SINCE 1994

Five trends *affecting* software testing.

WHAT THE AI ERA IS DOING TO THE QA PROFESSION · REX BLACK, INC.

The profession *renews every generation.*

The five trends called in 2005 — **all played out.**

Offshore QA teams. TDD and CI. Software getting cheap and good enough. HIPAA → GDPR → EU AI Act. ISTQB as baseline credential.

This deck is the next round.

WHAT THIS IS ABOUT

In plain English.

Every ~20 years, the software testing profession reshapes itself around a new set of forcing functions. If you're building skills for the last cycle, you're already late.

This talk names the five macro-forces reshaping testing **right now**, on a 3–5 year horizon:

- **How AI-generated code** changes the test denominator.
- **Why platform engineering** eats test environment management.
- **How regulation and liability** turn testing evidence into a legal artifact.
- **Why the software supply chain** is the largest unaudited risk most products have.

TREND 1 OF 5

AI-generated software & *AI-assisted testing.*

TREND 1 · AI CHANGES THE DENOMINATOR

Dev velocity up. *Test capacity same?*

Engineering teams are shipping **AI-drafted code at several multiples of historical velocity.**

If test capacity doesn't scale proportionally, the bottleneck simply **moves** — from *"not enough developers"* to *"not enough testers."*

THREAT

Volume of code outpaces human test capacity. Testing becomes the

WHAT TO LEARN

LLM-based test generation and critique. Agent-driven exploration. Model-eval

TREND 2 OF 5

Platform engineering

&

ephemeral test environments.

TREND 2 · PLATFORMS EAT ENVIRONMENTS

Test env management is a *platform discipline now.*

Internal Developer Platforms absorb what used to be ad-hoc infra work. Engineers self-serve dev / test / staging through a platform layer. **Infrastructure is code.**

THREAT

Test environment management is being **absorbed by platform engineering.** QA teams that don't participate get what's left over.

WHAT TO LEARN

Infra-as-code (Terraform / Pulumi).[7] Ephemeral preview environments. K8s test fixtures. CI/CD pipeline design. **Environment observability.**

TREND 3 OF 5

Regulation.
Product liability.
AI governance.

TREND 3 · TESTING IS NOW EVIDENCE

Test records are *legal artifacts.*

What began with SOX and HIPAA has **compounded.** GDPR. State privacy laws. EU AI Act. SEC cyber-incident disclosure. Sectoral rules — IEC 62304, ISO 26262, financial services.

For AI-enabled products, governance adds a second stack: model documentation, evaluation disclosures, bias testing, model cards, **post-deployment monitoring.**

THREAT

Testing evidence is **discoverable.** A poor testing record is a legal liability, not just a

WHAT TO LEARN

Requirements traceability. Audit-grade test documentation. **OWASP ASVS.** AI-

TREND 4 OF 5

The software *supply chain.*

TREND 4 · YOUR RISK SURFACE » YOUR CODE

The largest *unaudited* risk.

Every shipping product is now mostly open-source and third-party code — frameworks, libraries, cloud services, external APIs, model providers.

SolarWinds. Log4Shell. xz-utils. All showed what happens when that surface goes untested.

THREAT

Product's risk surface is **bigger than the code the team wrote.** Testing scope has to expand or becomes irrelevant.

WHAT TO LEARN

SBOM tooling (Syft, Dependency-Track)[11]. **SCA / SAST integration.** API-contract testing (Pact, OpenAPI). Dependency-risk scoring. Third-party model

TREND 5 OF 5

Continuous quality via *observability*.

TREND 5 · PRODUCTION IS THE TEST SIGNAL

SLOs · error budgets · RUM.

The old line — *"testers test before ship, ops measures after"* — does **not survive** modern deployment cadences.

Feature flags. Progressive rollouts. Canary deploys. Real-user monitoring. SLO / error-budget discipline. **The biggest test signal in a mature organization comes from production.**

THREAT

Pre-production-only testing is insufficient. Production telemetry is **where the real quality signal is**

WHAT TO LEARN

SLO design. Error-budget accounting. Synthetic monitoring. RUM. Chaos testing. **Progressive delivery**

Five trends, one pipeline.

THE COMPOUNDING EFFECT

They don't act alone.

Trend 1 · AI-generated code raises test volume,
which forces
Trend 2 · Platform-engineered automation,
which produces
Trend 3 · Audit-ready evidence for regulators,
covering
Trend 4 · Third-party dependencies,
fed by
Trend 5 · Production telemetry.

The test-engineering role that **survives the next cycle** is the one that operates across all five.

Five years.

Five trends.

One professional you.

SKILLS LADDER

Without a career restart.

- **Year 1** — AI-assisted testing tools. Solid LLM-evals foundation.
- **Year 2** — Infra-as-code and CI/CD. Commit the test-environment model to git.
- **Year 3** — Audit-grade traceability. One compliance specialty (AI governance, medical, or financial).
- **Year 4** — Supply-chain testing. SBOM, SCA integration.
- **Year 5** — Ownership of production quality signal. SLOs, error budgets, synthetic monitoring.

Five years. Five trends. One professional you.

Build for the *next round*.

Not the last one.

TAKEAWAYS

Five to hold against.

- **Profession renews every generation.** Five calls in 2005 all played out. These five will too.
- **AI changes the denominator.** If dev velocity 3–10× and test capacity stays the same, the bottleneck moves — or quality drops.
- **Testing evidence is a legal artifact.** Traceability is risk management, not hygiene.
- **Product isn't just your code.** Supply chain is the largest unaudited surface.
- **Production is the biggest test signal.** Pre-production-only testing leaves it on the floor.

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Thank you.

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