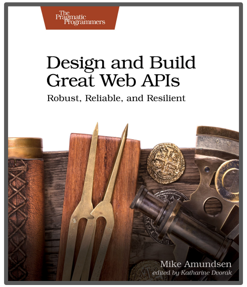
API Governance

Mike Amundsen
@mamund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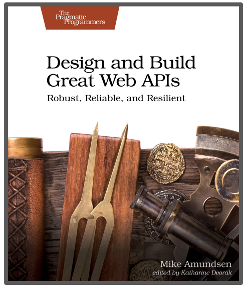
Robust, Reliable, and Resilient
Mike Amundsen
edited by Katharine Dvorak

API Governance

- Change Management for APIs
- Distributed Decision-Making
- Scaling your Governance Program



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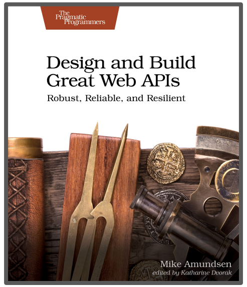
Change Management for APIs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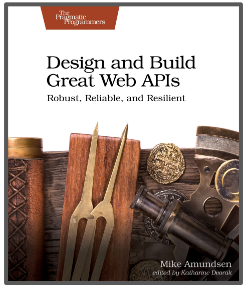
Change Management

- Changing an API
- Managing Change Continuously
- Improving API Changeability



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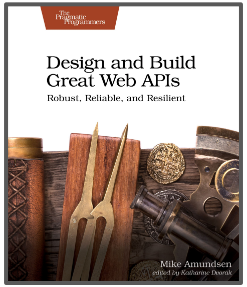
CM : Changing an API

- API Release Cycle
- Changing the Interface Model
- Changing the Implementation
- Changing the Instance
- Changing the Supporting Assets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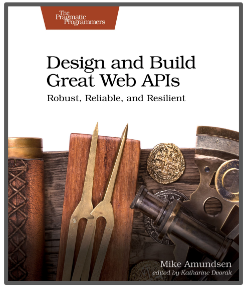
CM : Managing Change Continuously

- Incremental Improvement
- Change Velocity



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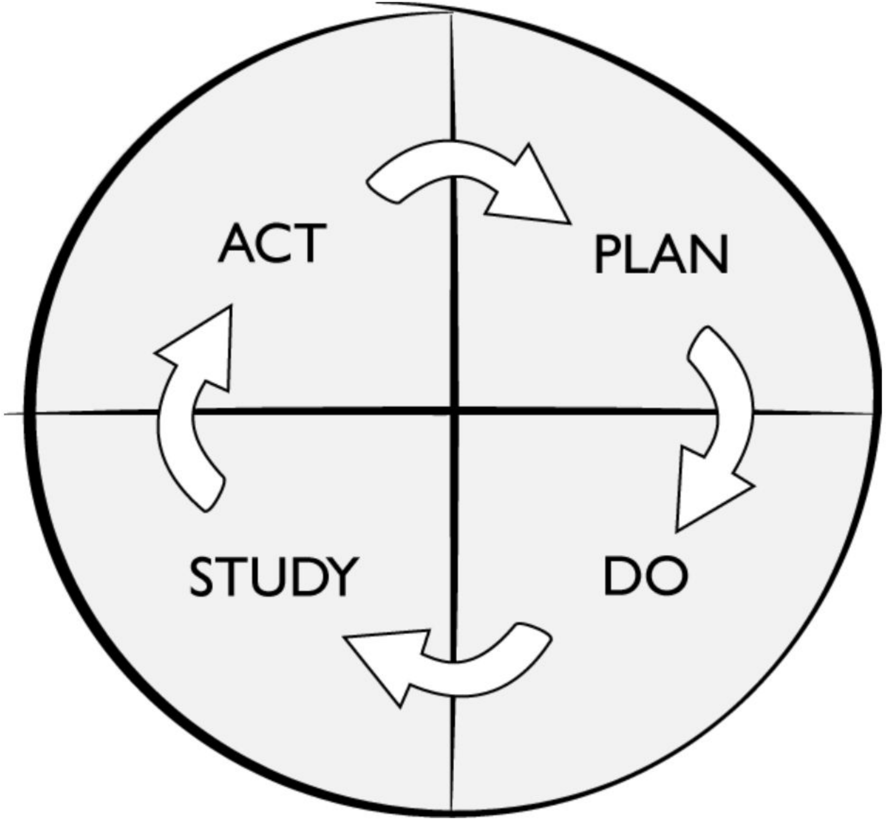
CM : Manage Change : Incremental Improvement

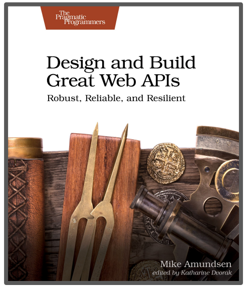


ACT

PLAN

DO

STUDY



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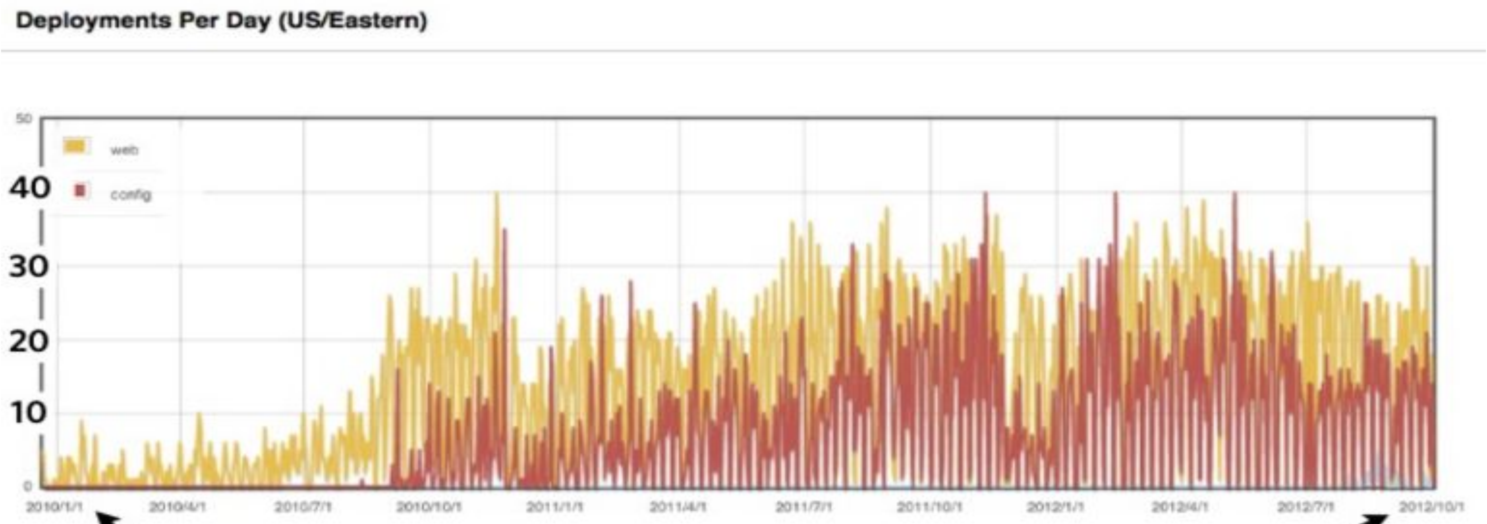
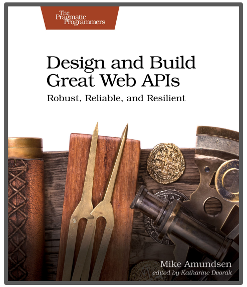


Very end of 2009

Today

Continuous Delivery – The Dirty Details, Mike Britain, Etsy (2015)

http://www.slideshare.net/mikebrittain/continuous-delivery-the-dirty-details/8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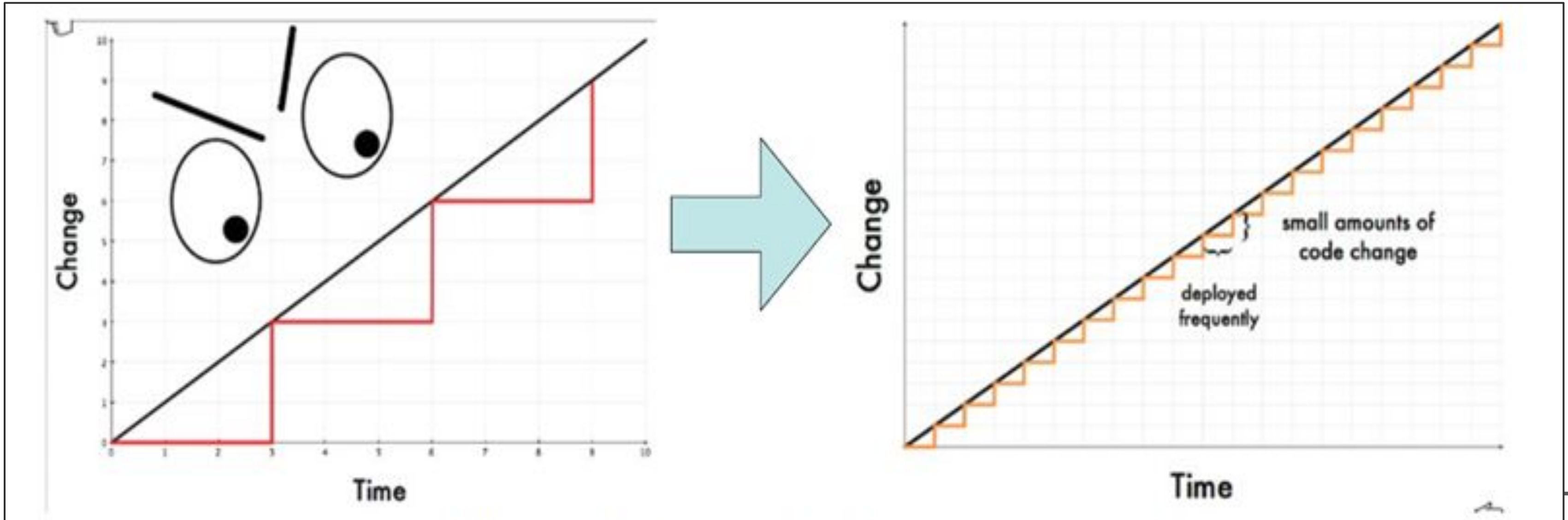
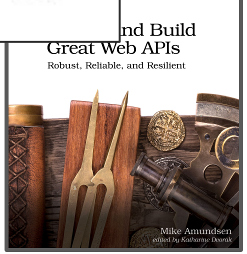
CM : Reduce Work in Progress



John Allspaw: “Ops Metametrics” http://slidesha.re/dsSZlr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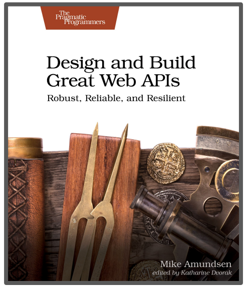
CM : Manage Change : Change Velocity

- Tools and Automation
- Organizational Design and Culture
- Eliminating Wasted Effort



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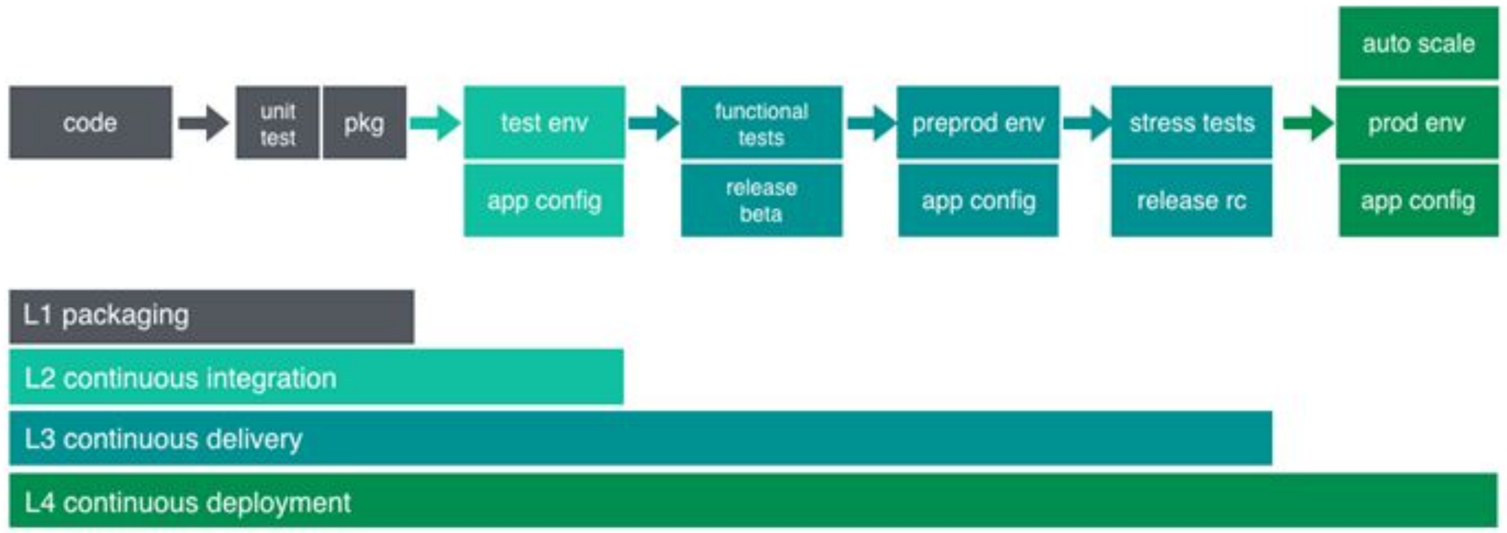


code → unit test | pkg → test env / app config → functional tests / release beta → preprod env / app config → stress tests / release rc → auto scale / prod env / app config

L1 packaging

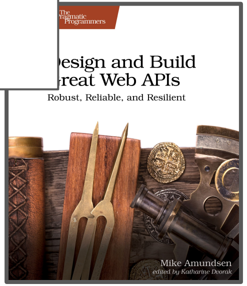
L2 continuous integration

L3 continuous delivery

L4 continuous deployment

Figure: Continuous deployment maturity model

9 things I wish I knew about CI/CD pipelines during first year of my startup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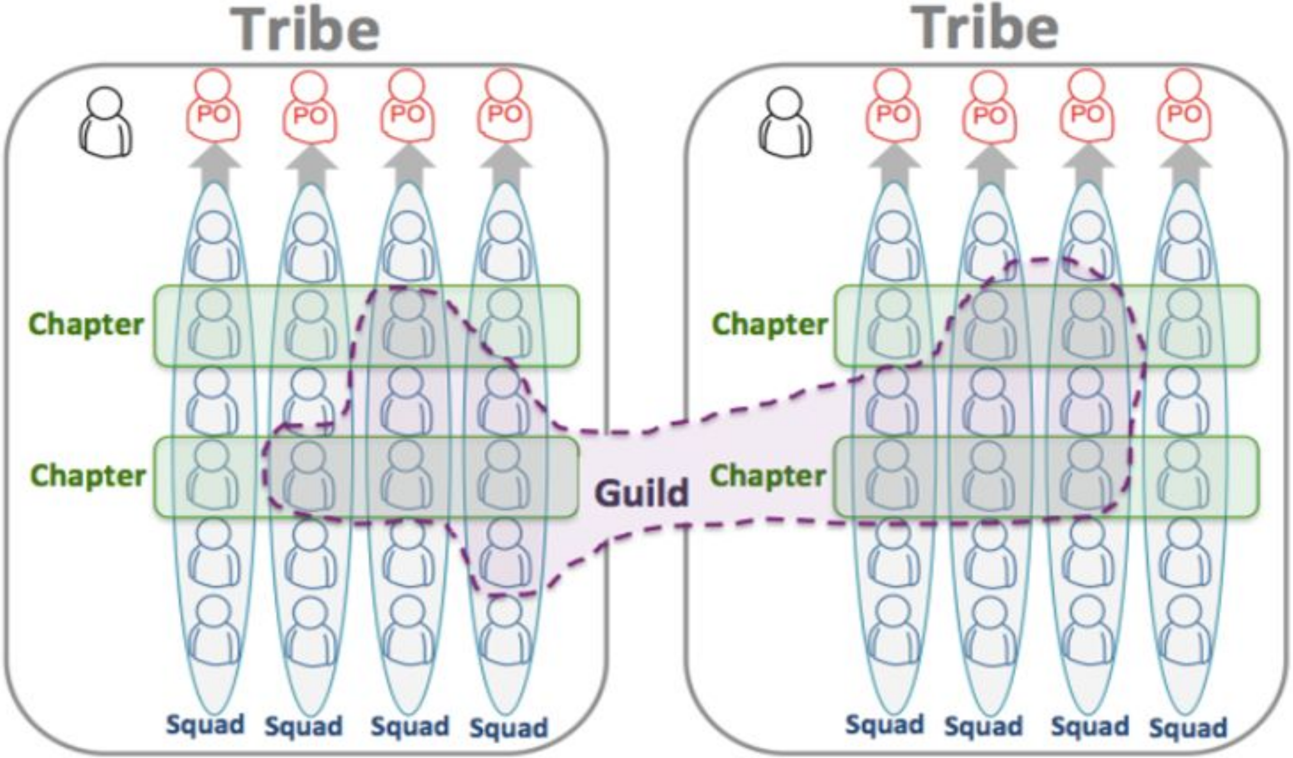
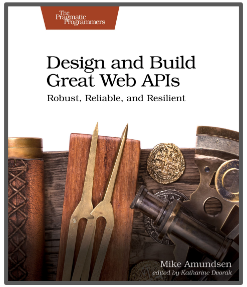
https://testcollab.com/blog/ci-cd-pipelines/

CM : Organizational Design and Culture

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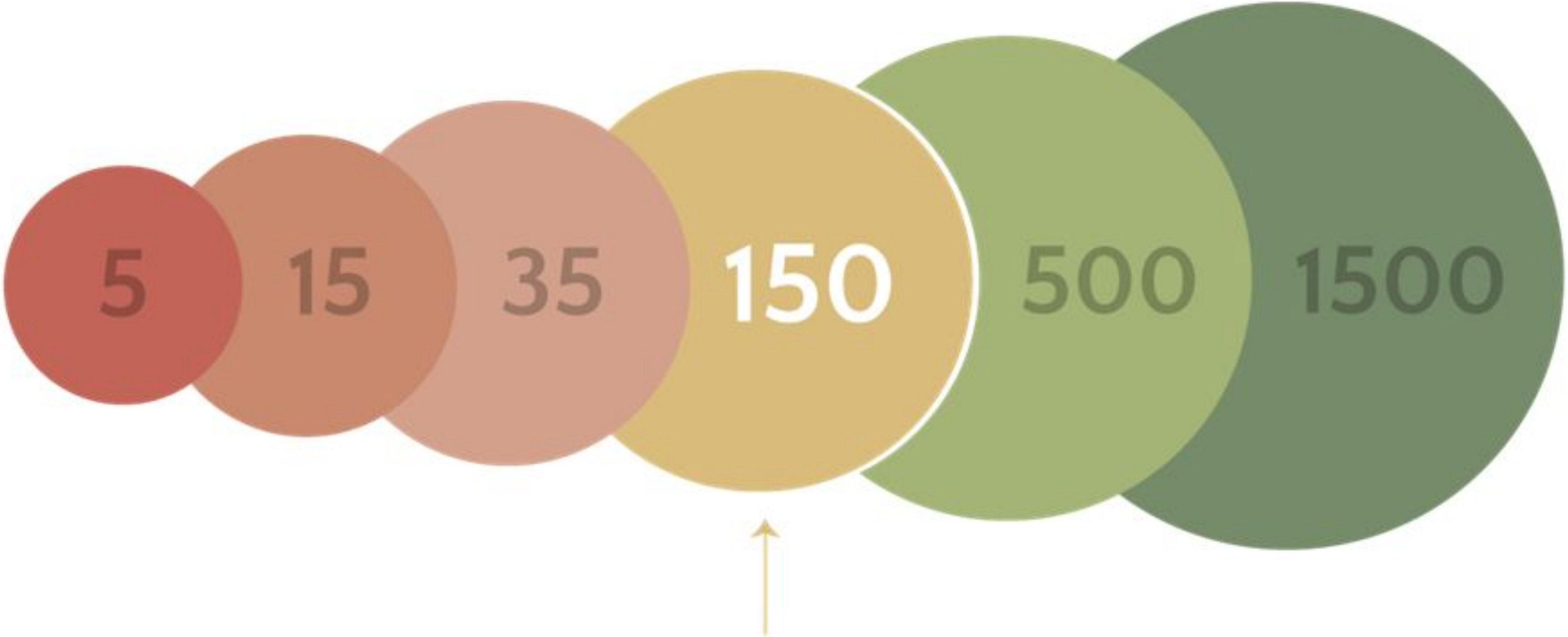
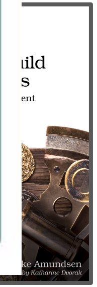
"Scaling Spotify", Kniberg & Ivarrson (2012)

https://dl.dropboxusercontent.com/u/1018963/Articles/SpotifyScaling.pdf



Dunbar’s Number

the max number of relationships a person can maintain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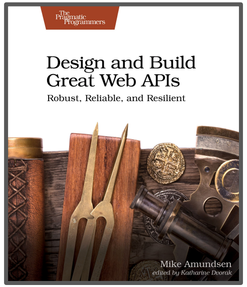
CM : Improving Changeability

- Effort Costs
- Opportunity Costs
- Coupling Costs



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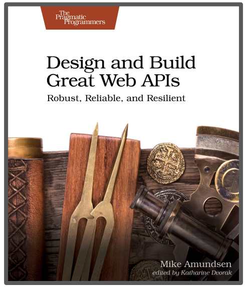
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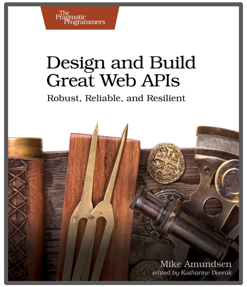
Distributed Decision-Making



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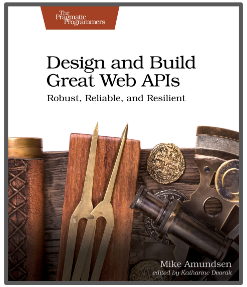
Distributed Decision-Making

- Understanding Decisions
- Governing Decisions
- DDM Examples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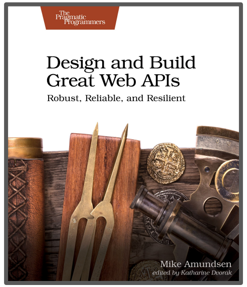
DDM : Understanding Decisions

- Decisions
- Governing Decisions
- Governing Complex Systems



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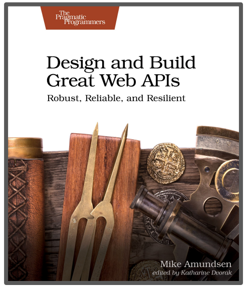
DDM : Governing Decisions

- Centralized vs. Decentralized
- Elements of a Decision
- Decision Mapping



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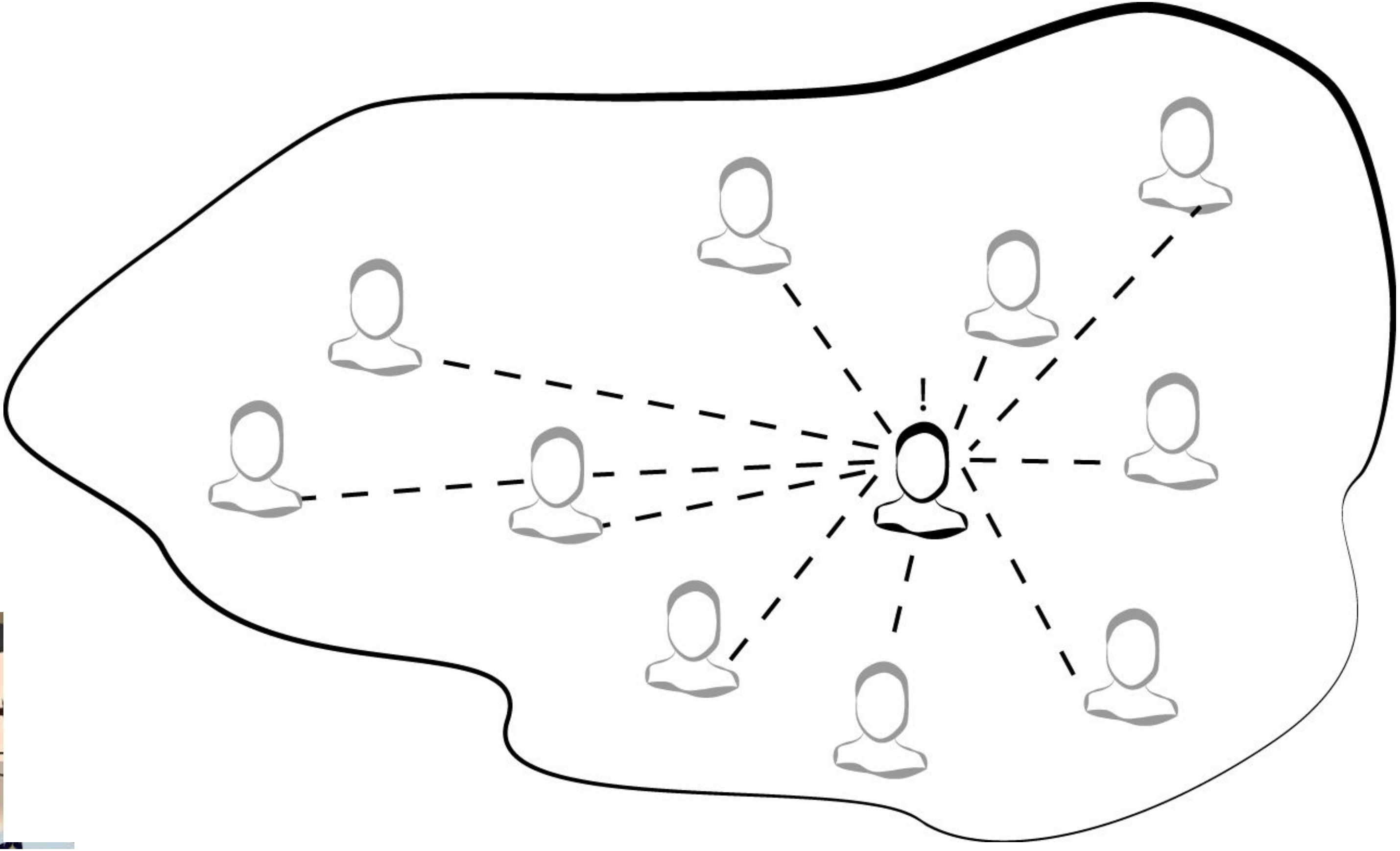
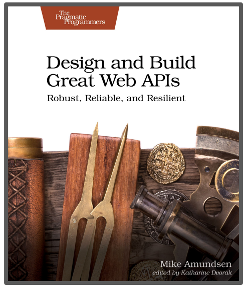
DDM : Centralized





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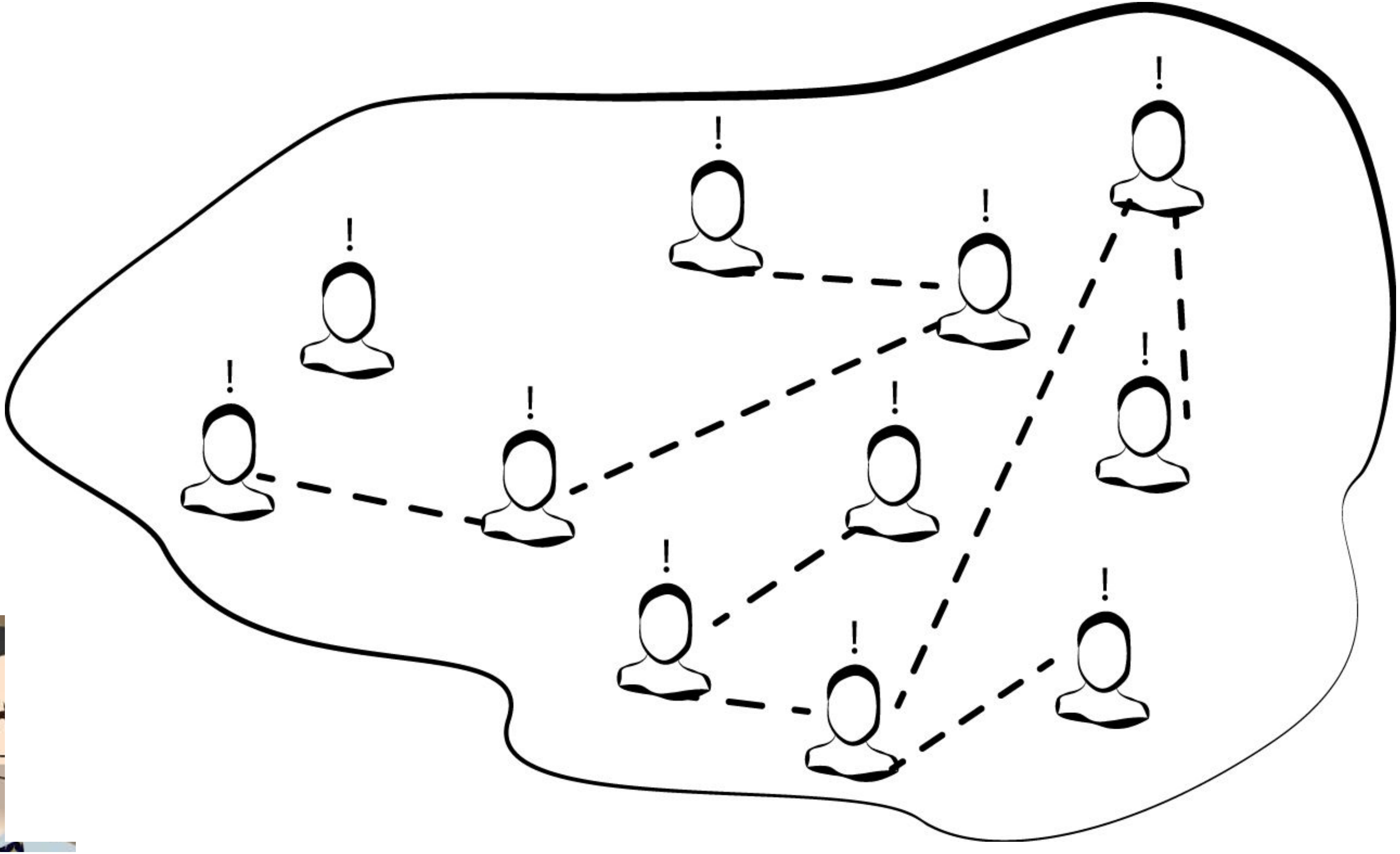
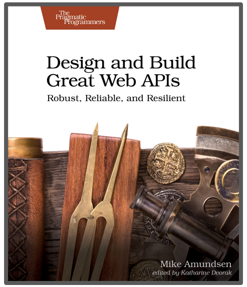
DDM : Decentralized





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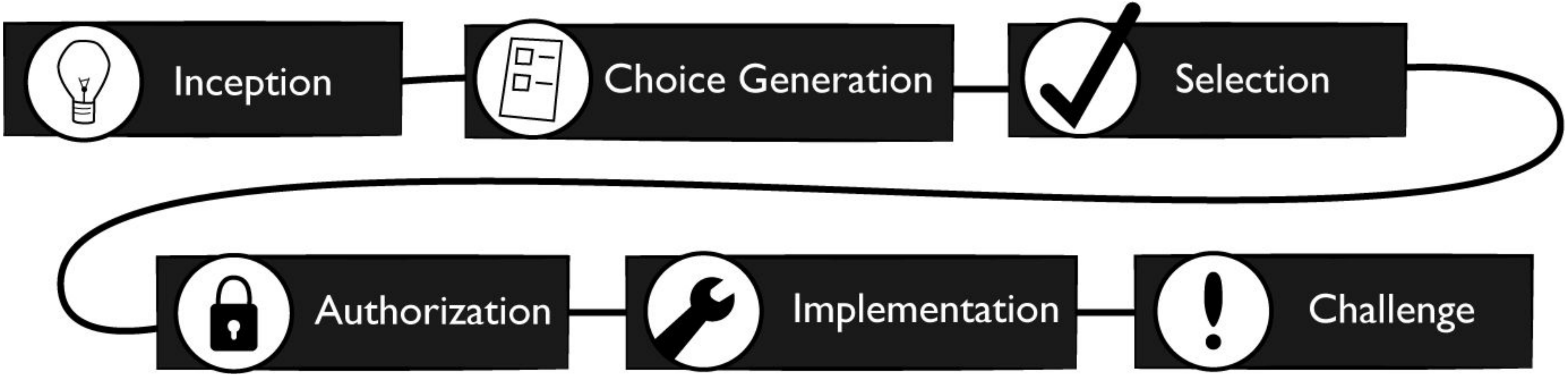
DDM : Elements of a Decision



Inception

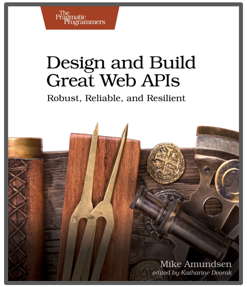
Choice Generation

Selection

Authorization

Implementation

Challenge



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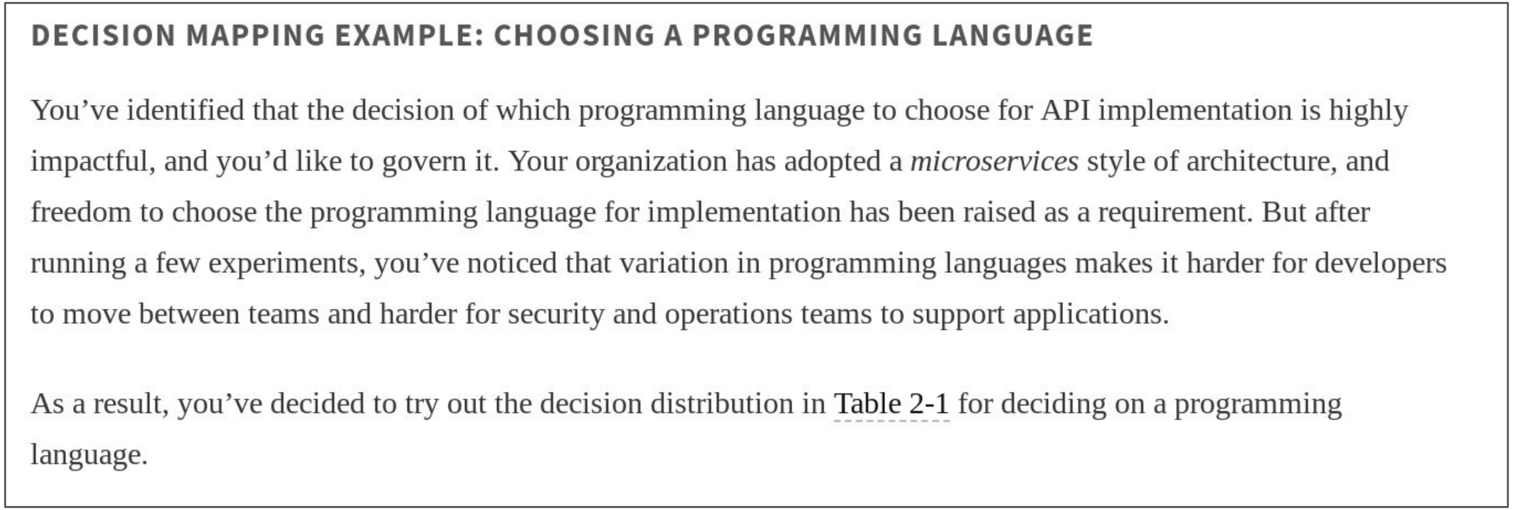
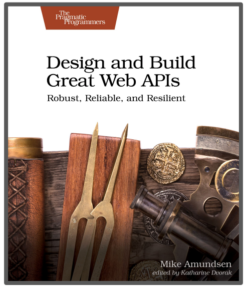
DDM : Decision Mapping



DECISION MAPPING EXAMPLE: CHOOSING A PROGRAMMING LANGUAGE

You’ve identified that the decision of which programming language to choose for API implementation is highly impactful, and you’d like to govern it. Your organization has adopted a *microservices* style of architecture, and freedom to choose the programming language for implementation has been raised as a requirement. But after running a few experiments, you’ve noticed that variation in programming languages makes it harder for developers to move between teams and harder for security and operations teams to support applications.

As a result, you’ve decided to try out the decision distribution in Table 2-1 for deciding on a programming language.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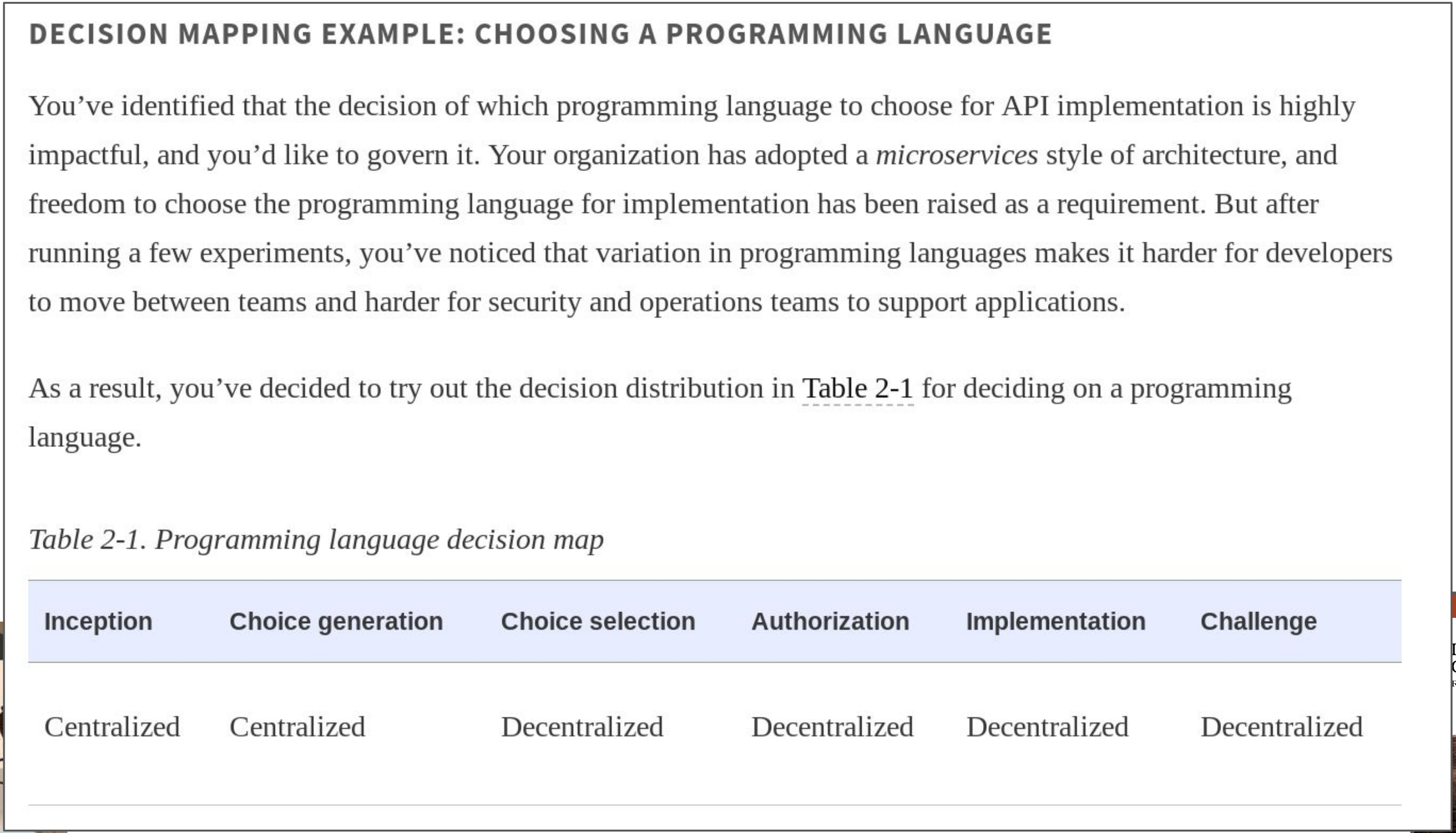

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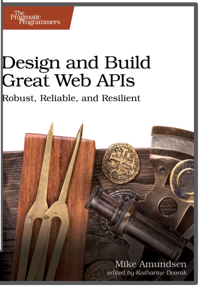
As a result, you've decided to try out the decision distribution in Table 2-1 for deciding on a programming language.

Table 2-1. Programming language decision map

Inception	Choice generation	Choice selection	Authorization	Implementation	Challenge
Centralized	Centralized	Decentralized	Decentralized	Decentralized	Decentralized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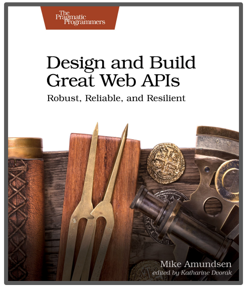
DDM : Examples

- Designing Decision Systems
- Example 1: Interface Supervision
- Example 2: Machine-Driven Governance
- Example 3: Collaborative Governance



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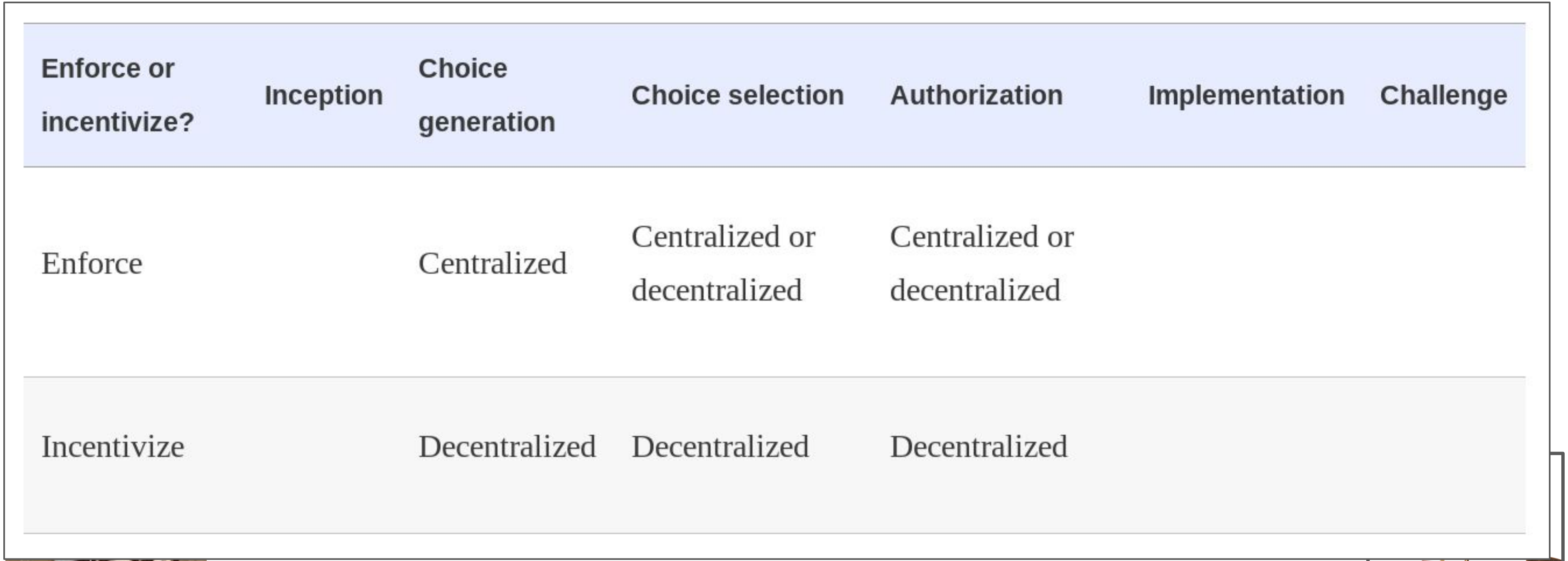
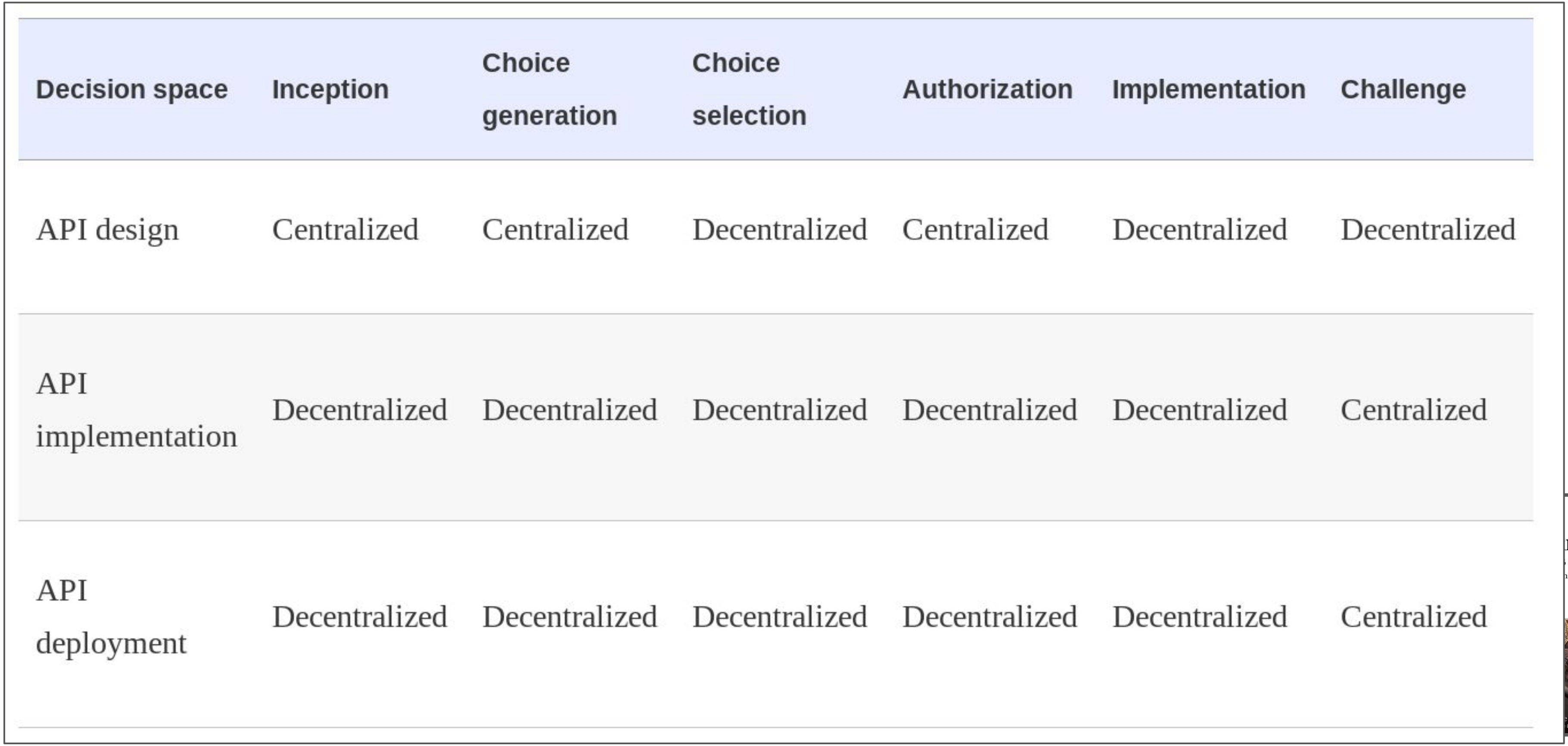
DDM : Designing Decision Systems



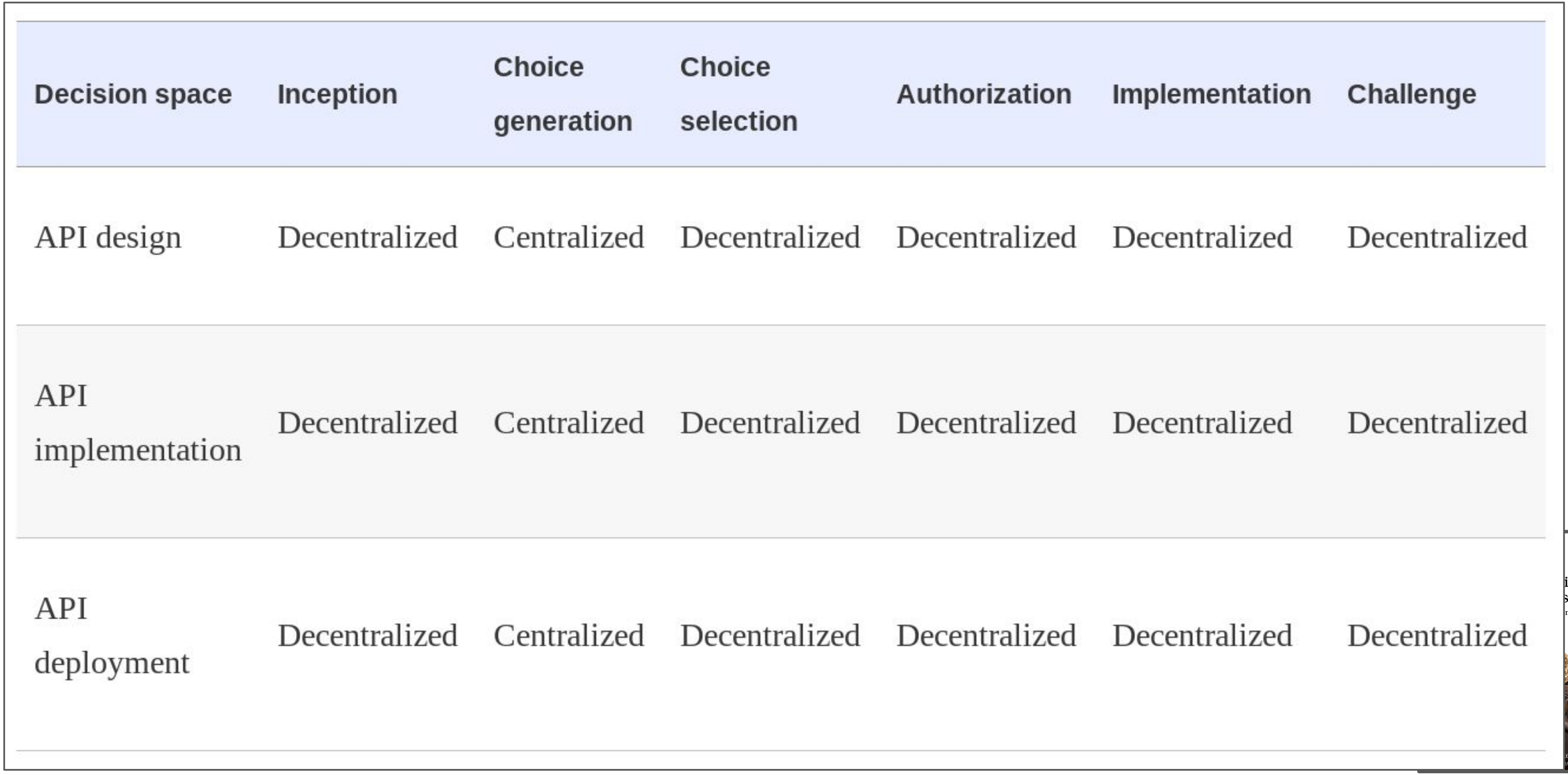
Enforce or incentivize?	Inception	Choice generation	Choice selection	Authorization	Implementation	Challenge
Enforce		Centralized	Centralized or decentralized	Centralized or decentralized		
Incentivize		Decentralized	Decentralized	Decentralized		

DDM : Interface Supervision

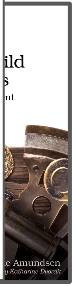


Decision space	Inception	Choice generation	Choice selection	Authorization	Implementation	Challenge
API design	Centralized	Centralized	Decentralized	Centralized	Decentralized	Decentralized
API implementation	Decentralized	Decentralized	Decentralized	Decentralized	Decentralized	Centralized
API deployment	Decentralized	Decentralized	Decentralized	Decentralized	Decentralized	Centralized

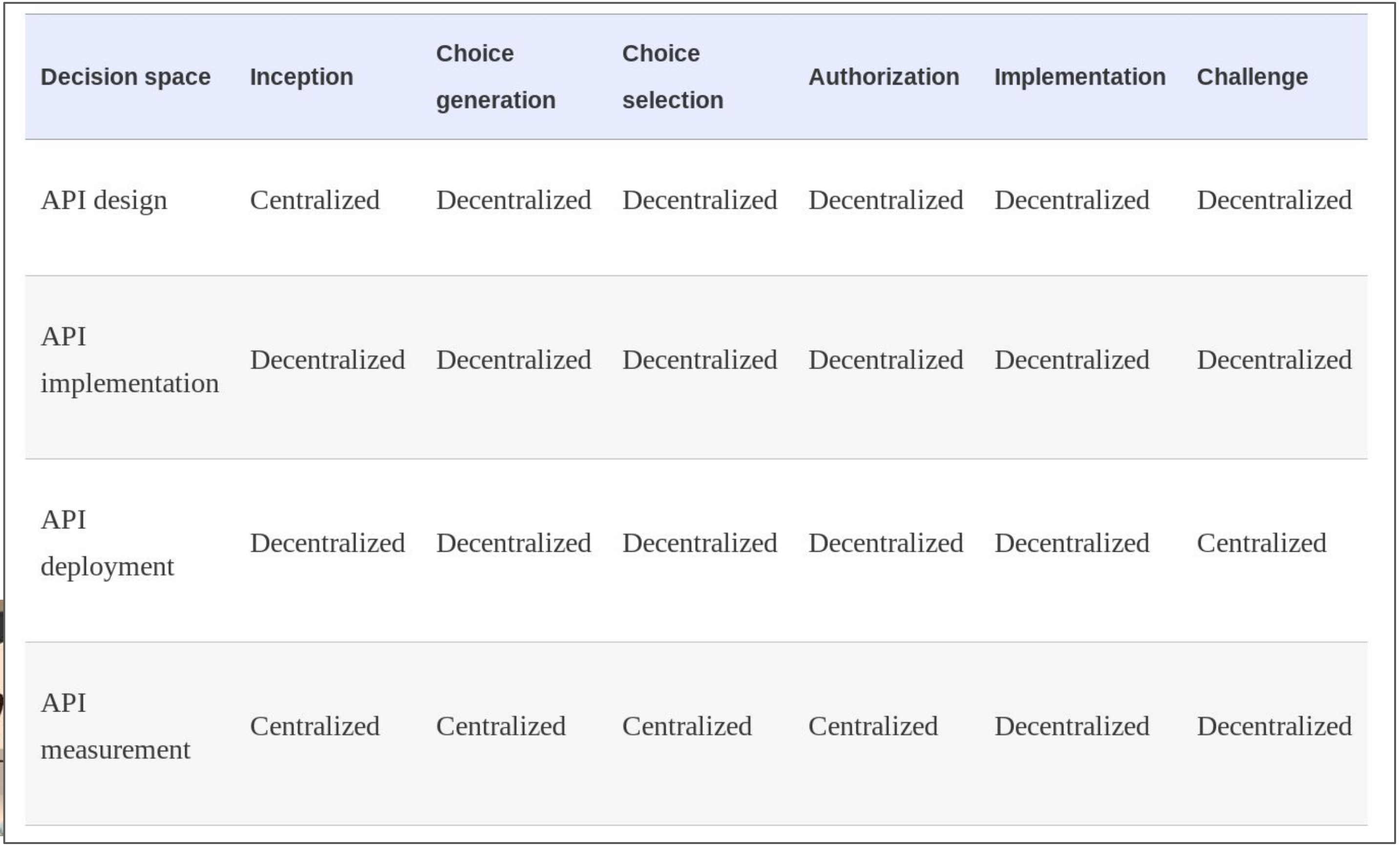
DDM : Machine-Driven



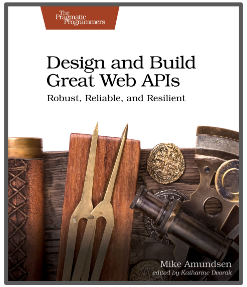
Decision space	Inception	Choice generation	Choice selection	Authorization	Implementation	Challenge
API design	Decentralized	Centralized	Decentralized	Decentralized	Decentralized	Decentralized
API implementation	Decentralized	Centralized	Decentralized	Decentralized	Decentralized	Decentralized
API deployment	Decentralized	Centralized	Decentralized	Decentralized	Decentralized	Decentralized



DDM : Collaborative Decision-Making



Decision space	Inception	Choice generation	Choice selection	Authorization	Implementation	Challenge
API design	Centralized	Decentralized	Decentralized	Decentralized	Decentralized	Decentralized
API implementation	Decentralized	Decentralized	Decentralized	Decentralized	Decentralized	Decentralized
API deployment	Decentralized	Decentralized	Decentralized	Decentralized	Decentralized	Centralized
API measurement	Centralized	Centralized	Centralized	Centralized	Decentralized	Decentralized



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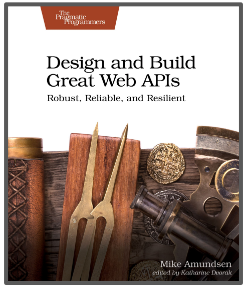
- DDM Examples



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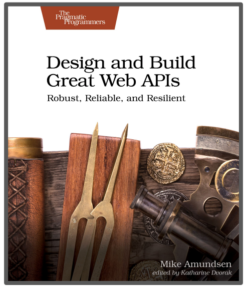
Scaling your Governance Program



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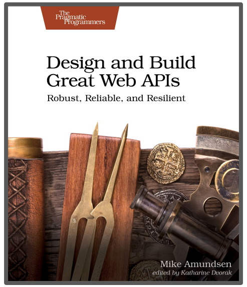
API Governance

- Governance at Scale
- Products and Landscapes
- Governance Continuum



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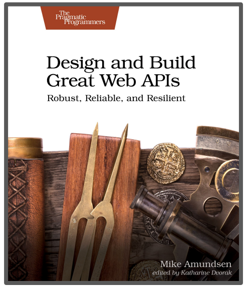
API Governance : At Scale

- The Platform Principle
- Principles, Protocols, Patterns
- API the APIs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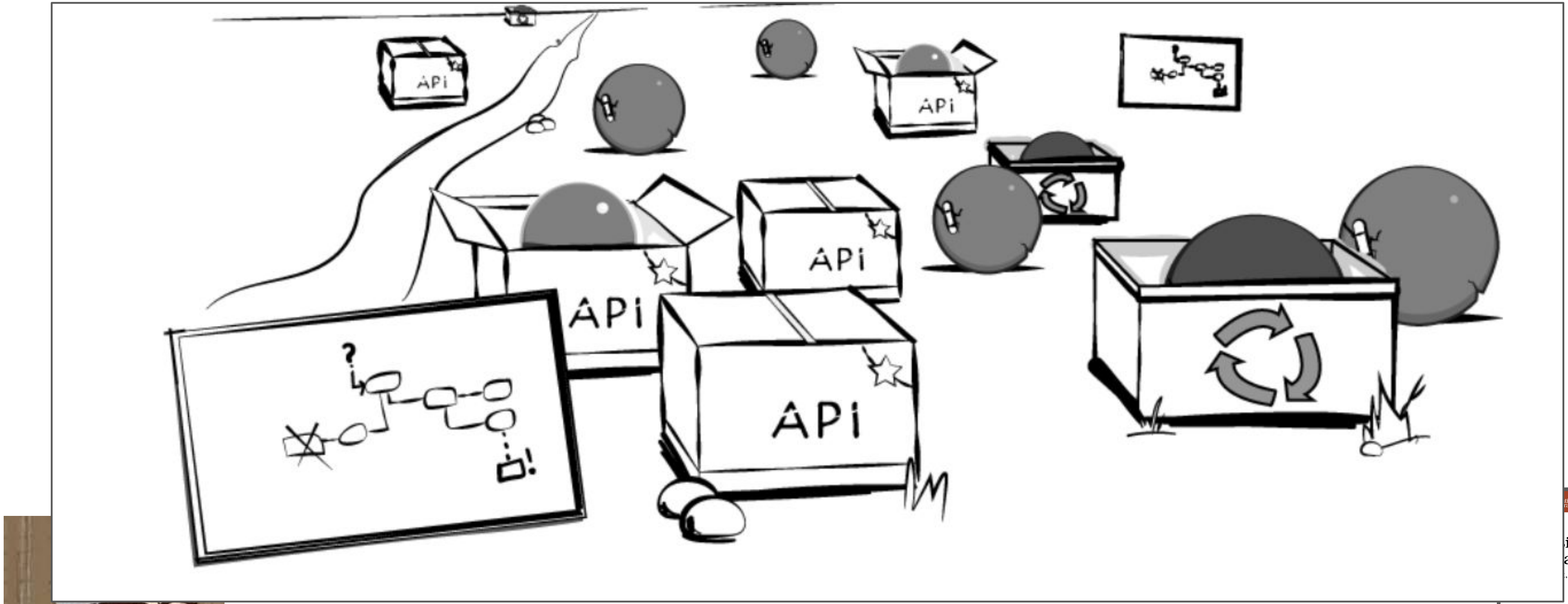
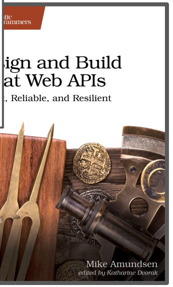
Governing the API Landscape





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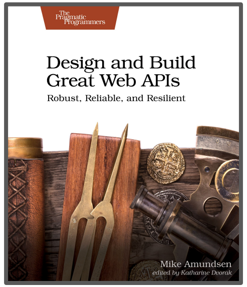
API Governance : Product Pillars

- Strategy
- Design
- Documentation
- Development
- Testing
- Deployment
- Security
- Monitoring
- Discovery/Promotion
- Change Management



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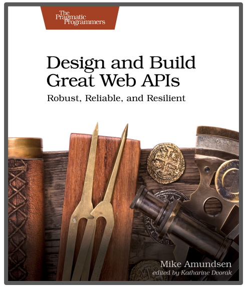
edited by Katharine Dvorak

API Governance : Landscape Vs

- Variety
- Vocabulary
- Volume
- Velocity
- Vulnerability
- Visibility
- Versioning
- Volatility



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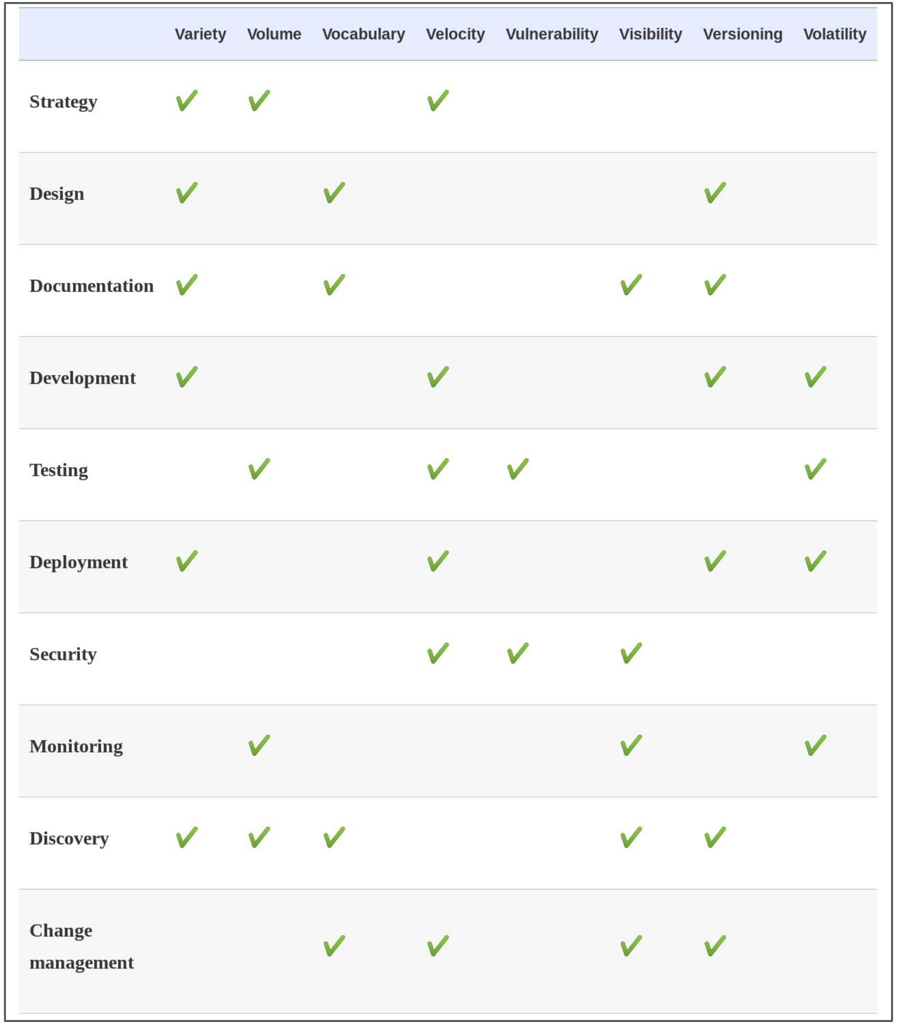
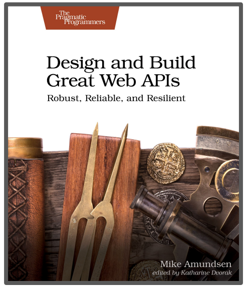


	Variety	Volume	Vocabulary	Velocity	Vulnerability	Visibility	Versioning	Volatility
Strategy	✓	✓		✓				
Design	✓		✓				✓	
Documentation	✓		✓			✓	✓	
Development	✓			✓			✓	✓
Testing		✓		✓	✓			✓
Deployment	✓			✓			✓	✓
Security				✓	✓	✓		
Monitoring		✓				✓		✓
Discovery	✓	✓	✓			✓	✓	
Change management			✓	✓		✓	✓	



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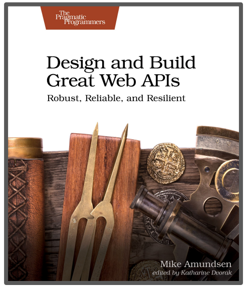
Governance Continuum

- Controlling
  - First time, new team, new tech
- Deciding
  - More teams, centralized expertise
- Coaching
  - More team, distributed expertise
- Advising
  - Lots of teams, self-sufficient expertise



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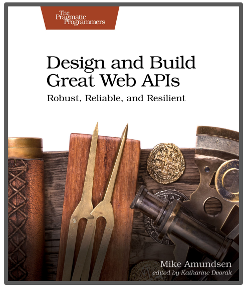
Governance : Review

- Governance at Scale
- Products and Landscapes
- Governance Continuum



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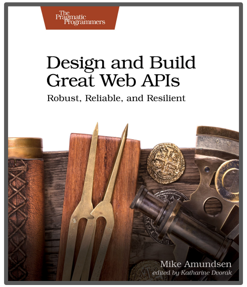
Summary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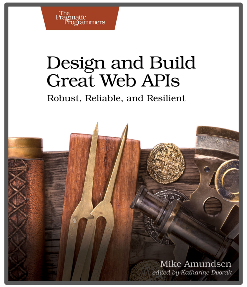
Change Management : Review

- Changing an API
- Managing Change Continuously
- Improving API Changeability



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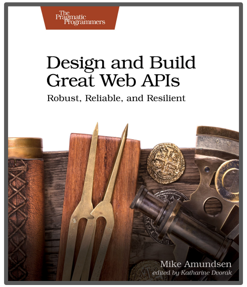
Distributed Decision-Making : Review

- Understanding Decisions
- Governing Decisions
- DDM Examples



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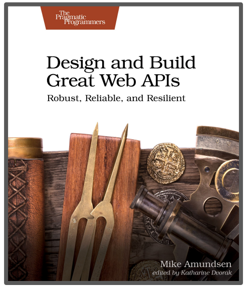

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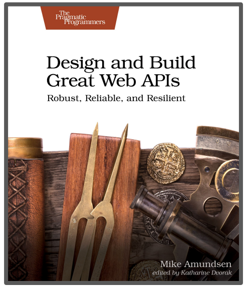
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