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ARCHDAYS

Architecture at Scale

How architectural decisions are made at a large fintech

Agenda

Architecture to practical tools

- Why architecture must scale
- Booch, Kruchten, levels
- Software: RFC, ADR, groups
- Solution: SLA, contracts, debt

Part 1

01

Why Scale

The context of a large fintech group

Why architecture becomes a discipline

Context Scale

Meeting agreements stop scaling

- 12M+ customers
- Multi-product ecosystem
- Team growth — onboarding knowledge
- Distributed teams — decentralized decisions

Part 2

02

What Is Architecture

The definitions we rely on

Architecture = significant decisions

Trajectory & boundaries

Definitions Booch & Kruchten

- Booch: significant system decisions
- Significance = change cost
- Trajectory — system direction
- Boundaries — costly to revisit

Part 3

03

Three Levels of Architecture

Software · Solution · Enterprise

Three architecture levels

Levels | Comparison

Software · Solution · Enterprise

- Software — team; IDE, UML
- Solution — department; wiki, boxes & arrows
- Enterprise — company; ArchiMate
- Themes: patterns → options → strategy

Enterprise architect is a mythical role

Roles Architects

Where each one grows from

- Software architect — grows from developers
- Solution architect — from analysts, per project
- Enterprise architect — origin unknown

Part 4

04

Software Architecture

RFC, ADR, and working groups

Before

Typical software-level pain

Status Problems

- Verbal decisions get forgotten
- Teams reinvent their stacks
- Infrastructure code duplicates
- No design-review language

What we introduced

Solutions Tools

Light process, heavy effect

- RFC — public discussion
- ADR — short record: context, decision, consequences
- Working groups by domain
- Tech radar + review gate

Part 5

05

Solution Architecture

Contracts, SLA, and tech debt

Typical solution-level pain

Status Problems

Many services, no rules

- No SLA — consumers guess expectations
- Weak APIs create consumer hacks
- Tech debt reaches bankruptcy
- Broken dependency can drop the system

Design belongs to those who build

Solutions | Discipline

Decisions documented, tech debt funded

- Design owned by devs and analysts
- Document conditions and trade-offs
- Tech debt visible and funded
- Core and platform teams

Part 6

06

Enterprise Architecture

The same process — company-wide

The same decision process, just wider

Solutions Company

Unifying how IT decisions are made company-wide

- One decision process, company-wide
- Shared CI/CD and PaaS runtime
- Tech radar for external technology
- Doc standards and InnerSource

Part 7

07

What We Ended Up With

Conclusions and next steps

What works at scale

Culture beats tooling

- Architecture = costly-to-revise decisions
- Three levels need different tools/people
- RFC / ADR make decisions visible
- Working groups, contracts, SLAs create trust

References

Architecture models, fintech case

- Patrick Kua — Scaling out architectural decision making
- Kruchten — A Mature Discipline? (SEI, 2020)
- Fundamentals of Software Architecture + Technology Strategy Patterns
- ThoughtWorks Technology Radar v.22

polomodov.tech

Thank you!

All slides and links — in the Telegram channel

Alexander Polomodov

Technical Director & Fellow,
T-Technologies



@book_cube