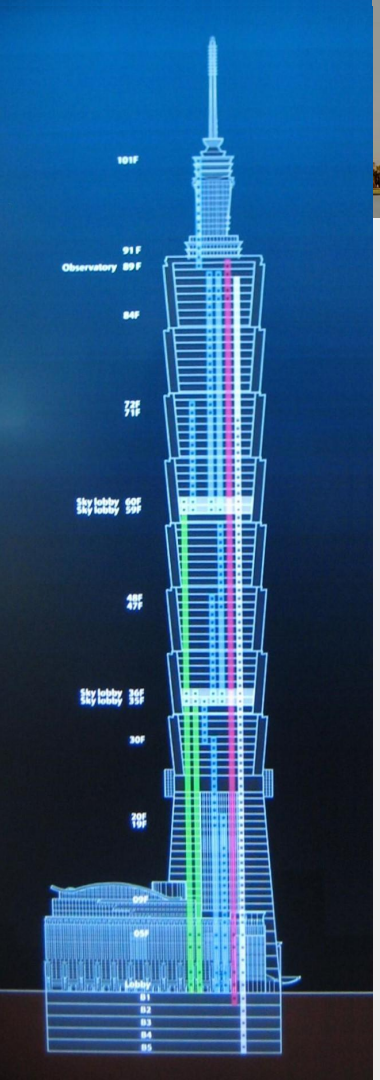

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Architects live in the First Derivative

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Singapore Smart Nation Fellow

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@ghohpe

The Architect?

The Architect?

The Architect?

The Role of Architecture

Change Changes Everything

Speeding Up

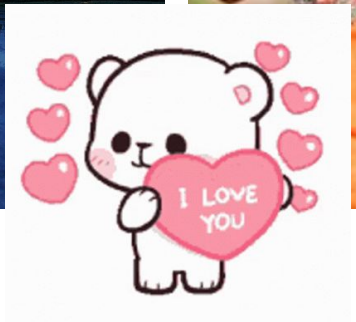
Architecture Creates Options

$$C(S_t, t) = N(d_1)S_t - N(d_2)Ke^{-r(T-t)}$$

$$d_1 = \frac{1}{\sigma\sqrt{T-t}}\left[\ln\left(\frac{S_t}{K}\right) + \left(r + \frac{\sigma^2}{2}\right)(T-t)\right]$$

$$d_2 = d_1 - \sigma\sqrt{T-t}$$

The higher the uncertainty, the more valuable the options



Architecture is finding stability in an unstable world

When do we not need any architects?

(and no architecture)?

When there’s no change…

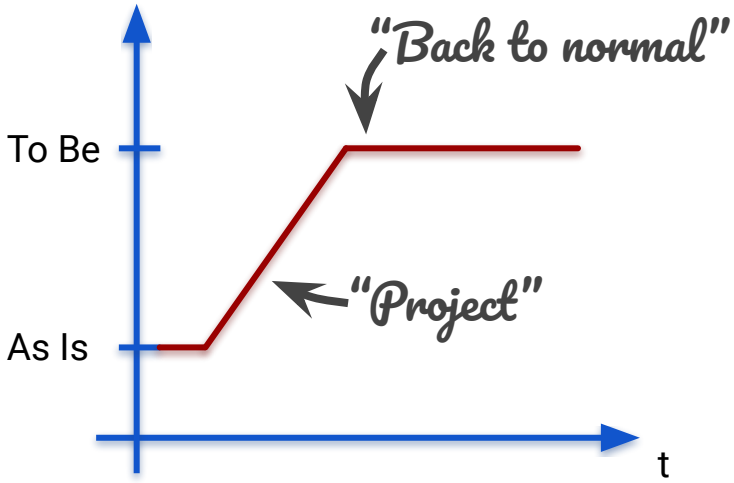
…there isn’t much need for architecture.

The Role of Architecture

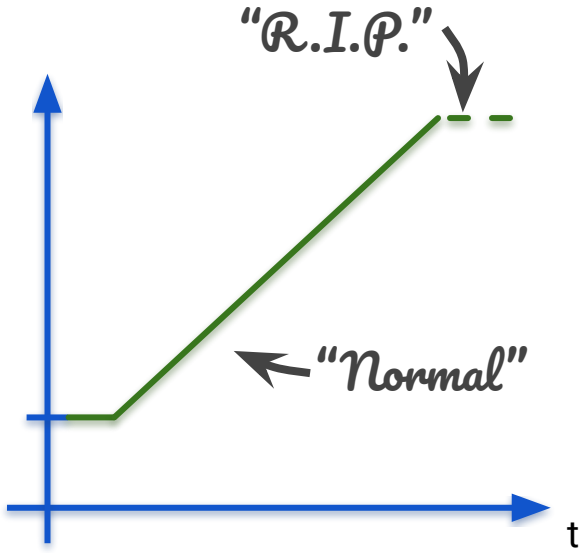
Change Changes Everything

Speeding Up

Is Change Normal?



"Guessing Right"



"Learning Fast"

Constant change is different from occasional change

Can’t speed up by pushing harder - need to think differently. Don’t burst the boiler

- Cloud model
- Automation not about efficiency
- Friction in software
- Multiple dimension

Speeding up

Disruption:

A development that you cannot fight by putting more coals on the fire or by putting more pressure in the boiler.


Friction

The Role of Architecture

Change Changes Everything

Speeding Up

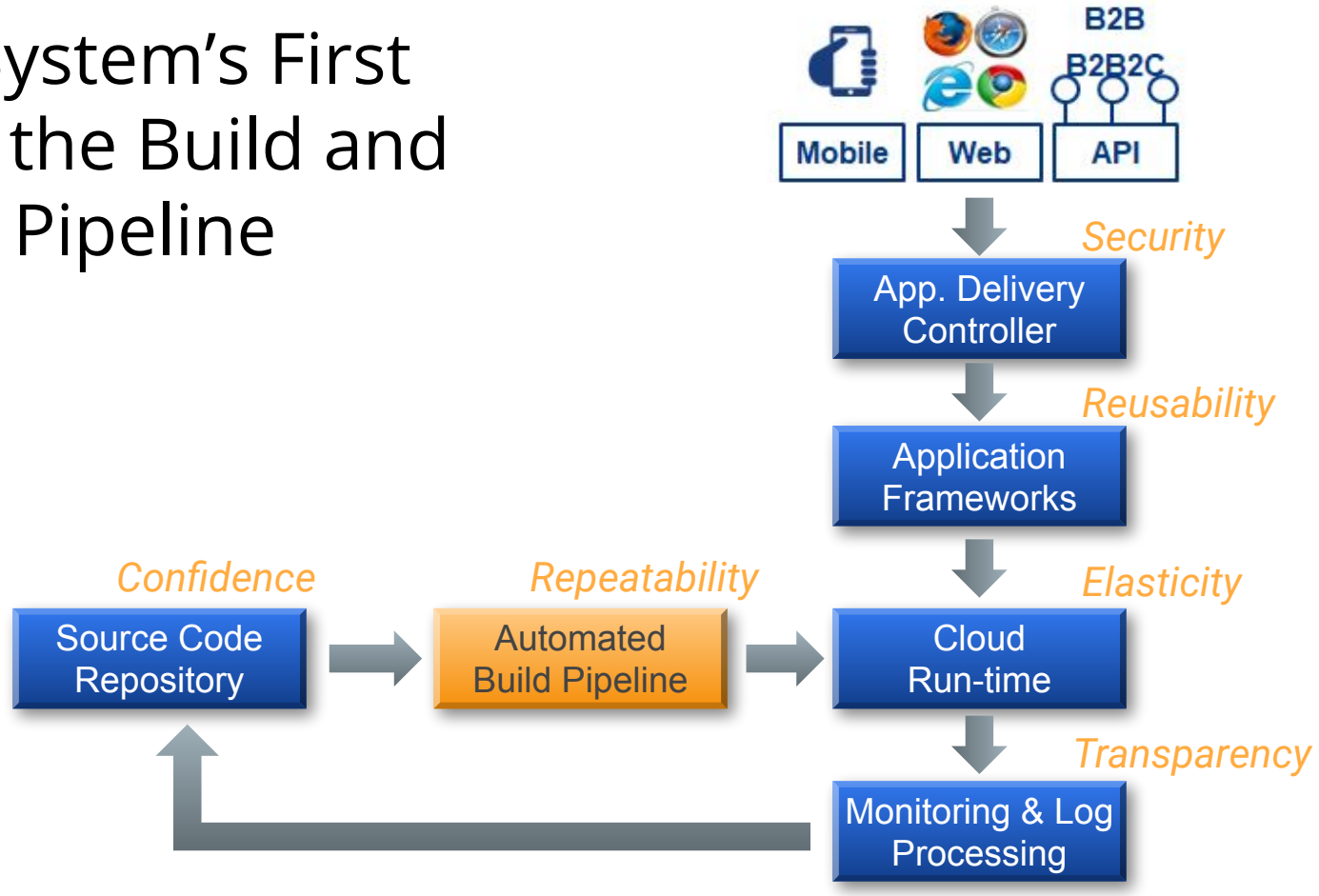
Speeding Up Software Delivery?

Reduce Friction → DevOps

Reduce Inventory → Lean

Avoid Unneeded Work → Agile

A Software System's First Derivative is the Build and Deployment Pipeline



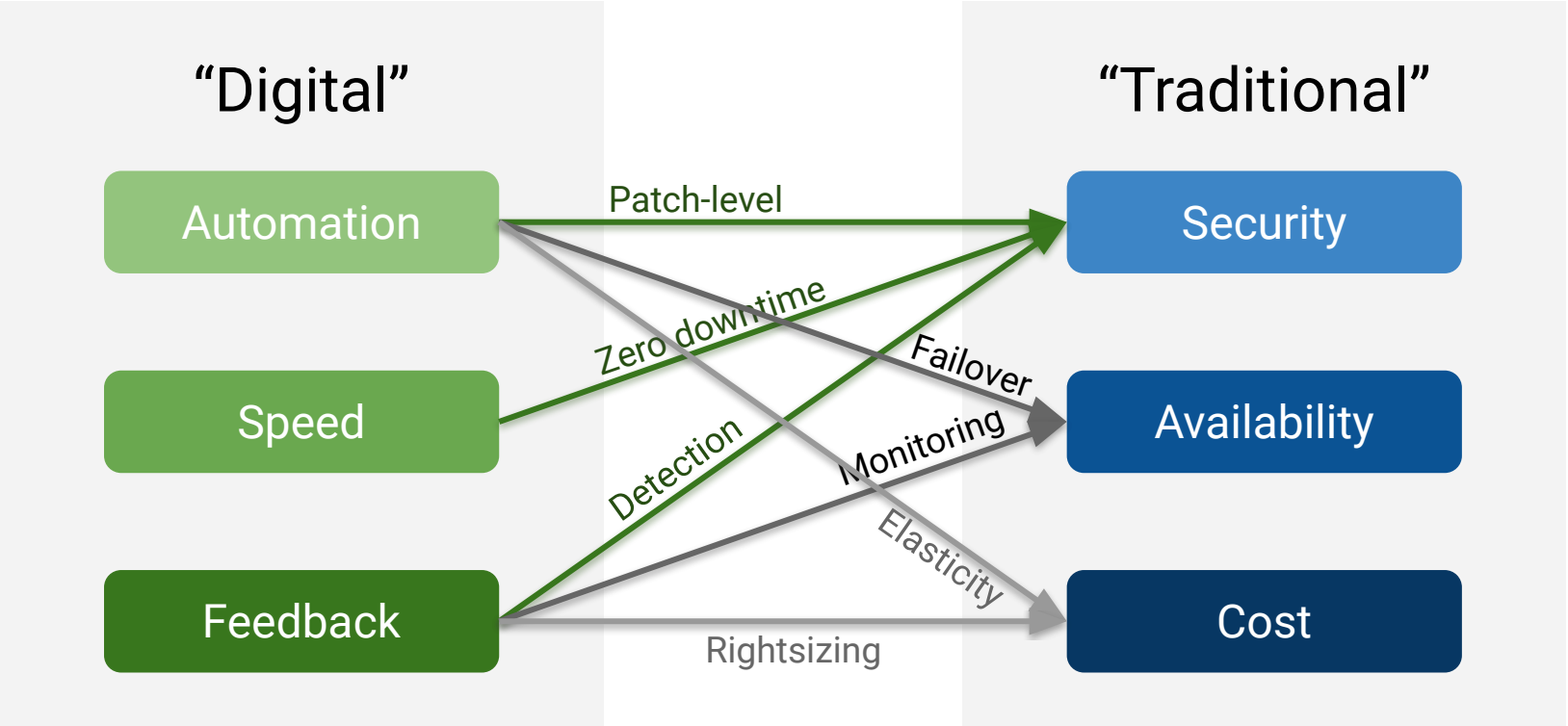
If you live in the first derivative, your tool chain needs to be production grade.

The Role of Architecture

Change Changes Everything

Speeding Up isn’t just going faster

Rethinking IT Architecture



https://cloud.google.com/blog/products/gcp/connecting-dots-how-cloud-operating-model-meets-enterprise-cio-needs

Speed enables disposability

Speed enables disposability

Speed increases quality: Automation

Speed

Launch products in days, not months.

Confidence

If you wonder whether it'll work, you'll hesitate and not fix what's broken,

Quality

Humans are error-prone.
Software is repeatable.

Continuous Improvement

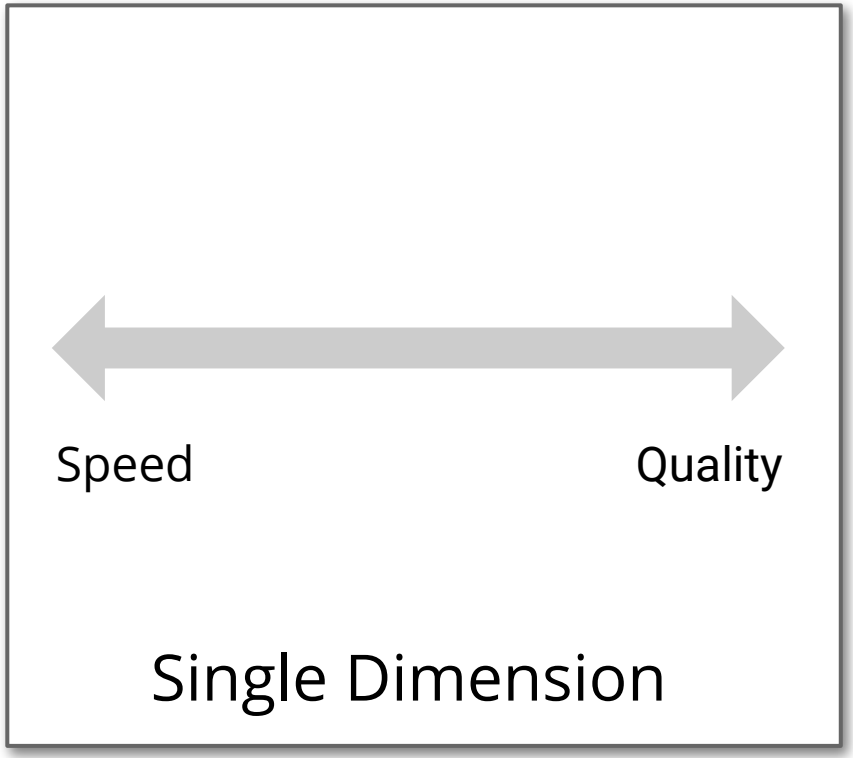
Easy to measure and to improve.

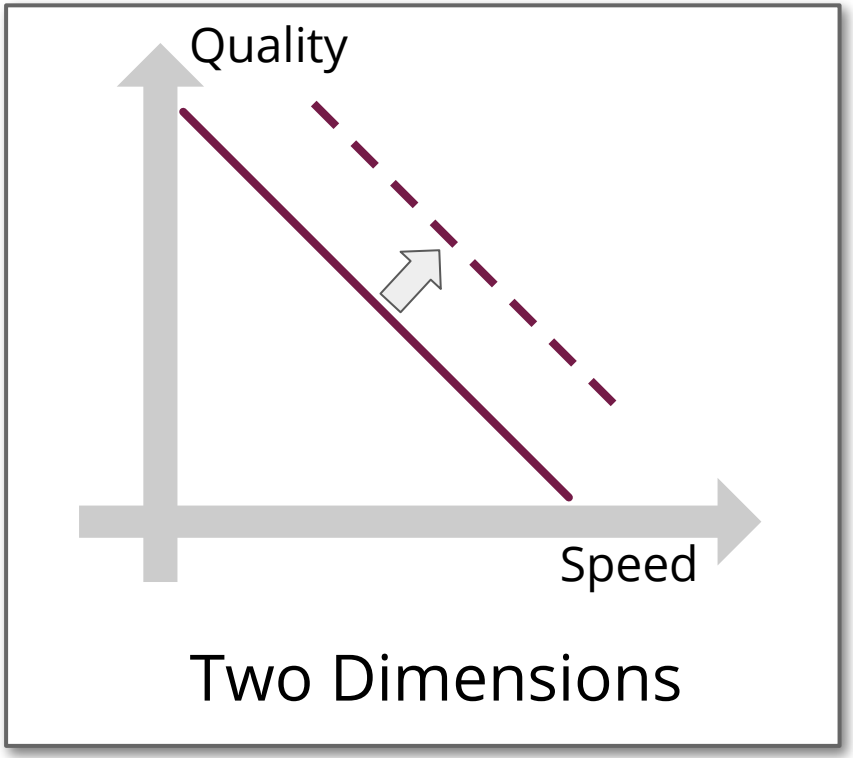
The Role of Architecture

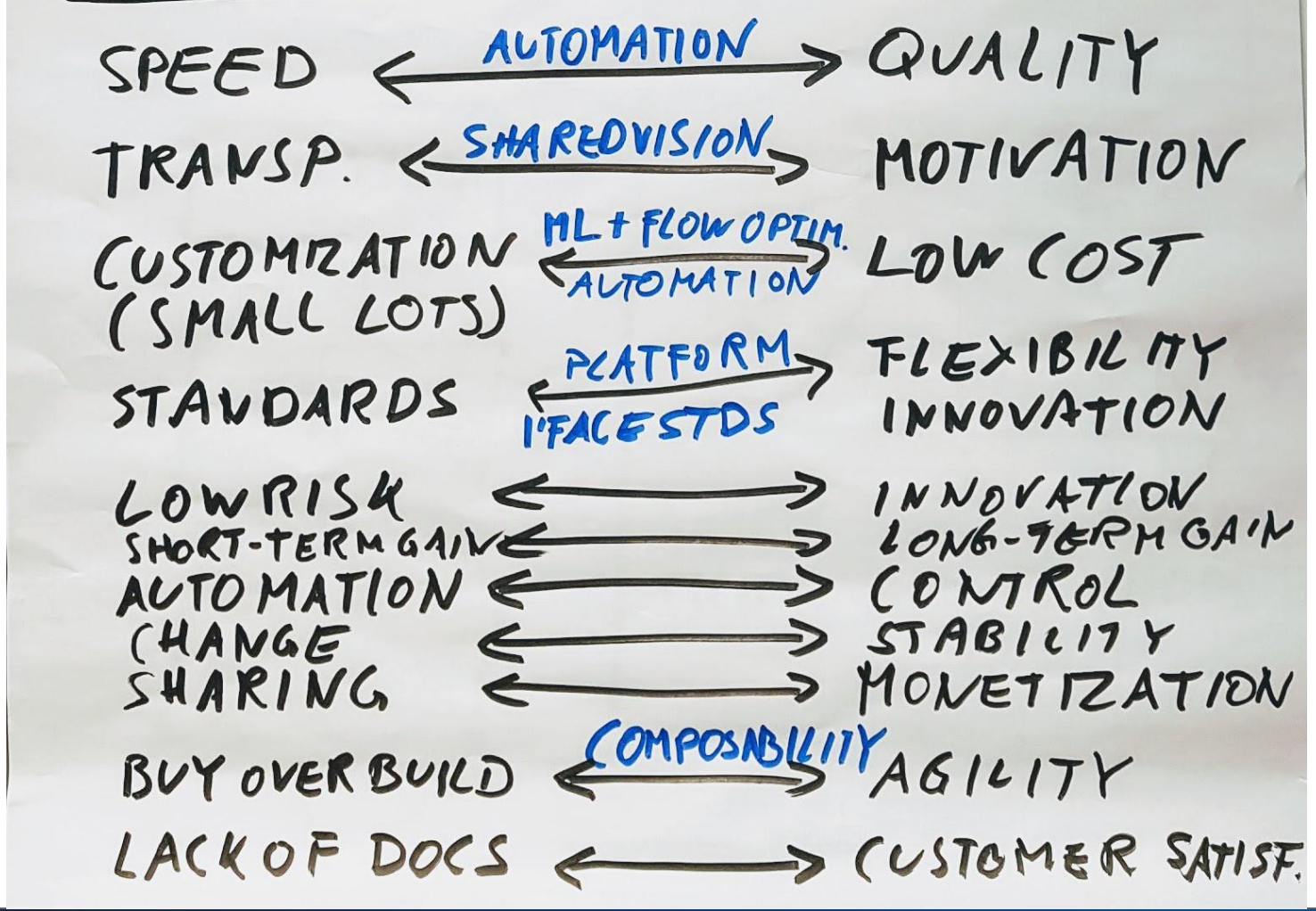
Change Changes Everything

Speeding Up the Org

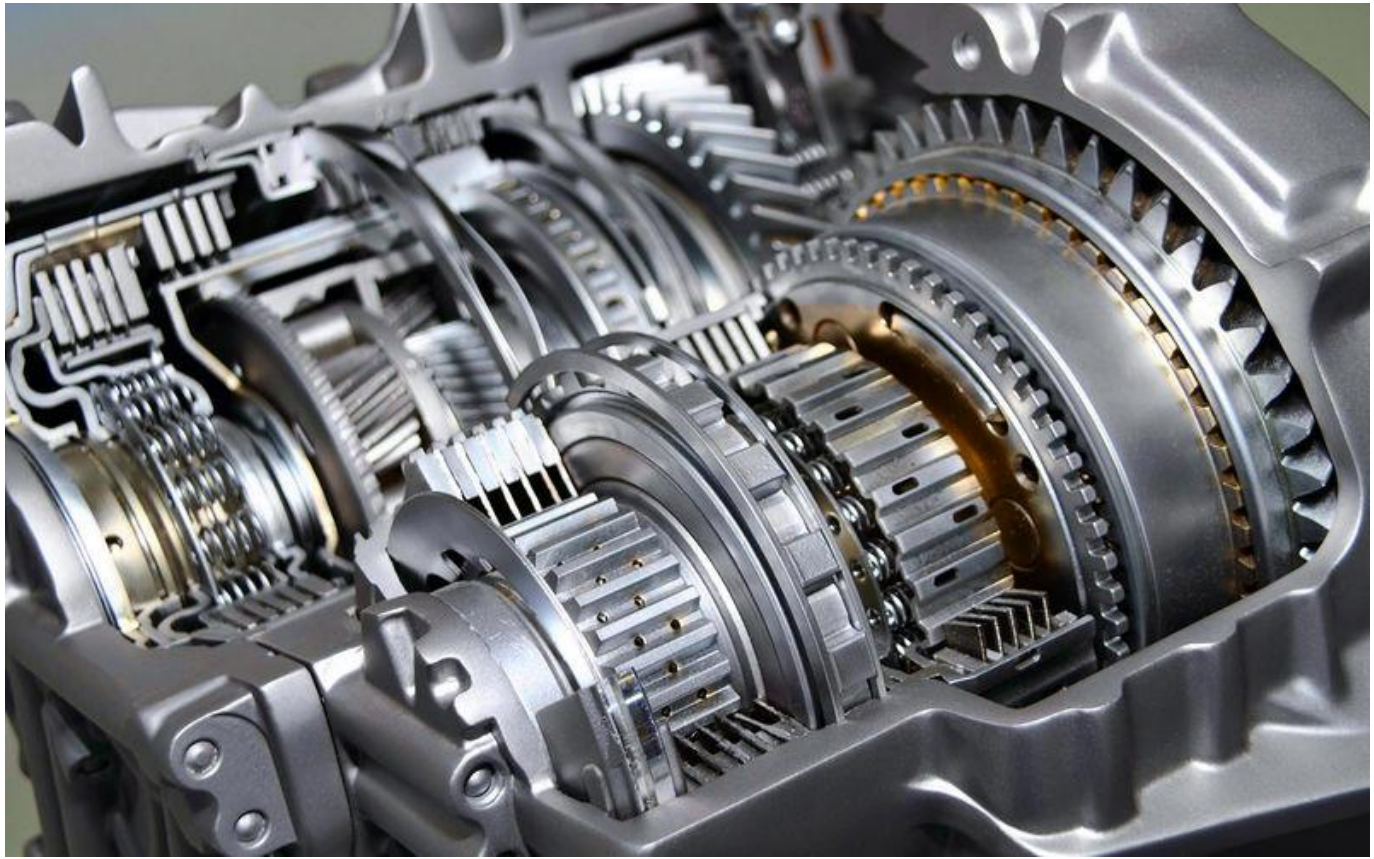
Dimensionality



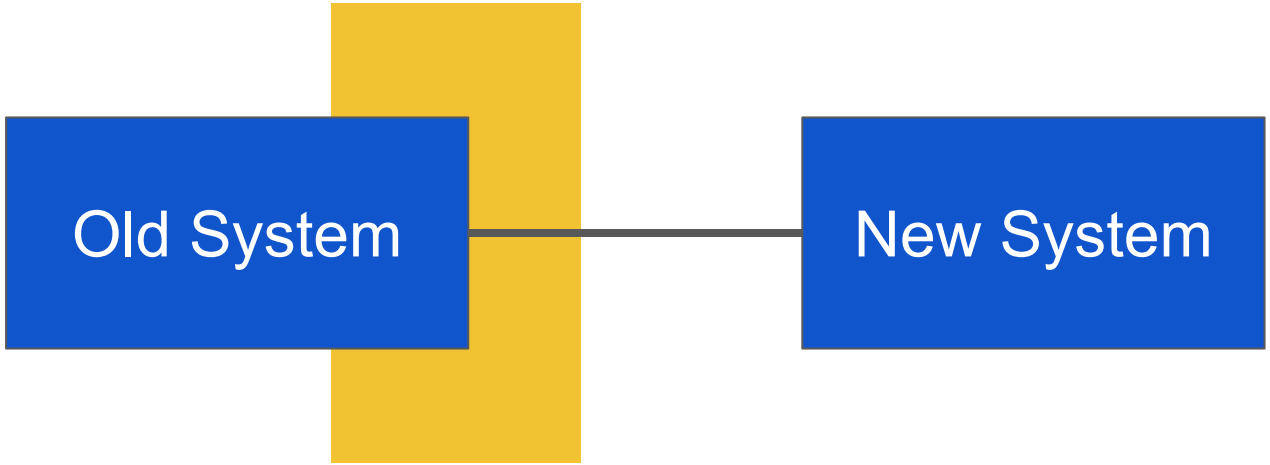



SPEED
AUTOMATION
QUALITY
TRANSP.
SHAREDVISION
MOTIVATION
CUSTOMIZATION (SMALL LOTS)
ML + FLOW OPTIM. AUTOMATION
LOW COST
STANDARDS
PLATFORM I'FACE STDS
FLEXIBILITY INNOVATION
LOW RISK
INNOVATION
SHORT-TERM GAIN
LONG-TERM GAIN
AUTOMATION
CONTROL
CHANGE
STABILITY
SHARING
MONETIZATION
BUY OVER BUILD
COMPOSABILITY
AGILITY
LACK OF DOCS
CUSTOMER SATISF.

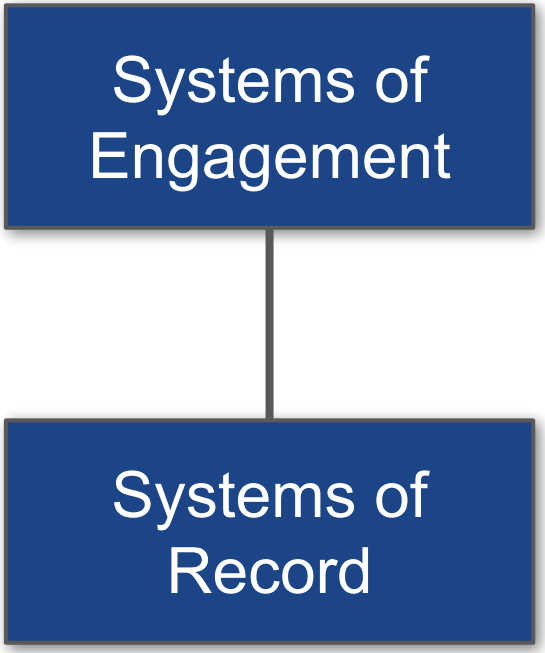
Shifting Gears - Need a Clutch



Anti-corruption layer



Two-Speed Architectures?



- Fast
- Interaction
- Modern

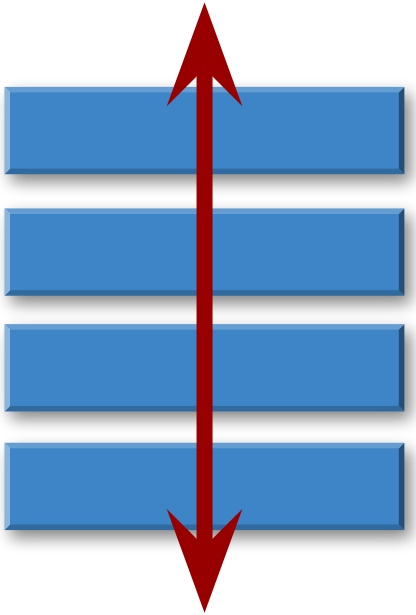
- Stable
- Data
- Business logic
- Legacy

Two-Speed Architectures - Grinding the Clutch

Layering

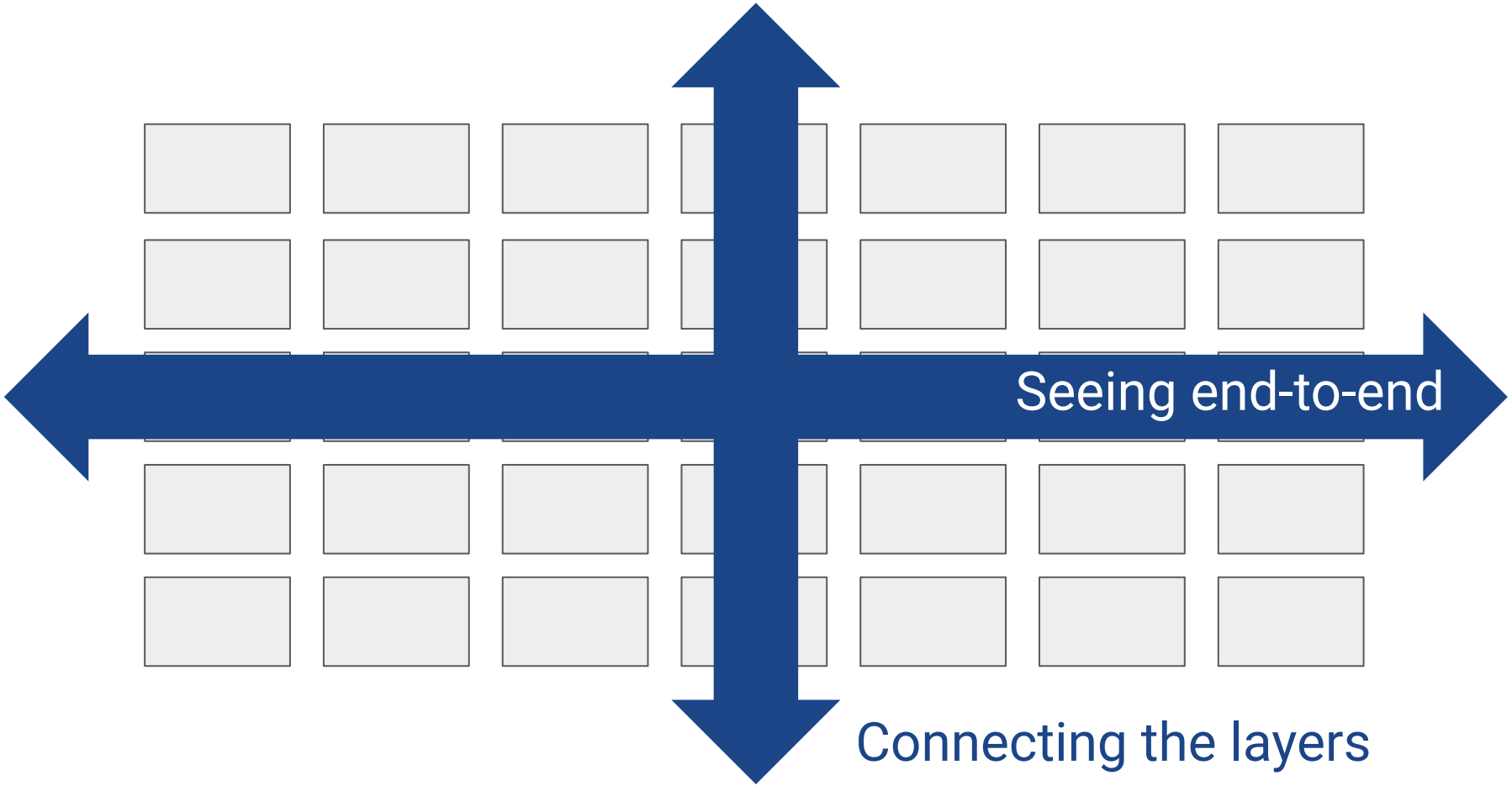
- Separation of concerns
- Abstract Details
- Clear dependencies
- Well-defined Interfaces
- Replaceability

“Structural”



- Overhead
- Local optimization
- Runtime latency
- Own complexity
- Changes propagate

“Behavioral”


Seeing end-to-end
Connecting the layers

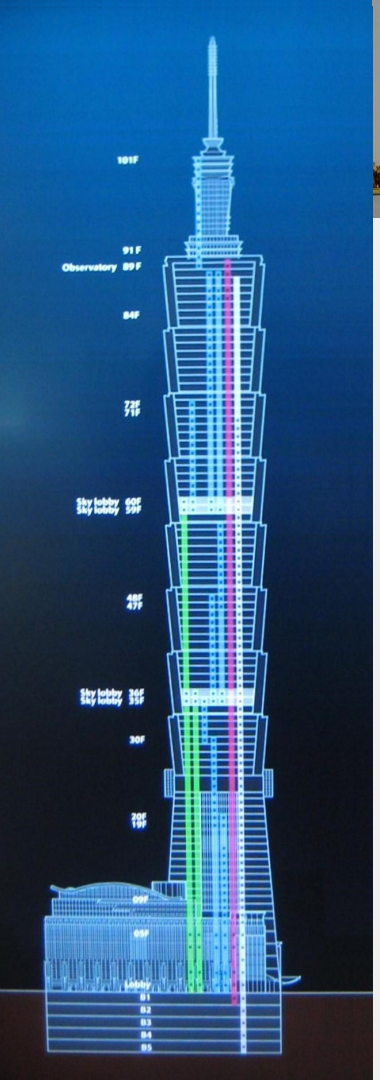
Seeing End-to-end

Local Optimization

- Product selection
- Dev and Ops
- Departments
- Projects
- Optimize Utilization
- Cost

Global Optimization

- System integration
- DevOps
- Tribes / Squads
- Products
- Optimize Flow
- Impact



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