Architectural Skills

CSSE6400

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Quote

Architecture is the stuff you can't Google.
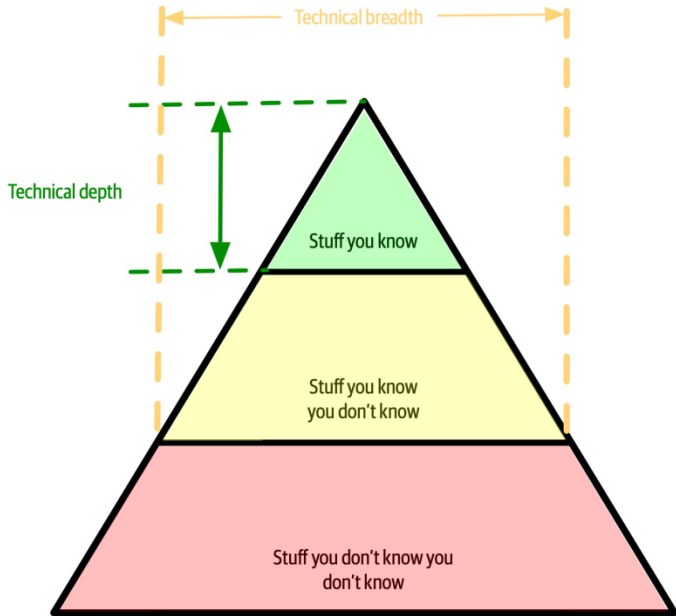– Mark Richards *[Richards and Ford, 2020]*

Quote

There are no right or wrong answers in architecture—only trade-offs.
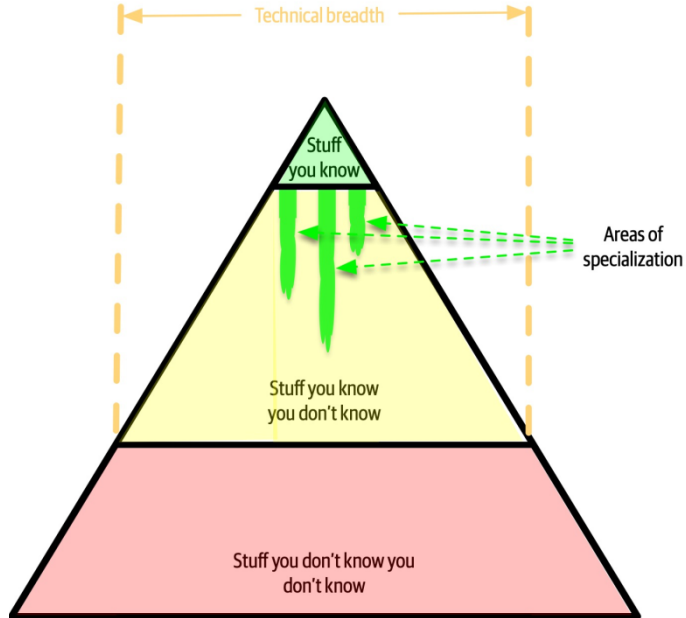– Neal Ford [Richards and Ford, 2020]

Architectural Design

Architects use knowledge and experience to analyse trade-offs to design architectures appropriate to the system context.

Developers – Technical Depth [Richards and Ford, 2020]

Architects – Technical Breadth [Richards and Ford, 2020]

Definition 0. Conway's Law

Organisations design systems whose structure is inevitably a copy of the organisation's communication structure[Conway, 1968][MacCormack et al., 2012].

Conway's Law Consequences

- Business Process Management

- Microservices to reflect organisation structure

- Teams formed around services

Conway's Law Consequences

Team insularity – more loyal to team than organisation

Conway's Law Issues

- Cross-cutting concerns
  - e.g. Security

- Organisation structure should align with market structure

- Physical location of teams

Definition 0. Peopleware [Neumann, 1977]

People involved in development of systems.

– Peter G. Neumann

Stakeholders [Coplien and Bjørnvig, 2010]

- End Users

- Organisation

- Customers / Sponsors

- Domain Experts

- Developers

- Written
  - For those who are not there

- Oral
  - Immediate & interactive

- Cloud Platforms
- Microservices
- APIs
- *Culture*

Evidenced-Based Software Engineering

Don't follow fads, seek evidence for good
practice.

Let's hear from an expert

Software Engineering's Greatest Hits

**what we actually know about software development
and why we believe it's true**

Greg Wilson

https://youtu.be/HrVtA-ue-x0

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