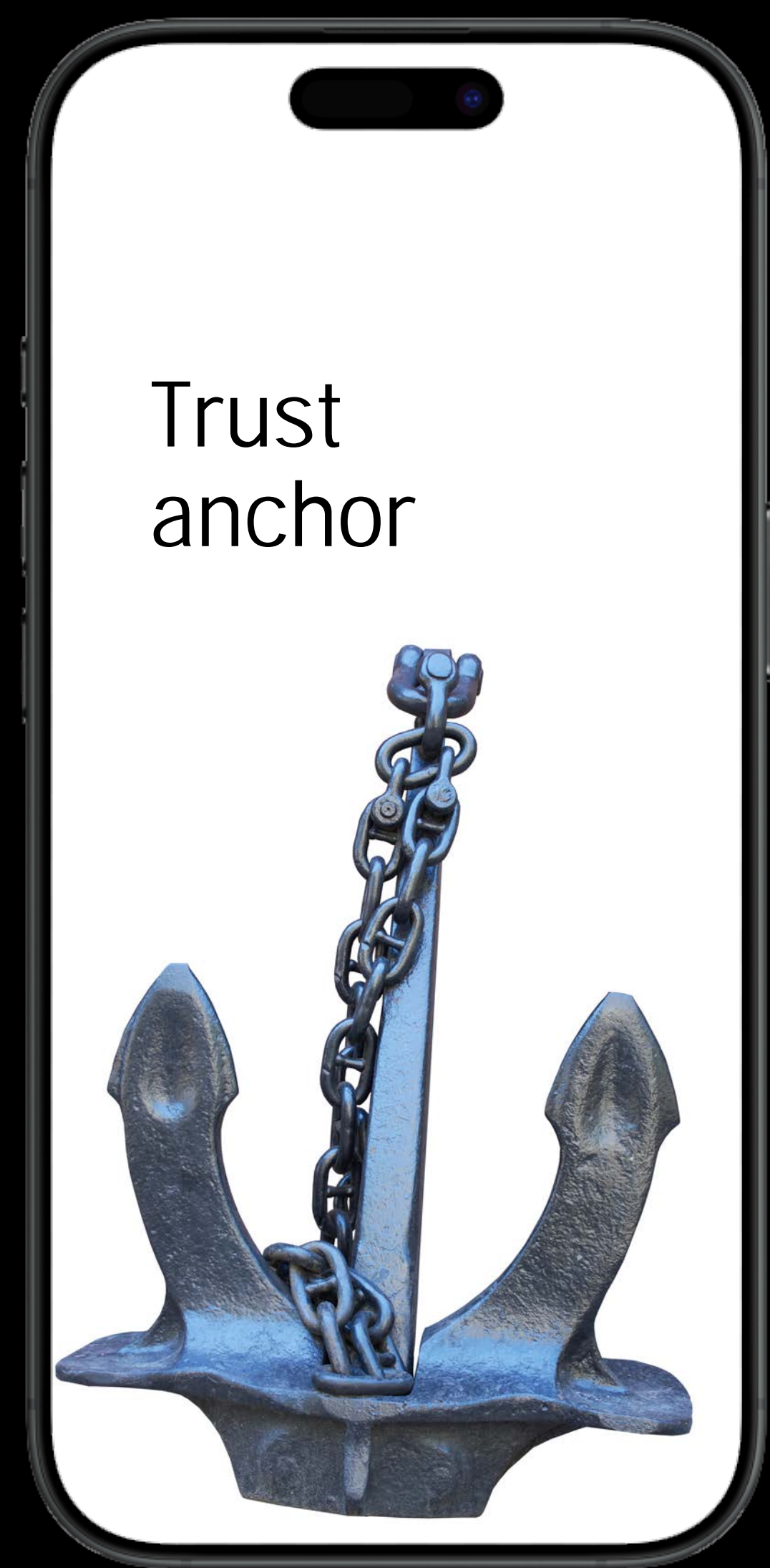
User + Device

Revocation
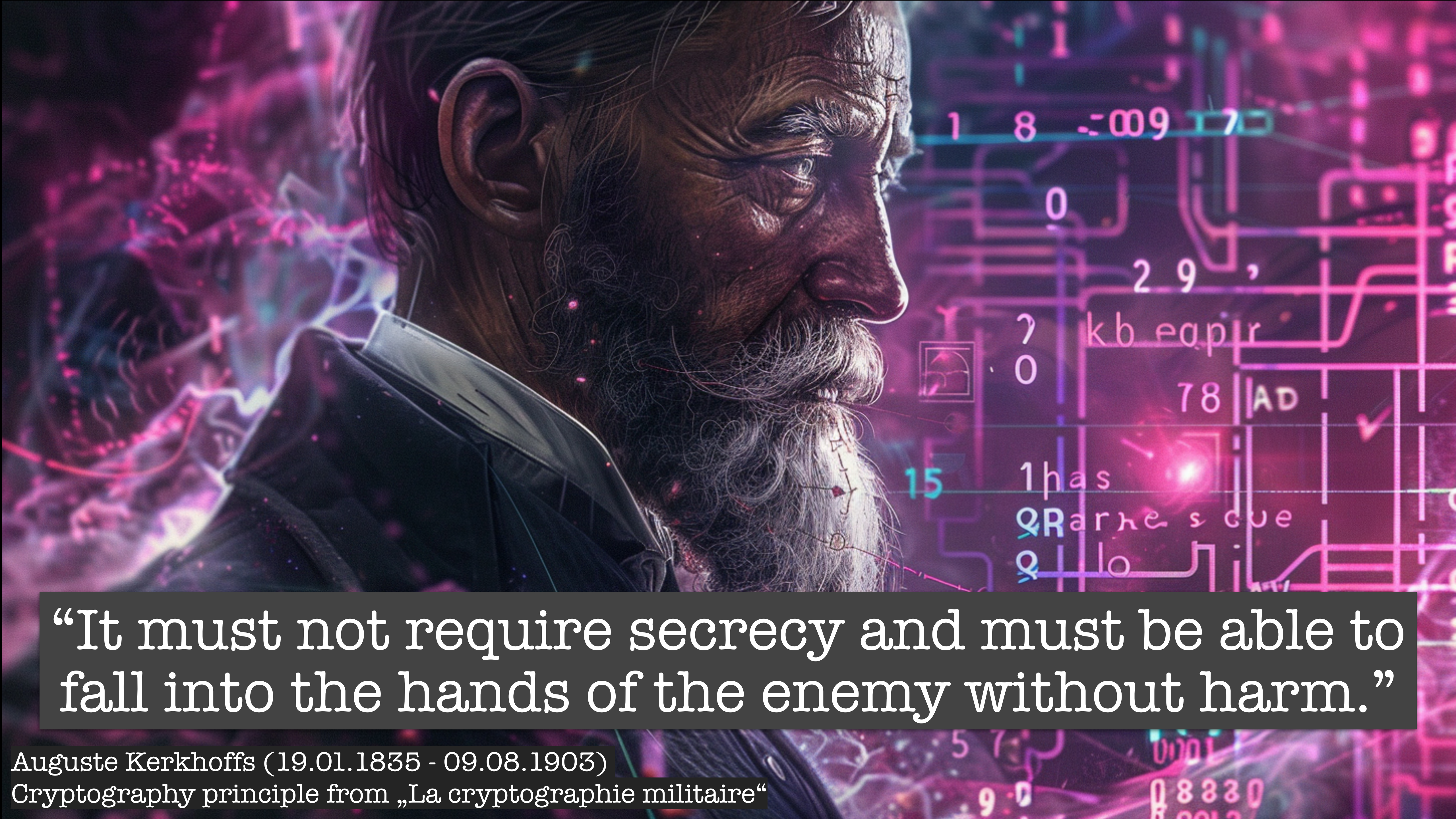
"It must not require secrecy and must be able to fall into the hands of the enemy without harm."

Auguste Kerkhoffs (19.01.1835 - 09.08.1903)
Cryptography principle from „La cryptographie militaire"

Secrets include credentials

such as:

- Usernames and database identifiers
- Passwords
- Token credentials
- API keys
- SSH keys
- Certificates

♻️ Continuous Validation

"Today, trust must be secured cyclically and dynamically - no longer statically."

Agile Collaboration based on Information and Communication

Agile organization: API governance, management and IT security

API based closely networked with customers, partners and external services on the basis of validated requirements

API Governance

▶ **Strategic framework**

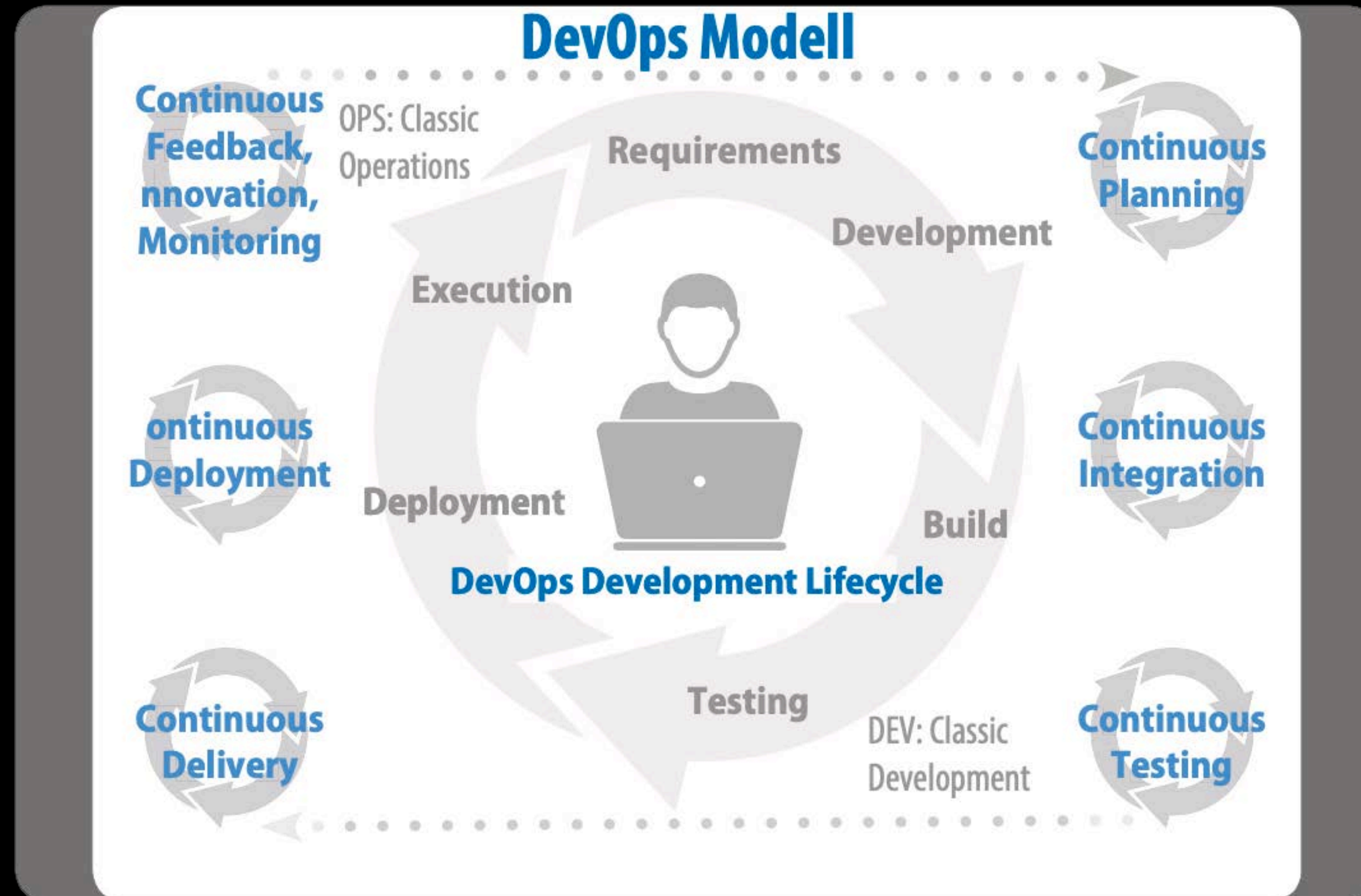▶ **Defines standards, rules, policies**

▶ **Has a preventive & upstream effect**

API Ecosystem
Secure, scalable, strategically valuable

▶ **Operational implementation**

▶ **Tools & plattform (API gateway, …)**

▶ **Controls deployment & monitoring**

▶ **Protection mechanisms (Auth, rate limits)**

▶ **Reactive & preventive protection mechanisms**

▶ **Compliance & threat detection**

API Management

API Security

Agile Collaboration based on Information and Communication

"Interorganizational agility can only be achieved through transparent communication and comprehensible information models."

Cross-functional collaboration

Kaizen 改善

Kaizen is directly related to the prototypical approach,
which is geared towards hypothesis formation and its validation

Establishing cross-functional collaboration in agile teams

Customers
► Inspire customers - expectations +
Meeting and exceeding needs

constructive criticism + feedback
► establish Liquid Democracy
+ Liquid Feedback
► Anchoring the potential and
value of constructive criticism

Quality
► define
► realize
► permanently guarantee
and optimize

Processes
► analyze
► document
► audit
and optimize

Standardization
► Identify established standards
► Proactively shaping standards
► Understanding standards as assets
and optimize them

Agile Collaboration based on Information and Communication

Product Owner (PO)
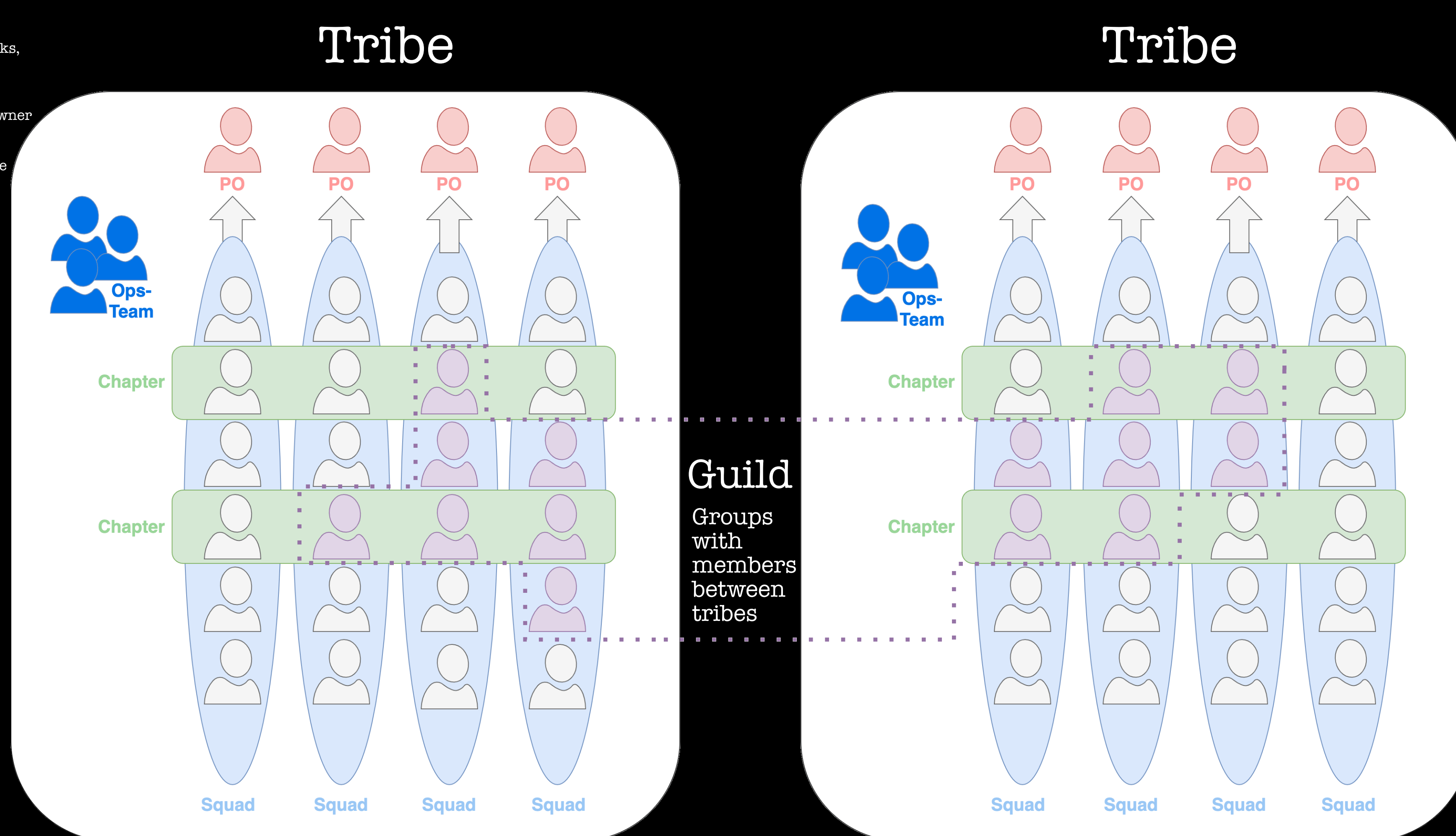coordinate and manage the backlog, prioritize tasks, and organize
coordination between the squads:

Each agile squad team has an assigned Product Owner who is responsible for prioritizing work and supporting the team
in achieving its goals without being involved in the implementation process.

Tribe

Tribe

PO   PO   PO   PO

PO   PO   PO   PO

Ops-Team

Ops-Team

Chapter

Chapter

Chapter

Chapter

Crossfunctional communication

Guild

Groups
with
members
between
tribes

Squad   Squad   Squad   Squad

Squad   Squad   Squad   Squad

Squads are
independent agile teams

Remember
those days?

"Only one shot."

rock the
PROTOTYPE

Podcast Interview with
ATARI Legend Howard Scott Warshaw

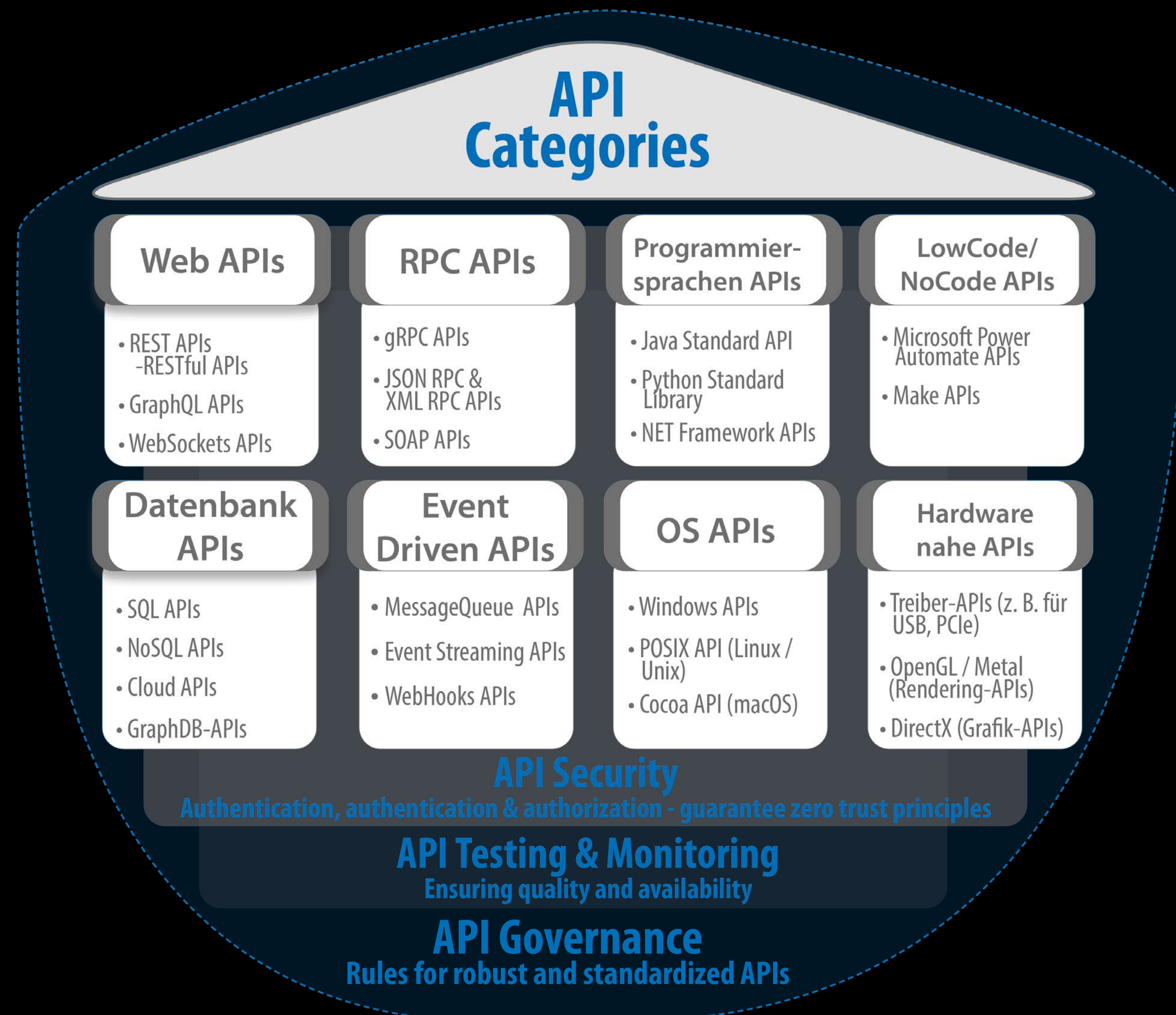From Yars' Revenge to Modern Innovations in Game Development

🎧 Listen on Spotify: 👉 Spotify Podcast: https://spoti.fi/4ehrVWx
🍎 Enjoy on Apple Podcasts: 👉 Apple Podcasts: https://bit.ly/4b1o39a

API Governance

API Governance

API Categories

Web APIs	RPC APIs	Programmier-sprachen APIs	LowCode/NoCode APIs
• REST APIs -RESTful APIs • GraphQL APIs • WebSockets APIs	• gRPC APIs • JSON RPC & XML RPC APIs • SOAP APIs	• Java Standard API • Python Standard Library • NET Framework APIs	• Microsoft Power Automate APIs • Make APIs

Datenbank APIs	Event Driven APIs	OS APIs	Hardware nahe APIs
• SQL APIs • NoSQL APIs • Cloud APIs • GraphDB-APIs	• MessageQueue APIs • Event Streaming APIs • WebHooks APIs	• Windows APIs • POSIX API (Linux / Unix) • Cocoa API (macOS)	• Treiber-APIs (z. B. für USB, PCIe) • OpenGL / Metal (Rendering-APIs) • DirectX (Grafik-APIs)

API Security
Authentication, authentication & authorization - guarantee zero trust principles

API Testing & Monitoring
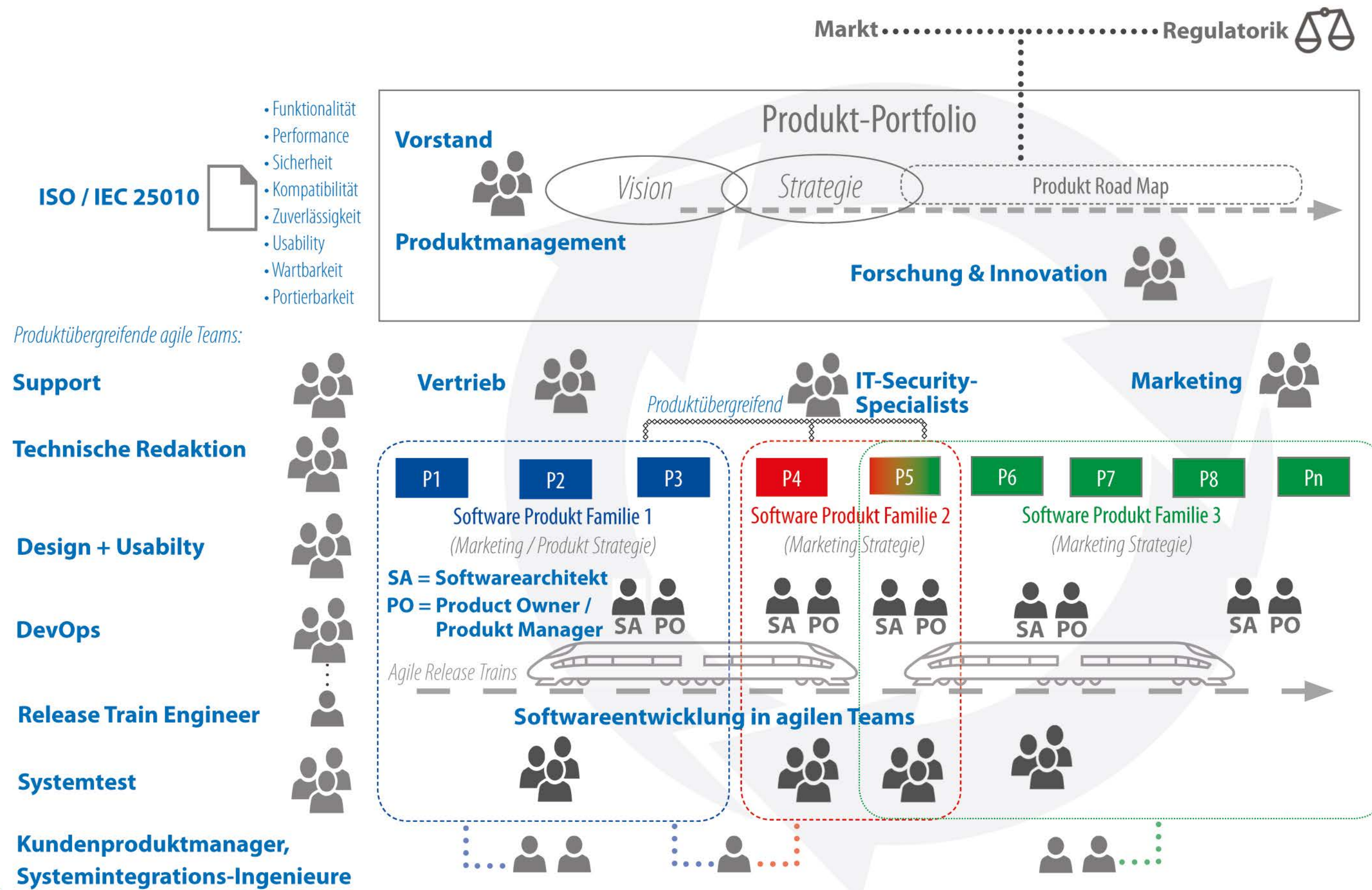Ensuring quality and availability

API Governance
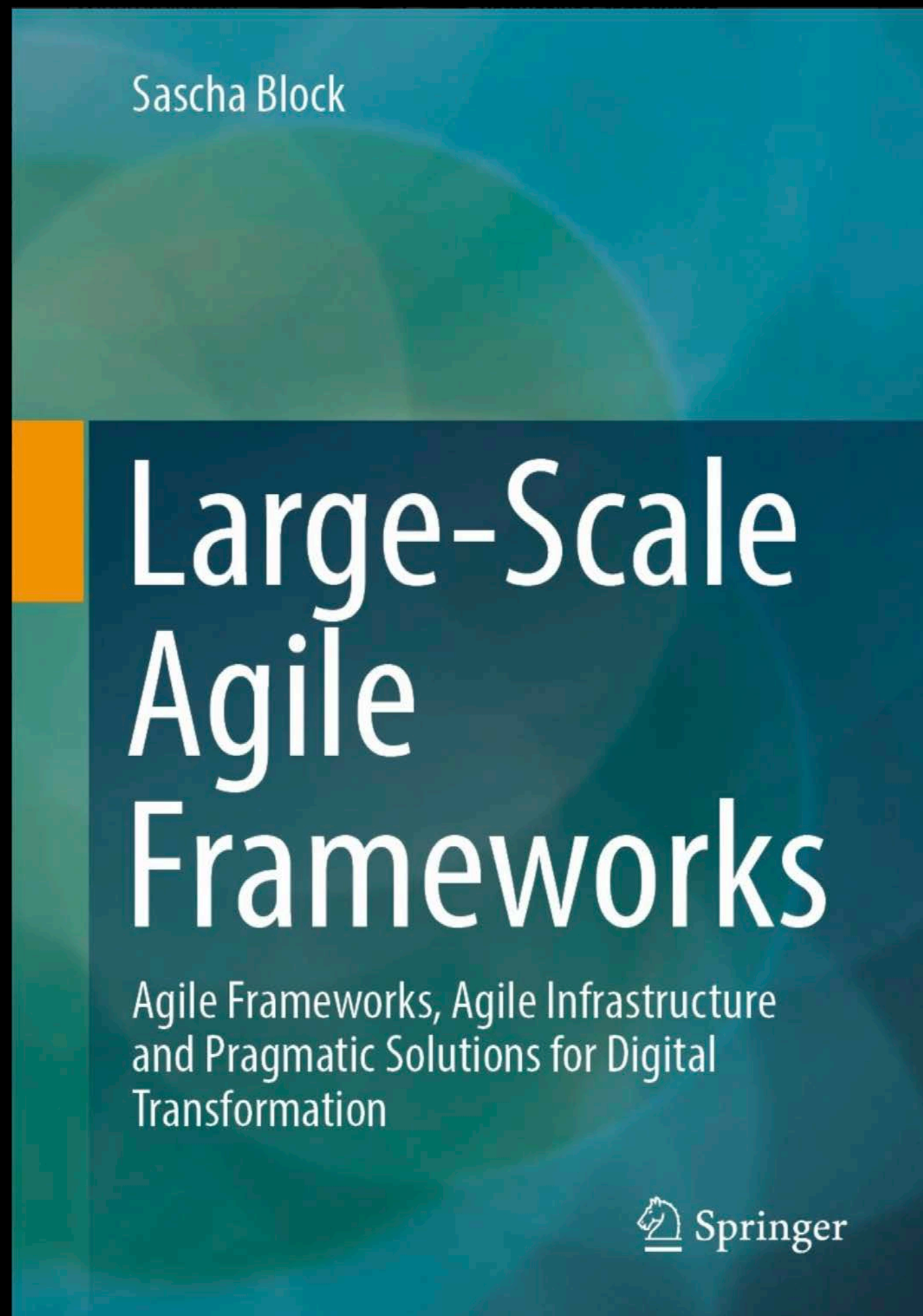Rules for robust and standardized APIs
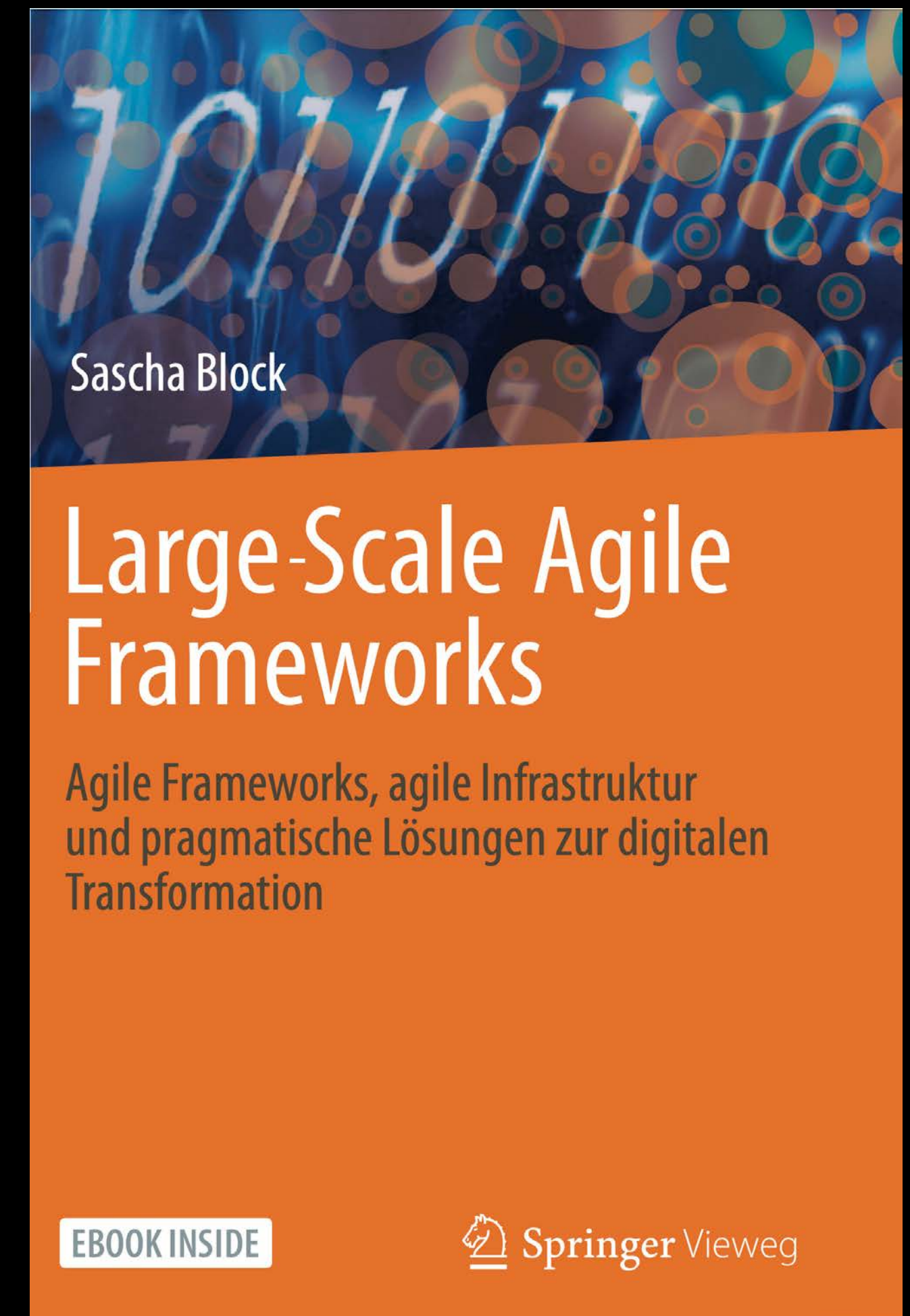
Large-Scale Agile

Agiles Software-Portfolio-Management

What this talk is based on

✅ Field-proven insights into **agile transformation** across **govTech**, public domains and industry sector

✅ **Large-Scale Agile** Frameworks and pragmatic solutions for successful **Digital Transformation**

✅ **Secure software development** as a structural capability – not an afterthought

✅ From **prototype** to platform: How to embed innovation cycles in **digital solutions** and **customer-centric** service landscapes

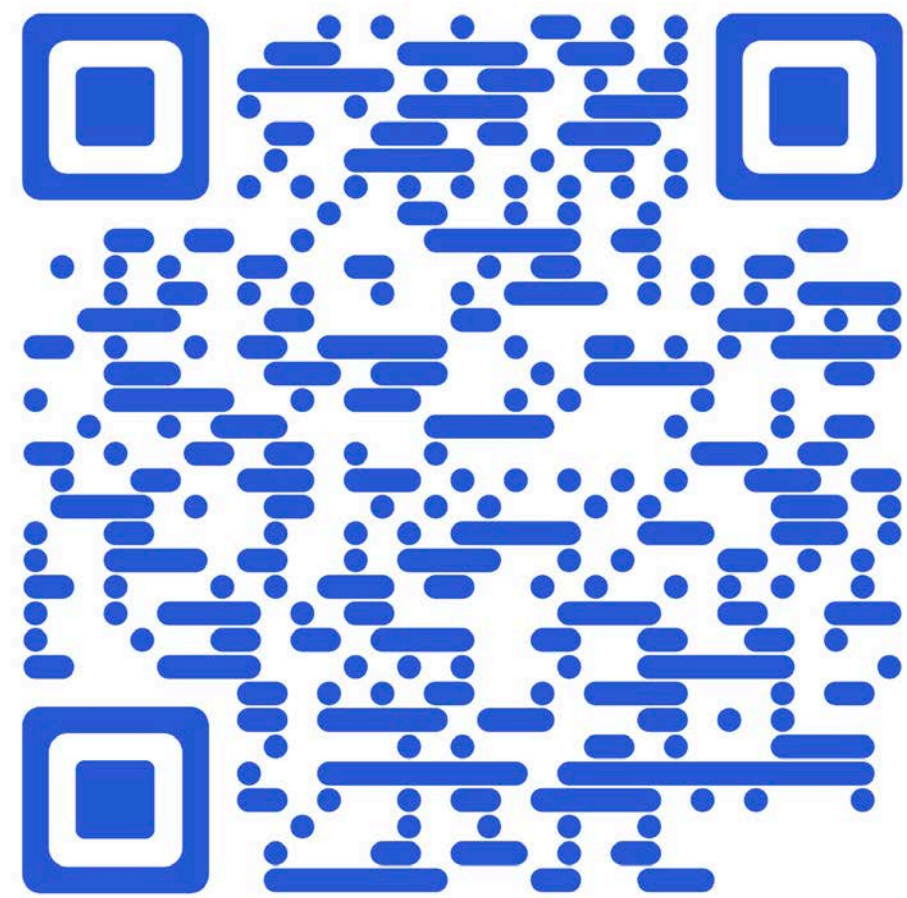✅ **Governance**, **IT architecture** & agility combined for sustainable transformation

Sascha Block

Large-Scale Agile Frameworks

Agile Frameworks, Agile Infrastructure and Pragmatic Solutions for Digital Transformation

Springer

Sascha Block

Large-Scale Agile Frameworks

Agile Frameworks, agile Infrastruktur und pragmatische Lösungen zur digitalen Transformation

EBOOK INSIDE

Springer Vieweg

Thank you!

Your questions please!

Let's get connected!

rock the PROTOTYPE
rock-the-prototype.com

Digital sovereignty

begins with collaboration

Transparency, standards

and responsibility

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